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THE

GARDENER'S AND BOTANIST'S DICTIONARY;

CONTAINING
THE BEST AND NEWEST METHODS OF CULTIVATING AND IMPROVING THE
KITCHEN, FRUIT, AND FLOWER GARDEN, AND NURSERY;
OF PERFORMING THE
PRACTICAL PARTS OF AGRICULTURE;
OF MANAGING VINEYARDS,
AND
OF PROPAGATING ALL SORTS OF TIMBER TREES.

BY THE LATE
PHILIP MILLER, F.R.S.
GARDENER TO THE WORSHIPFUL COMPANY OF APOTHECARIES AT THEIR BOTANIC GARDEN IN CHELSEA,
AND MEMBER OF THE BOTANIC ACADEMY AT FLORENCE.

TO WHICH ARE NOW FIRST ADDED,
A COMPLETE
ENUMERATION AND DESCRIPTION OF ALL PLANTS HITHERTO KNOWN,
WITH THEIR
GENERIC AND SPECIFIC CHARACTERS,
PLACES OF GROWTH, TIMES OF FLOWERING, AND USES BOTH MEDICINAL
AND ECONOMICAL.

THE WHOLE CORRECTED AND NEWLY ARRANGED,
WITH THE ADDITION OF ALL THE MODERN IMPROVEMENTS IN LANDSCAPE GARDENING, AND IN THE
CULTURE OF TREES, PLANTS, AND FRUITS,
PARTICULARLY IN THE VARIOUS KINDS OF HOT HOUSES AND FORCING FRAMES:
WITH PLATES EXPLANATORY BOTH OF THEM, AND THE PRINCIPLES OF BOTANY.

BY
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IN TWO VOLUMES.

VOL. I. PART II. CLA—I.

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BY LAW AND GILBERT, ST. JOHN'S SQUARE, CLERKENWELL.
M DCCC VII.

WELLCOME
HISTORICAL
MEDICAL

THE
GARDENER'S AND BOTANIST'S
DICTIONARY.

[CLANDESTINA. See *Lathræa.*

CLARY. See *Salvia.*

CLATHROIDES and CLATHROIDASTRUM. See *Clathrus.*

CLATHRUS. A genus of *Fungi*, inſtituted by Micheli.—Roundiſh, conſiſting of a reticular, windowed, hollow body; the ramifications connected on every ſide.

There are only four ſpecies recited by Linneus. Mr. Hudſon has eight ſpecies. Seven ſpecies are figured by Bolton in t. 93 and 94.

In Dr. Withering's Botanical Arrangement, the name *Trichia* is adopted from Haller, and he has eleven ſpecies, comprehending ſome of Linneus's Mucors, the Sphærocarpus of Bulliard, and the Lycoperdon rufum of Dickſon.

The eſſential character there given is, that it grows in cluſters, moſtly fixed to a membranaceous baſe. Capſules globular or oblong. Seeds eſcaping from its whole ſurface through openings made by the ſeparations of the fibres. They are found chiefly on rotten wood.

CLAVA HERCULIS. See *Zanthoxylum.*

CLAVARIA. A genus of Fungi; one of the loweſt order in the ſcale of vegetation, differing ſometimes very little in ſubſtance from the rotten wood whence it iſſues. It is a ſmooth oblong body, of one uniform ſubſtance.

Thirteen ſpecies are recited in the *Syſtema Vegetabilium:* five ſimple, and the reſt branched. In Withering's Botanical Arrangement there are twenty ſpecies, beſides many varieties. They are figured by Schæffer, Micheli, Bulliard, Bolton, Dickſon, &c.

In Dr. Withering's Work, the eſſential character is—Fungus oblong, upright, club-ſhaped. Seeds emitted from every part of its ſurface.]

CLAYTONIA. (*From Mr. John Clayton, who collected plants chiefly in Virginia, and ſent them to Gronovius, who publiſhed them in his Flora Virginica.*)

Gronov. Lin. gen. n. 287. *Reich.* 309. *Schreb.* 402. *Gærtn. t.* 129. *Juſſ.* 314.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Succulentæ. Portulaceæ.* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* bivalve, ovate, tranſverſe at the baſe.

COR. *Petals* five, obcordate, with claws, emarginate.

STAM. *Filaments* five, ſubulate, recurve, a little ſhorter than the corolla, each inſerted into the claw of each petal. *Anthers* oblong, incumbent.

PIST. *Germ* roundiſh. *Style* ſimple, the length of the ſtamens. *Stigma* trifid.

PER. *Capſule* roundiſh, three-celled, three-valved, elaſtic.

SEEDS three, round.

OBS. C. portulacaria, *having obovate petals, no ſtyle, and three ſimple ſtigmas: is removed from this genus.*

ESSENTIAL CHARACTER.

Cal. two-valved. *Cor.* five-petalled. *Stigma* trifid (or three). *Capſ.* three-valved, one-celled, three-ſeeded.

SPECIES.

1. Claytonia virginica.

Lin. ſpec. 294. *Reich.* 572. *Gron. virg.* 25. *Pluk. alm. t.* 102. *f.* 3. *Rudb. elyſ.* 2. 139. *f.* 6. *Ait. hort. kew.* 284.

Leaves linear-lanceolate; petals entire.

2. Claytonia ſibirica.

Lin. ſpec. 294. *ſyſt.* 245. *Reich.* 572. *hort. upſ.* 52. *Gmel. ſib.* 4. 89. *Gærtn. fruct.* 2. 221.

Limnia. *Act. ſtockb.* 1746. 130. *t.* 5.

Leaves ovate.

DESCRIPTIONS, &c.

1. Has a ſmall tuberous root, which ſends out ſlender ſtalks in the ſpring, about three inches high, having each two or three ſucculent narrow leaves about two inches long, of a deep green colour. At the top of the ſtalk four or five flowers are produced in a looſe bunch. Petals ſpreading, white ſpotted with red on their inſide. The flowers appear in april, and the ſeeds ripen in june. It grows naturally in Virginia, whence it was ſent by Mr. Clayton, [and cultivated by Mr. Miller before the year 1759. The leaves are linear, and the calyxes obtuſe. There is a variety with lanceolate leaves, and acutiſh calyxes [a].]

2. This is a low plant, ſeldom riſing more than two or three inches high. The root is tuberous, as in the other.

[Root-leaves petioled, nerved, very ſmooth. Scape declined. Stem-leaves two, oppoſite, ſeſſile, between which are two one-ranked racemes; whilſt tender theſe are revolute; and one of them is two-leaved. Flowers red. Stamens inſerted into the claws of the petals [b].]

PROPAGATION AND CULTURE.

The plants are both propagated by ſeeds, and alſo from offſets ſent out from the roots: the ſeeds ſhould be ſown upon a ſhady border of light earth, or in pots filled with the like mould, ſoon after they are ripe; for if they are kept out of the ground till ſpring, the plants will not come up till the next year; whereas thoſe which are ſown early in the autumn, will grow the following ſpring, ſo that a whole year is gained. When the plants come up, they will require no other care but to keep them clean from weeds; and in the autumn, if ſome old tanners bark is ſpread over the ſurface of the ground, it will ſecure the roots from being injured by froſt; but in mild winters they will not require protection.

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[a] Hort. kew.

[b] Linn. ſyſt.

The beſt time to tranſplant the roots is about Michaelmas, when they are inactive; but as they are ſmall, if great care is not taken in opening the ground, the roots may be buried and loſt; for being of a dark colour, they are not eaſily diſtinguiſhed from the ground.

[Claytonia Portulacaria. See Portulacaria.

Cleavers. See *Galium Aparine.*]

CLEMĂTIS. (*From* κλῆμα, *viticula, ſarmentum, becauſe it climbs trees, by means of its pliant twigs, like thoſe of the Vine.*)

Lin. gen. n. 696. *Reich.* 754. *Schreb.* 950. *Dill. elth.* 73. *Gærtn.* 74. *Juſſ.* 232.

Clematitis. *Tournef.* 150. Viticella. *Dill. gen.* 14.

Claſſ. 13. 7. Polyandria Polyginia.

Nat. order of *Multiſiliquæ.* *Ranunculaceæ.* Juſſ.

GENERIC CHARACTER.

Cal. none.

Cor. *Petals* four, oblong, lax.

Stam. *Filaments* very many, ſubulate, ſhorter than the corolla. *Anthers* growing to the ſide of the filaments.

Pist. *Germs* very many, roundiſh, compreſſed, ending in ſubulate *Styles,* longer than the ſtamens. *Stigmas* ſimple.

Per. none. *Receptacle* headed, ſmall.

Seeds very many, roundiſh, compreſſed, furniſhed with the ſtyle, in various forms.

Obs. Clematitis T. *has lanceolate petals; the ſeeds have a very long villoſe briſtle.*

Flammula *has eight piſtils; the ſeeds orbicular, with a very long feather.*

Viticella *has five erect deltoid petals; the ſeeds have a naked crooked point.*

C. virginiana & dioica *are both dioecous.*

ESSENTIAL CHARACTER.

Cal. none. *Pet.* four, ſometimes five, or even ſix. *Seeds* having a tail.

SPECIES.

* *Climbing.*

1. Clematis cirrhoſa. *Evergreen Virgin's Bower.*
Lin. ſpec. 766. *ſyſt.* 512. *Reich.* 2. 641. *hort. cliff.* 226. *Bauh. pin.* 300. *n.* 3. *Cluſ. hiſt.* 1. 123. *Raii hiſt.* 621. 2. *Bauh. hiſt.* 2. 126. *fig. Ger.* 739. *f.* 2. *emac.* 886. *f.* 2. *Park. theat.* 383. *f.* 2.
Leaves ſimple, ſtem climbing by oppoſite tendrils, peduncles one-flowered, lateral.

2. Clematis Viticella. *Purple Virgin's Bower.*
Lin. ſpec. 765. *ſyſt.* 512. *Reich.* 2. 641. *hort. cliff.* 225. *Scop. carn. n.* 670. *Bauh. pin.* 300. *n.* 9. *Cluſ. hiſt.* 1. 122. *Raii hiſt.* 622. 6. *Bauh. hiſt.* 2. 128. *f.* 1. *Ger. emac.* 887. *f.* 1, 2. *Park. theat.* 381. *f.* 4. *Camer. epit.* 696.
β. C. alpina. *Mill. dict. n.* 9.
C. alp. geranii folio. *Bauh. pin.* 300.
Leaves compound and decompound, leaflets ovate, ſublobed, quite entire.

3. Clematis Viorna. *Leathery-flowered Virgin's Bower.*
Lin. ſpec. 765. *Reich.* 2. 642. *Gron. virg.* 62. 84. *Raii hiſt.* 1926.
Flammula. *Dill. elth. t.* 118. *f.* 144.
Leaves compound and decompound, ſome of the leaflets trifid.

4. Clematis criſpa. *Curled Virgin's Bower.*
Lin. ſpec. 765. *Reich.* 2. 642. *Dill. elth. t.* 73. *f.* 84. *Thunb. jap.* 239.
Leaves ſimple and ternate, leaflets entire and three-lobed.

5. Clematis orientalis. *Oriental Virgin's Bower.*
Lin. ſpec. 765. *Reich.* 2. 642.
Flammula. *Dill. elth. t.* 119. *f.* 145.
Leaves compound, leaflets gaſhed angular lobed wedge-form, petals villoſe on the inſide.

[6. Clematis hexapetala.
Lin. ſyſt. 512. *ſuppl.* 271. *Forſt. florul. auſtr. n.* 230.
Leaves compound, leaflets ovate ſerrate, peduncles two-leaved, corolla ſpreading, ſix-petalled.

7. Clematis virginiana. *Virginian Virgin's Bower.*
Lin. ſpec. 766. *Reich.* 2. 642. *amœn.* 4. 275. *Pluk. mant. t.* 389. *f.* 4. *Gron. virg.* 62. 84. *Thunb. jap.* 240. *Lour. cochinch.* 345. *Kæmpf. amoen.* 5. 885.
Leaves ternate, leaflets cordate, ſomewhat lobed and angular, climbing, flowers dioecous.

8. Clematis florida. *Large-flowered Virgin's Bower.*
Lin. ſyſt. 512. *Thunb. jap.* 240.
Leaves decompound, leaflets binate and ternate; petals ovate.

9. Clematis japonica. *Japan Virgin's Bower.*
Lin. ſyſt. 512. *Thunb. jap.* 240.
Leaves ternate, leaflets elliptic-ovate, ſerrate; flowers cylindric.]

10. Clematis dioica. *Trifoliate Virgin's Bower,* or *Climber.*
Lin. ſpec. 765. *Reich.* 2. 643. *amœn.* 6. 398. *Brown. jam.* 255. *Sloan. jam.* 1. 199. *t.* 128. *f.* 1. *Lour. cochinch.* 344.
Leaves ternate, quite entire; flowers dioecous.

11. Clematis Vitalba. *Common Virgin's Bower, wild Climber,* or *Traveller's Joy.*
Lin. ſpec. 766. *ſyſt.* 512. *Reich.* 2. 643. *hort. cliff.* 225. *Jacqu. auſtr.* 4. *t.* 308. *Hudſ. angl.* 238. *With.* 568. *Curt. lond.* 4. 37. *Hall. helv. n.* 1142. *Scop. carn. n.* 669. *Pollich. pal. n.* 521. *Gærtn. fruct.* 1. 353. *t.* 74. *Villars dauph.* 3. 710. *Krock. ſileſ. n.* 859.
C. ſylveſtris latifolia. *Bauh. pin.* 300.—ſ. Viorna. *Park. theat.* 383. 1.—tertia ſ. Vitalba. *Camer. epit.* 697.
C. latifolia integra. *Bauh. hiſt.* 2. 125. *f.* 1. *Raii hiſt.* 620.—dentata. *Bauh. hiſt. f.* 2.
Vitalba. *Dod. pempt.* 404.
Viorna. *Ger.* 739. 1. *emac.* 886. 1.
Atragene Theophr. *Cluſ. hiſt.* 1. 122.
β. C. canadenſis. *Mill. dict. n.* 5. *Broad-leaved Canada Virgin's Bower,* or *Climber.*
C. can. latifolia & triphylla.
Leaves pinnate, leaflets cordate, climbing.

12. Clematis Flammula. *Sweet-ſcented Virgin's Bower.*
Lin. ſpec. 766. *Reich.* 2. 643. *hort. cliff.* 225. *Hall. helv. n.* 1143. *Ger. prov.* 382. *Allion. pedem. n.* 1080. *Villars dauph.* 3. 711. *Bauh. hiſt.* 2. 127. *f.* 1. *Bauh. pin.* 300. *n.* 4. *Raii hiſt.* 621. 3.
C. urens. *Ger.* 641. *f.* 1. *emac.* 888.—fl. albo. *Park. theat.* 381. *f.* 3.
Flammula. *Dod. pempt.* 404. *Dalech. hiſt.* 1171.
Lower leaves pinnate laciniate, upper ſimple, quite entire, lanceolate.

** *Erect.*

[13. Clematis maritima.
Lin. ſpec. 767. *Reich.* 644.
C. marit. repens. *Bauh. pin.* 300. *n.* 5. *prodr.* 135. *n.* 1.
Leaves pinnate, linear; ſtems ſimple, hexagonal.]

14. Clematis recta. *Upright Virgin's Bower.*
Lin. ſpec. 767. *Reich.* 2. 644. *hort. cliff.* 225. *upſ.* 155. *Jacqu. auſtr.* 3. *t.* 291. *Hall. helv. n.* 1144. *Scop. carn. n.* 667. *Villars dauph.* 3. 711. *Krock. ſileſ. n.* 857. *Woodv. med. bot.* 175. *t.* 62.
C. ſ. Flammula ſurrecta alba. *Bauh. hiſt.* 2. 127. *f.* 2. *Raii hiſt.* 621. *n.* 4.
Flammula. *Dod. pempt.* 405. *f.* 1. *Cam. epit.* 698. *Cluſ. hiſt.* 1. 124.—recta. *Bauh. pin.* 300.
F. jovis ſurrecta. *Ger.* 74. 1. 2. *emac.* 888. *f.* 2. *Park. theat.* 382. *f.* 2.
β. C. hiſpanica. *Mill. dict. n.* 3.
C. hiſp. ſurrecta altera & humilior, fl. albicante. *H. R. Par.*
Leaves pinnate, leaflets ovate-lanceolate, quite entire; ſtem erect; flowers four and five petalled.

15. Clematis integrifolia. *Entire-leaved Virgin's Bower,* or *Hungarian Climber.*
Lin. ſpec. 767. *Reich.* 2. 644. *hort. cliff.* 225. *upſ.* 156. *Jacqu. auſtr.* 4. *t.* 363. *Curt. mag.* 65. *Krock. ſileſ. n.* 858.
C. nutans. *Crantz. auſtr.* 124.
C. inclinata. *Scop. carn. n.* 668.
C. cærulea erecta. *Bauh. pin.* 300.

C. cær. pannonica. *Cluſ. hiſt.* 1. 123. *Park. parad.* 393. *n.* 9.
C. pannon. *Ger.* 742. *f.* 4. *emac.* 889. *f.* 4. *Raii hiſt.* 622. *n.* 5.—fl. cærul. ſurrecta. *Bauh. hiſt.* 129. *f.* 3.
Leaves ſimple, ovate-lanceolate, flowers drooping.

* *Climbing.*

[16. Clematis calycina. *Minorca Virgin's Bower.*
L'Herit. ſtirp. nov. 2. *t.* 26. *Ait. hort. kew.* 2. 259. *Vahl ſymb.* 3. 75.
C. balearica. *De Lamark encycl.* 2. 43.
Calycine involucre approximating; leaves ternate, the intermediate one three-parted.]

17. Clematis americana. *South American Virgin's Bower,* or *Climber.*
Mill. dict. n. 14.
Leaves ternate, leafltts cordate acuminate, quite entire, flowers corymbed.

[18. Clematis chinenſis. *Chineſe Virgin's Bower.*
Retz. obſ. 2. 18. *n.* 53. *t.* 2.—Conf. *Lour. cochinch.* 345. 3.
Leaves quinate-pinnate, leaflets lanceolate.

* * *Erect.*

19. Clematis ochroleuca. *Yellow-flowered Virgin's Bower.*
Ait. hort. kew. 2. 260. *Pluk. mant.* 51. *t.* 379. *f.* 5.
Leaves ſimple ovate pubeſcent quite entire; flowers erect. Climbing.

20. Clematis trifolia.
Vahl. ſymb. 3. 74. *Lamarck encycl.* 2. *P.* 1. *p.* 43.
Leaves ternate, leaflets ovate-ſerrate, ſerratures mucronate, peduncles three-flowered.

21. Clematis minor.
Lour. cochinch. 345.
Leaves quinate, leaflets conical, three-nerved, peduncles very long.

DESCRIPTIONS, *&c.*

The Virgin's Bowers are chiefly climbing ſhrubs, ſome of them however are erect. Leaves oppoſite, ſimple ternate or unequally pinnate. Flowers axillary, but more frequently terminating; ſolitary, but more frequently in corimbs; in ſome ſpecies dioecous; in a few furniſhed with a turbinate bifid calycle, removed a little from the petals[a].]

1. This has a climbing ſtalk, riſing to the height of eight or ten feet, ſending out branches from every joint, whereby it becomes a very thick buſhy plant. Leaves ſometimes ſingle, ſometimes double, frequently ternate, ſerrate. [According to Linneus, they are uſually ſimple, petioled, ovate, ſeveral together from the ſame joint.] They keep their verdure all the year. The tendrils come out oppoſite to the leaves. The flowers are produced from the ſide of the branches; they are large, of an herbaceous colour, [and under each is a remote, hemiſpheric, minute calycle[b].] They appear at the end of december, or beginning of january. It grows naturally in Spain: [where it was obſerved by Cluſius in 1565. In 1596, it was cultivated by Gerárde[c], who calls it *Traveller's Joy of Candia.* Johnſon names it better *Spaniſh Traveller's Joy,* and Parkinſon, *Spaniſh wild Climber.*]

2. Stems very ſlender and weak, having many joints, whence come out ſide branches, which are again divided into ſmaller. If theſe be ſupported, they will riſe to the height of eight or ten feet. The leaves branch out into many diviſions, each having a ſlender foot-ſtalk, with three oval entire leaflets; four foot-ſtalks generally ariſe from the ſame joint, two on each ſide; the two lower have three of theſe diviſions, ſo that they are compoſed of nine leaflets; but the two upper have only two oppoſite leaves on each, and between theſe ariſe three ſlender peduncles, each ſupporting one flower. [According to Linneus, the lower leaves are cordate, the middle three-lobed, the upper pinnate, the floral leaves ovate. Petals deciduous, deltoid, very obtuſe, thinner on the ſides:] they are of a dark worn out purple, or blue, or bright purple or red. It grows naturally in the woods of Spain and Italy: [and was cultivated in 1569, by Mr. Hugh Morgan[d]. Gerarde calls it blue or red-flowering Ladies Bower, from its aptneſs to make bowers or arbours in gardens.]

There are four varieties cultivated in the nurſeries. 1. Single blue. 2. Single purple. 3. Single red. 4. Double purple. They flower in june and july, but the ſeeds ſeldom ripen in England. The laſt continues to the end of auguſt.

β. Riſes only three or four feet high. The leaves have nine leaflets, three on each footſtalk. The flowers come out at the joints of the ſtem, are white, and make no great appearance. It flowers in may, and grows naturally on the mountains of Italy. Mr. Miller received it from Monte Baldo.

3. [Stems many, ſlender, ſarmentoſe, round, ſtriated, proſtrate or climbing. Leaflets three-lobed, divided to the petiole, ſmooth, paler underneath, entire, ſometimes gaſhed, but commonly ſomewhat ſinuated and waved, the nerve of the ſide-lobes not in the middle, but nearer to the inner ſide. Peduncles long, ſolitary, axillary, with one pair of ſimple leaves in the middle; flowers ſolitary, nodding, coriaceous, ribbed on the outſide, never opening except at the end, where the petals are bent back; they are of a greeniſh purple on the outſide, and very pale green within. The ſtamens ſcarcely emerge from the corolla. Seeds broadiſh, flat, at firſt green then brown; tail bent in and plumoſe, of a browiſh green colour[e].

Native of Carolina and Virginia. It is in Baniſter's catalogue of the plants of Virginia ſent over in the year 1680[f]. In 1732, it was cultivated by James Sherard, M. D. at Eltham[g]:] and Mr. Miller received the ſeeds from both countries. It flowers from june to ſeptember, and if the autumn prove warm, the ſeeds will ripen.

4. This has weak ſtalks, which riſe near four feet high, and by their claſpers faſten themſelves to neighbouring plants. The flowers come out ſingly from the ſides of the branches upon ſhort peduncles, having one or two pair of leaves on them, which are oblong and ſharp-pointed. The corolla is purple, the inſide is curled, and has many longitudinal furrows.

[Thunberg deſcribes the ſtem as ſtriated, flexuoſe and ſmooth; the leaves are five-nerved, petioled, ovate, acute and ſmooth; and the flowers as growing in a compound, trichotomous panicle.]

Native of Carolina, whence Mr. Miller received the ſeeds in 1726. It was cultivated in the Eltham garden at the ſame time. [It is alſo a native of Florida and Japan.] It flowers in july, and the ſeeds ripen in ſeptember.

5. This alſo has weak climbing ſtalks, riſing to the height of ſeven or eight feet when ſupported. The leaves conſiſt of nine leaflets, which are angular and ſharp-pointed.

[According to the deſcription of Dillenius, they reſemble the upper leaves of ſmallage in ſhape, but they are glaucous on both ſides, and have ſuch ſoft and ſlender hairs on them as are not eaſily either ſeen or felt: the petioles and ends of the twigs have alſo the ſame delicate pubeſcence. Flowers drooping; petals bent back, finally flat, villoſe within, of a yellowiſh green colour, with a tinge of ruſſet on the upper part or outſide. Stamens collected into an oblong purple head, with oblong purple anthers yellow at the edge.

It flowers from july to october;] and was diſcovered by Tournefort in the Levant, whence he ſent the ſeeds to the royal garden at Paris. [It was cultivated here in 1732, by James Sherard, M. D. at Eltham[h].

6. Leaves ternate: leaflets cordate-ovate, crenate-gaſhed. Peduncles branching, trichotomous. Flowers yellowiſh, dioecous.—Native of New Zealand; found in Charlotte Sound, november 1774[i].

7. Stems climbing, very high. Leaves ternate: leaflets thinly but deeply ſerrate-angular, naked, cordate, veined: floral leaves ſimple, ſix together, or ſubverticillate, quite entire, three-lobed or undivided. Peduncles ſimple and three-flowered mixed. Corolla white, ſpreading, tomentoſe beneath: petals ovate-oblong, not lanceolate, ſpreading. Stamens and

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[a] Juſſieu.
[b] Linn. ſpec.
[c] Hort. kew.
[d] Ibid.
[e] Dillenius.
[f] Ray's hiſt. app.
[g] Hort. kew.
[h] Ibid.
[i] Forſter.

piſtils yellowiſh white. The petiolules twiſt about and ſerve as tendrils to elevate the plant. The female flowers have ſtamens, but the anthers are deſtitute of pollen[k].

Loureiro aſſerts that the flowers are hermaphrodite; and that the ſeeds are ſix in number, of an ovate-oblong ſhape, with a ſtraight hairy tail, about the ſame length with the ſtamens.

Native of North America: alſo of Japan and Cochinchina. Cultivated in 1767, by Mr. James Gordon. It flowers from june to auguſt[l].

8. Stem ſtriated, purple, ſmooth. Leaves oppoſite, petioled, ſubtriternate. Leaflets petioled; pinnas ſeſſile, ovate, entire or ſeldom gaſhed, villoſe, the middle one larger. Petioles perfoliate at the baſe, ſemicylindric, ſpreading out horizontally. Flowers axillary, peduncled, ſolitary. Peduncles villoſe, one-flowered, longer than the leaves. Corolla large, handſome, ſpreading; petals acuminate, yellowiſh. Stamens unequal, purpliſh. This differs from *C. viticella* in having decompound leaves, acute leaflets, and ovate petals. Native of Japan[m].

Introduced about 1776, by John Fothergill, M.D. It flowers moſt part of the year[n].

9. Stem filiform ſtriated purple villoſe. Leaves ſeveral from each joint, petioled. Leaflets on ſhort petioles, acuminate, equally ſerrate from the middle to the end, nerved, villoſe, the middle one larger. Petiole capillary, looſe, flowers from the joints, peduncled, ſolitary, purple. Peduncles one-flowered, the length of the leaflets. This differs from *C. virginiana* in having the leaflets not cordate, but drawn to a point towards both ends, the flowers cylindric, not ovate and peduncled.——Native of Japan[o].]

10. This has ſlender tough climbing ſtalks, riſing to the height of ten or twelve feet. Leaves trifoliate, coming out on each ſide the ſtalk; the leaflets are large, ovate and entire, having three or five longitudinal nerves. The peduncles are produced at the ſame joints, cloſe to the petioles, one on each ſide: theſe are long, naked, and grow horizontally, extending beyond the leaves before they divide and branch; then there come out three or four pairs of ſmall footſtalks from the large one, each of which divides again into three ſmaller, each ſupporting a ſingle flower: the lower pair of theſe is extended four or five inches, the others gradually diminiſh to the top, ſo that they form a pyramidal thyrſe of flowers; theſe are white, and are compoſed of four narrow petals which are reflected, but the ſtamens all ſtand erect.

[There are about eighty ſeeds diſpoſed in a head; they are obtuſely three-cornered and compreſſed, with a very long tail, fringed with many white hairs[p].

Native of the Weſt Indies, and alſo of Cochinchina; climbing very high without tendrils.] It was ſent to Mr. Miller from Jamaica, by Dr. Houſtoun.

11. [This ſhrub climbs as high as twenty feet by means of the twiſted petioles. The younger ſtems are ſlightly hirſute, flexible and purple: the old ones are the thickneſs of the finger, deeply grooved, and of a whitiſh colour. Leaves oppoſite, ſpreading, on long petioles, they conſiſt of two pairs of leaflets with an odd one; leaflets remote, ſubacuminate, ſometimes cordate, entire, ſerrate, or lobed, of a yellowiſh green colour, ſomewhat ſhining, veined on the under ſide. Flowers in axillary racemes, conjugate, leafy, dividing firſt into three, then into two ſmaller branches; ſweet-ſcented. Petals four, croſs-ſhaped, (ſometimes five, ſlightly emarginate, ſpreading, a little rolled back) villoſe, on the upper ſide of a pale ſulphur colour, underneath greeniſh. Filaments the length of the corolla, upright: anthers oblong, whitiſh[q]. Seeds about twenty, covered with a membranaceous thin reddiſh coat, with whitiſh hairs ſcattered over it, and ending in a very long plumoſe tail; when this coat, which does not open of itſelf, is taken off, the ſeed appears to be elliptic, turgidly lens-ſhaped, and of a pale yellow colour[r].]

β. This in its appearance is very like the common ſort, but the leaves are broader, and grow by threes on the ſame foot-ſtalk, whereas in that there are five or ſeven leaflets on each leaf. The flowers appear at the ſame time, but the ſeeds do not ripen in England, unleſs the ſeaſon be very warm. There is little beauty in this ſort. It is a native of North America[s].

[12. This is rather creeping than climbing. It is lower and more tender than the foregoing; leaves ſmaller, with five and ſeven pinnas, or three-lobed, or three-leaved; leaflets ovate-lanceolate, with few gaſhes, and one or two teeth. Peduncles conjugate, branching. Stipules numerous, ſerrate. Petals lanceolate, white, marked with lines, burning[t]. Native South of France, Italy, the Griſons, &c. It flowers from july to october.

Cultivated 1597, by Gerarde[u].

13. Perennial. Leaves oppoſite; leaflets uſually five pairs, remote, linear, ſomewhat rigid, ſubſeſſile, even, undivided, but ſometimes bifid or trifid. Flowers as in the next ſpecies. Magnol and Ray determine it to be a variety of *C. Flammula*, but I, ſays Linneus, ſhould rather ſuppoſe it to be a variety of *C. recta*, changed by the ſoil[x].—Near Montpellier, Nice and Venice.

14. Perennial. Stems herbaceous, annual, round, ſcarcely branched, from three to five feet high, firm, ending in a panicle at top. Leaves oppoſite, pinnate; leaflets from two to four pairs, with an odd one at the end, petioled, lanceolate or ovate, acute, the upper ſurface ſmooth and green, the lower ſomewhat villoſe and glaucous; they are entire, ſeldom two-lobed. Stipules minute at the diviſions of the peduncles. Petals white, oblong, four in number, (ſometimes five) obtuſe, ſomewhat villoſe, a little longer than the ſtamens. Seeds few (from one to three or four, ſeldom more), dark brown, ſmooth, orbicular, much compreſſed; with a long, yellowiſh, plumoſe tail[y].

Linneus remarks, that the umbels of flowers are upright and ſtiff.]

The flowers come out in june, and the ſeeds ripen in ſeptember.

[Native of France, Switzerland, Sileſia, Auſtria, Carniola, Hungary, Tartary. Cultivated in 1597, by Gerarde[z].

β. The variety which Mr. Miller makes a ſpecies, under the name of *C. hiſpanica*,] differs only in having but two or three pairs of leaflets, which are narrower and ſtand farther aſunder; ſhorter ſtalks, and larger flowers.

[This plant, as well as moſt of the other ſpecies, is acrid, corroſive, and inflames the ſkin, whence the name *Flammula*. It is recommended by Baron Stoerck in inveterate ſyphilitic diſeaſes, in ulcers, cancers, and ſevere head-achs. It acts as a diuretic or diaphoretic. The character of *Clematis* reſts wholly on Stoerck's authority. He uſed an extract of the leaves; but he chiefly recommends an infuſion of the freſh leaves, two or three drams to a point of boiling water, four ounces to be taken three times a day, whilſt the powdered leaves are applied as an eſcharotic to the ulcers. It may be uſed alſo for raiſing bliſters, where cantharides cannot be obtained.

15. Perennial. Stems ſeveral, annual, a foot and half high or more, ſtriated, erect, a little fiſtuloſe, ſomewhat pubeſcent at top, terminated by a nodding flower, and ſometimes branched in the upper axils. Leaves oppoſite, ovate, ſeſſile, quite entire, nerved, veined, acute, ſmooth, except about the edge and on the dorſal nerves, which are ſlightly villoſe. Scopoli remarks, that the two upper leaves, before the corolla is unfolded, are erect, keeled, and touching each other reſemble an oblong bladder. Peduncles erect, pubeſcent, ſuſtaining one elegant flower, but void of ſcent: petals large, lanceolate, blue, nerved, acute, waved, thick, ſpreading very much. Filaments very pale yellow, villoſe all over, and twice as long as the petals. Seeds roundiſh, compreſſed, ſomewhat villoſe, ending in a long plumoſe tail[a].

Native of Germany, Auſtria, Carniola, Hungary, It flowers in july, or from june to auguſt; was cultivated in 1596 by Gerarde[b]; and is not uncommon now in the nurſeries about London.

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[k] Linn. amoen. and ſpec.
[l] Hort. kew.
[m] Thunberg.
[n] Hort. kew.
[o] Thunberg.
[p] Loureiro.
[q] Curtis.
[r] Gærtner.
[s] Curtis.
[t] Haller.
[u] Hort. kew.
[x] Lin. ſpec.
[y] Jacquin.
[z] Hort. kew.
[a] Jacquin.

Forſter (fl. auſtral. n. 231.) has given the ſame name to a very different plant from New Zealand, with ternate leaves, the leaflets ovate entire and mucronate, the peduncles axillary panicled two-leaved.

16. Stem ſmooth, ſtriated. Leaves ſeveral from each joint: leaflets ſmooth, lanceolate, narrow, with three or four deep ſerratures on the outſide, and a pair on the inner ſide; the lateral ones ſubſeſſile, the middle one petioled. Peduncles axillary, villoſe, one-flowered, with a ſmooth hemiſpherical involucre at the top. Petals oblong, an inch in length, obtuſe, villoſe on the outſide[c].

Native of Minorca. Introduced in 1783, by Monſ. Thouin. It flowers in february[d].]

17. This has ſtrong climbing ſtalks, which faſten themſelves by their claſpers to the neighbouring trees, whereby they are ſupported, and riſe to the height of twenty feet or more; at each joint are trifoliate leaves, heart-ſhaped, pointed, and entire. The flowers come out on long, naked, branching axillary peduncles; they are white, and collected into roundiſh bunches; theſe are ſucceeded by ſeeds ſhaped like thoſe of the common ſort, but have long curling beards to each, which are finely feathered.

It was ſent to Mr. Miller from Campeachy, by Dr. Houſtoun.

[18. Stems four-cornered, weak ſo as to want ſupport, ſcarcely climbing. Leaflets far remote, petioled. Peduncles oppoſite, axillary, three or five-flowered; the lateral pedicels have a pair of ſmall bractes far removed from the flower; the end one is naked. Flowers ſmall; petals linear-lanceolate, dark purple, the inner edge painted with a tomentoſe line. Tail of the ſeeds ſcarcely ſhorter than the anthers.

It was ſent from China by Bladh[e].

Loureiro has deſcribed a plant under the name of *C. ſinenſis*, which is common in many parts of the Chineſe empire, and ſeems to be different from Retzius's. The ſtems are round, very long, ſcandent and branched. Leaves quinate; leaflets ovate-lanceolate, quite entire, and ſubſeſſile, which Retzius's are not. Flower red purple, on many-flowered axillary peduncles: corolla ſpreading. Seeds three to five.—He adds, that he has found three plants in Chineſe books under this name: the firſt, which he has examined, with quinate leaves; the ſecond, with ternate; and the third, with ſimple three-lobed leaves: all having a large ſcandent ſtem.

19. This is a low unbranched plant. Stem pubeſcent. Leaves oppoſite, ſeſſile, ſtrongly-nerved. Flower ſingle, terminating, pale yellow.

Native of North America, where it was obſerved firſt by Baniſter. Cultivated in 1767, by Mr. James Gordon. It flowers in june and july[f].

20. Branches ſtriated, ſmooth. Leaves petioled, oppoſite: leaflets petioled, two inches long, the ſide ones oblique at the baſe, the upper ones ſometimes ſubcordate, three-nerved, ſmooth, veined beneath, the midrib ſlightly hairy: the upper ones ſimple, petioles ſcandent. Peduncles axillary and terminating, oppoſite, ſolitary, ſpreading very much, almoſt the length of the leaves. Pedicels alſo ſpreading, two inches long or more, having a ſmall leaf on each ſide at the baſe, and two minute ones in the middle of the ſide pedicels; the middle pedicel longer and naked. Corolla the ſize of that in *C. virginiana*: petals oblong, villoſe on both ſides. Seeds purple villoſe, with a long plumoſe tail. Native of the iſle of Bourbon[g].

Its proper place is between the ſixth and ſeventh ſpecies.

21. Stem ſuffruticoſe, round, ſlender, not very long, ſcandent, branched. Leaflets ſmall, bluntiſh at the end, quite entire, ſmooth; all the petioles long. Flowers white, axillary, ſeveral together. Petals oblong, ſtriated. Stamens about forty, unequal. Styles four, hairy, a little longer than the corolla.

Native of the ſuburbs of Canton in China[h].]

PROPAGATION AND CULTURE.

1. The firſt ſort retains its leaves all the year, which renders it valuable. This was formerly preſerved in green-houſes in the winter, ſuppoſing it too tender to live in the open air in England; but now it is generally planted in the full ground, where the plants thrive much better than in pots, and produce plenty of flowers, which they never did when they were more tenderly treated; nor have I found that the plants have ſuffered from ſevere froſts; for thoſe which have been growing in the open air at Chelſea, more than fifty years, have reſiſted the greateſt cold without covering.

This ſort does not produce ſeeds in England, it is therefore propagated by layers, and alſo from cuttings. If it be propagated by layers, it muſt be done in the beginning of october, when the ſhoots of the ſame year only ſhould be choſen for this purpoſe; for the older branches do not put out roots in leſs than two years; whereas the tender ſhoots will make good roots in one year: theſe muſt be pegged down. If the ſhoots have two inches of earth over them, it will be better than a greater depth; but, then, a little old tanners bark ſhould be ſpread over the ſurface of the ground, to keep out the froſt; for the plants generally begin flowering about Chriſtmas, and at the ſame time they are putting out roots, which being but juſt formed, may be injured by ſevere froſts: theſe layers will have ſtrong roots by the following autumn, when they may be taken from the old plant, and tranſplanted where they are deſigned to remain.

When it is propagated by cuttings, they ſhould be planted in march, in pots filled with good kitchen-garden earth, and plunged into a very moderate hot-bed, obſerving to ſhade them from the ſun in the day-time, and to water them gently two or three times a week, and in leſs than two months they will have taken root, when they ſhould be gradually inured to the open air. The following ſummer they may be placed in any part of the garden till Michaelmas, and then they ſhould be turned out of the pots and planted in the full ground, either where they are deſigned to remain, or into a nurſery-bed, to grow a year longer to get ſtrength, before they are placed out for good.

2. All the varieties of purple Virgin's Bower are propagated by laying down their branches; for although the ſingle flowers ſometimes produce ſeeds in England, yet as theſe ſeeds, when ſown, generally remain a whole year in the ground before they vegetate, the other, being the more expeditious method of increaſing theſe plants, is generally practiſed: but in order to ſucceed, theſe layers ſhould be laid down at a different ſeaſon from the former ſort; for when they are laid in the autumn, their ſhoots are become tough, ſo as rarely to put out roots under two years; and after lying ſo long in the ground, not one in three of them will have made good roots; ſo that many have ſuppoſed theſe plants were difficult to propagate, but ſince they have altered their ſeaſon of doing it, they have found theſe layers have ſucceeded as well as thoſe of other plants.

The beſt time for laying down the branches is in the beginning of july, ſoon after they have made their firſt ſhoots, for it is theſe young branches of the ſame year, which freely take root; but as theſe are very tender, there ſhould be great care taken not to break them in the operation: therefore thoſe branches from which theſe ſhoots were produced, ſhould be brought down to the ground, and faſtened to prevent their riſing; then the young ſhoots ſhould be laid into the earth, with their tops raiſed upright, three or four inches above ground; and after the layers are placed down, if the ſurface of the ground be covered with moſs, rotten tanners bark, or other decayed mulch, it will prevent the ground from drying, ſo that the layers will not require watering above three or four times, which ſhould not be at leſs than five or ſix days interval; for when theſe layers have too much wet, the tender ſhoots frequently rot; or when the young fibres are newly put out, they are ſo tender, as to periſh by having much wet: where the method here directed is practiſed, the layers will more certainly take root, than by any other yet practiſed.

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[b] Hort. kew. [c] Vahl. [d] Hort. kew. [e] Retz. [f] Hort. kew. [g] Vahl.

[h] Loureiro.

As moſt of theſe plants have climbing branches, they ſhould be always planted where they may be ſupported, otherwiſe the branches will fall to the ground and appear unſightly; ſo that unleſs they are properly diſpoſed, inſtead of being ornaments to a garden, they will become the reverſe. Where there are arbours or ſeats, with trellis work round them, theſe plants are very proper to train up againſt it; or where any walls or other fences require to be covered from the ſight, theſe plants are very proper for the purpoſe; but they are by no means proper for open borders, nor do they anſwer the expectation, when they are intermixed with ſhrubs; for unleſs their branches have room to extend, they will not be productive of many flowers.

The ſort with double flowers is the moſt beautiful, and that ſhould be preferred to thoſe with ſingle flowers, of which a few only ſhould be planted for variety. They are all equally hardy, and are ſeldom injured by froſt, excepting in very ſevere winters, when ſometimes the very tender ſhoots are killed: but if theſe are cut off in the ſpring, the ſtems will put out new ſhoots.

3, 4, 5. Are alſo very hardy plants, and having climbing branches, may be diſpoſed in the ſame manner as the other: they are alſo propagated by layers, which will ſucceed, if performed at the ſame time, and in the ſame manner as is directed for them.

10, 17. The ſorts which are natives of the warmeſt parts of America, will not thrive in this country, unleſs they are preſerved in ſtoves; but as theſe are great ramblers and plants of no great beauty, they are ſeldom preſerved in Europe, but in botanic gardens for the ſake of variety. Theſe may be propagated by layers, in the ſame manner as the other ſorts; or may be raiſed from ſeeds, obtained from the countries where they naturally grow; but theſe muſt be treated in the ſame manner as other exotic plants from the ſame country.

11. β. 12. Have no more beauty than the common ſort, and are ſeldom preſerved in gardens, unleſs for the ſake of variety. They are both as hardy as that, and may be propagated either by ſeeds or laying down their branches.

14, 14. β. 15. Have perennial roots, which multiply pretty faſt, but their ſtalks die down every autumn, and new ones ariſe in the ſpring, in which particular they differ from the other ſpecies, and therefore they require different management, and are propagated in a different manner.

Theſe plants are propagated either by ſeeds, or parting their roots; but the former being a tedious method (the plants ſeldom riſing until the ſecond year after ſowing, unleſs the ſeeds are ſown in the autumn ſoon after they are ripe, and are often two years more before they flower,) the latter is generally practiſed. The beſt ſeaſon for parting theſe roots is in october or february; either juſt before their branches decay, or before they riſe again in the ſpring.

They will grow almoſt in any ſoil or ſituation; but if the ſoil is very dry, they ſhould always be new planted in the autumn, otherwiſe their flowers will not be ſo ſtrong; but if the ſoil be wet, it is better to defer it until the ſpring. The roots may be cut through their crowns with a ſharp knife, obſerving to preſerve to every offſet ſome good buds or eyes; and then it matters not how ſmall you divide them, for their roots increaſe very faſt: but if you part them very ſmall, you ſhould let them remain three or four years before they are again removed, that their flowers may be ſtrong, and their roots multiplied in eyes, which in leſs time cannot be obtained.

Theſe plants are extremely hardy, enduring the cold of our ſevereſt winters in the open air, and are very proper ornaments for large gardens, either to be planted in large borders, or intermixed with other hardy flowers in quarters of flowering ſhrubs; where, by being placed promiſcuouſly in little open places, they fill up thoſe ſmall vacancies, and are agreeable enough. They begin to flower about the beginning of june, and often continue to produce freſh flowers until auguſt, which renders them valuable, eſpecially ſince they require very little care in their culture; for their roots may be ſuffered to remain ſeveral years undiſturbed, where there is no want to part them, which will not in the leaſt prejudice them.

[CLEMATIS. See *Atragene, Baniſteria, Bauhinia, Bignonia, Ciſſampelos, Ophioxylum, Paſſiflora, Paullinia, Plumeria, Strychnos, Vinca.*

CLEMATITIS. See *Ariſtolochia, Bauhinia, Clematis, Eupatorium.*]

CLEOME. (*From* κλείω, *claudo, to cloſe or ſhut up. Linneus adopted the name from Theod. Priſcianus, called alſo Octavius or Octavianus Horatius, who lived at the end of the fourth century. A medical work of his was publiſhed in* 1532 *and* 1547.)

Lin. gen. n. 826. *Reich.* 890. *Schreb.* 1099. *Gærtn. t.* 76. *Juſſ.* 243. Sinapiſtrum. *Tournef.* 116.

Claſſ. 15. 2. Tetradynamia Siliquoſa.

Nat. order of *Putamineæ. Capparides* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* four-leaved, very ſmall, ſpreading; the lower leaflet gaping more than the reſt: deciduous.

COR. four-petalled: all the petals aſcending, ſpreading; the neareſt intermediate ones ſmaller than the others.

Nectareous glands three, roundiſh, one at each diviſion, except one at the calyx.

STAM. *Filaments* ſix (ſometimes twelve or twenty-four) ſubulate, declining. *Anthers* lateral, aſcending.

PIST. *Style* ſimple. *Germ* oblong, declining, the length of the ſtamens. *Stigmas* thickiſh, riſing.

PER. *Silique* long, cylindric, placed on the ſtyle, one-celled, two-valved.

SEEDS very many, roundiſh.

OBS. *In ſome ſorts the germ is pedicelled, and the ſtamens ſit on a pedicel next the germ, as in the claſs* Gynandria. *Others have more ſtamens than ſix.*

ESSENTIAL CHARACTER.

Nectareous glands three, at each ſinus of the calyx, except the loweſt. *Petals* all aſcending. *Silique* one-celled, two-valved.

SPECIES.

[1. Cleome fruticoſa. *Shrubby Cleome.*
Lin. ſpec. 937. *Reich.* 3. 291. *Burm. ind. t.* 46. *f.* 3.
Stroemia tetrandra. *Vahl. ſymb.* 1. 20.
Flowers gynandrous four-ſtamened; leaves ſimple; ſtem ſhrubby.]

2. Cleome heptaphylla. *Seven-leaved Cleome.*
Lin. ſpec. 937. *ſyſt.* 604. *Reich.* 3. 291. *Swartz obſ.* 252.
C. Erucago. *Mill. dict. n.* 6.
Sinapiſtrum. *Burm. zeyl.* 215. 3. *Herm. lugdb.* 564. *Sloan. jam.* 1. 194. 4.
Pentaphyllum. *Mor. hiſt.* 2. 288. 2.
β. Sinap. indicum majus quinquefolium aſperum. *Raii ſuppl.* 418. 4.
Flowers gynandrous; leaves with about ſeven leaflets; ſtem prickly.

3. Cleome pentaphylla. *Five-leaved Cleome.*
Lin. ſpec. 938. *Reich.* 3. 291. *hort. cliff.* 341. 1. *upſ.* 193. *fl. zeyl.* 239. *Jacqu. hort.* 1. *t.* 24. *Lour. cochinch.* 397.
Sinapiſtrum. *Herm. lugdb.* 564. *Sloan. jam.* 1. 294. 5.
Pentaphyllum.

Pentaphyllum. *Mor.* 2. 288. 1. *Park. theat.* 396. *n.* 3. 397. *f.* 3. *Raii hiſt.* 859. 2.
Quinquefolium lupini folio. *Bauh. pin.* 326.
Cara-veela. *Rheed. mal.* 9. 43. *t.* 24. *Raii ſuppl.* 420.
Flowers gynandrous; leaves quinate; ſtem unarmed.

4. Cleome triphylla. *Three-leaved Cleome.*
Lin. ſpec. 938. *Reich.* 3. 292.
Sinapiſtrum. *Herm. lugdb.* 564. *t.* 565. *Raii ſuppl.* 419. *n.* 1.
Flowers gynandrous; leaves ternate; ſtem unarmed.

[5. Cleome juncea. *Ruſhy Cleome.*
Lin. ſyſt. 605. *ſuppl.* 300. *Sparrm. in act. upſ. nov.* 3. 192.
Leafleſs; flowers gynandrous, eight-ſtamened, corymbs lateral; genitals elongated, ſilique linear tomentoſe; ſtem ſhrubby.

6. Cleome polygama.
Lin. ſpec. 939. *Reich.* 3. 292. *Brown. jam.* 273.
Sinapiſtrum. *Sloan. jam.* 1. 194. 6. *t.* 124. *f.* 1.
Upper flowers four-ſtamened male; leaves ternate, leaflets ſeſſile ſomewhat prickly on the edge.

7. Cleome Chelidonii.
Lin. ſyſt. 605. *ſuppl.* 300.
Flowers many-ſtamened; leaflets in fives or ſevens wedge-form rugged; racemes terminating; ſiliques filiform.

8. Cleome felina.
Lin. ſyſt. 605. *ſuppl.* 300.
Flowers many-ſtamened, axillary, ſolitary, peduncled; leaves ternate wedge-form ſtrigoſe; ſiliques linear compreſſed.

9. Cleome icoſandra.
Lin. ſpec. 938. *Reich.* 3. 292. *fl. zeyl. n.* 240. *Lour. cochinch.* 398.
Sinapiſtrum. *Burm. zeyl.* 215. *t.* 99.
Laganſa. *Rumph. amb.* 5. *t.* 96. *f.* 3.
Flowers icoſi-tetrandrous; leaves quinate.]

10. Cleome viſcoſa. *Viſcid Cleome.*
Lin. ſpec. 938. *Reich.* 3. 293. *mant.* 430. *fl. zeyl. n.* 241. *Willich. obſ.* 114. *p.* 65.
Sinapiſtrum. *Mart. cent.* 25.
Aria-veela. *Rheed. mal.* 9. 41. *t.* 23.
Flowers twelve-ſtamened; leaves quinate and ternate.

[11. Cleome dodecandra. *Twelve-ſtamened Cleome.*
Lin. ſpec. 939. *ſyſt.* 605. *Reich.* 3. 293. *fl. zeyl. n.* 242.
Sinapiſtrum. *Burm. zeyl.* 216. *t.* 100. *f.* 1.
Flowers twelve-ſtamened; leaves ternate.

12. Cleome gigantea. *Gigantic Cleome.*
Lin. ſyſt. 605. *Reich.* 3. 293. *mant.* 430. *Jacqu. obſ.* 4. 1. *t.* 76.
Flowers ſix-ſtamened; leaves in ſevens; ſtem unarmed.

13. Cleome aculeata. *Prickly Cleome.*
Lin. ſyſt. 605. *Reich.* 3. 294.
Flowers ſix-ſtamened; leaves ternate quite entire; ſtipules ſpineſcent.]

14. Cleome ſpinoſa. *Thorny Cleome.*
Lin. ſpec. 939. *Reich.* 3. 294. *Jacqu. amer.* 190. 3. *pict.* 93. *Swartz obſ.* 252. *Brown. jam.* 273. *n.* 1.
Tareriaya. *Marcgr. braſ.* 33. *t.* 34.
Flowers ſix-ſtamened; leaves in ſevens and fives; ſtem thorny.

[15. Cleome ſerrata. *Serrate-leaved Cleome.*
Lin. ſpec. 939. *Reich.* 3. 294. *Jacqu. amer.* 190. *t.* 180. *f.* 43. (a leaf only.)
Flowers ſix-ſtamened; leaves ternate, leaflets linear-lanceolate ſerrate.]

16. Cleome ornithopodioides. *Bird's-foot Cleome.*
Lin. ſpec. 940. *Reich.* 3. 294. *hort. cliff.* 341. 4. *upſ.* 194.
Sinapiſtrum. *Tourn. cor.* 17. *Dill. elth.* 359. *t.* 266. *f.* 345. *Buxb. cent.* 1. 6. *t.* 9. *f.* 24.
Flowers ſix-ſtamened; leaves ternate, leaflets oval-lanceolate.

[17. Cleome violacea. *Violet-coloured Cleome.*
Lin. ſpec. 940. *ſyſt.* 605. *Reich.* 3. 295. *hort. cliff.* 341. 3. *Gærtn. fruct.* 1. 368. *t.* 76. *f.* 6. *Riv. tetr. t.* 75. *f.* 2. (Sinapiſtrum.)
Trifolium ſiliquoſum, fl. violaceo luſitanicum. *Barr. ic.* 866.
β. Sinapiſtrum peregrinum alterum, fl. luteo. *Barr. ic.* 865.
Flowers ſix-ſtamened; leaves ternate and ſolitary, leaflets lanceolate-linear quite entire.

18. Cleome arabica.
Lin. ſyſt. 606. *Reich.* 3. 295. *dec.* 3. *t.* 8.
Sinapiſtrum. *Shaw. afr. f.* 557.
Flowers ſix-ſtamened; leaves ternate lanceolate obtuſe; ſiliques fuſiform viſcid-ſcabrous.]

19. Cleome monophylla.
Lin. ſpec. 940. *Reich.* 3. 295. *fl. zeyl. n.* 243.
Sinapiſtrum. *Burm. zeyl.* 217. *t.* 100. *f.* 2.
Tsjeru-veela. *Rheed. mal.* 9. 63. *t.* 34.
Flowers ſix-ſtamened; leaves ſimple ovate-lanceolate petioled.

[20. Cleome capenſis.
Lin. ſpec. 940. *Reich.* 3. 296.
C. juncea. *Berg. cap.* 104.
Flowers ſix-ſtamened; leaves ſimple ſeſſile linear-lanceolate; ſtem angular.

21. Cleome procumbens.
Lin. ſyſt. 606. *Reich.* 3. 296. *Jacqu. amer.* 189. *t.* 120. *ed.* 2. *pict.* 93. *t.* 181. *Brown. jam.* 273. *n.* 2. *Swartz obſ.* 253. *Sloan. jam.* 1. *t.* 123. (Leucoium.)
Flowers ſix-ſtamened; leaves ſimple lanceolate petioled; ſtems procumbent.

22. Cleome tenella.
Lin. ſyſt. 606. *ſuppl.* 300. *Retz. obſ.* 4. 28. *n.* 91.
Sinapiſtrum. *Pluk. phyt. t.* 224. *f.* 3.
Flowers ſix-ſtamened; leaves ternate filiform linear.

23. Cleome filifolia.
Vahl ſymb. 1. 48. *Forſk. ægypt.* 120. *n.* 71.
Flowers ſix-ſtamened, leaves lower ſeptenate, upper ternate.

DESCRIPTIONS, &c.

1. Stem fruteſcent, round, branching. Leaves oval-oblong, quite entire, ſmooth, petioled, alternate. Racemes terminating, ſimple. Calyxes four-leaved, ſpreading, ovate-lanceolate. Petals roundiſh, with oblong claws. Germ on a very long pedicel, in the middle of which are four ſtamens, the two lower frequently united at the baſe. Anthers oval. Silique oblong.—Native of India[a].

2. Stem herbaceous, from three to five feet high, branched, upright, angular-grooved: branches ſubdivided, ſpreading, grooved, hirſute, viſcid, prickly. Leaves alternate, ſcattered, ſpreading, digitate: leaflets lanceolate, acuminate, nerved, patulous, pubeſcent: petiolules in the centre, ſhort, round, hirſute: the outer leaflets largeſt and gradually ſmaller to the inmoſt: common petioles longer, erect, round, ſtriated, hirſute, viſcid. Prickles in pairs, oppoſite, thick, ſhort, at the baſe of the petioles. Flowers terminating in long looſe ſpikes. Bractes cordate-roundiſh (creſcent-ſhaped, *Linn. ſyſt.*) ſeſſile, entire, pubeſcent, white, ſeparating the flowers. Peduncles longiſh (two inches long, *Miller*) round, pubeſcent. Leaflets of the calyx linear-lanceolate, acute, patulous, convex, pubeſcent, two of them a little longer. Petals with claws, reflex, erect, contiguous, oblong, concave, entire, white: (Miller ſays, large and fleſh-coloured.) Filaments ſix, longer than the corolla, bent down, patulous, red-purple: anthers long, erect, linear, brown. Germ pedicelled, linear, quadrangular, green; without any ſtyle: ſtigma obtuſe, black[b].] Silique or pod thick, tapering, five inches long, hanging down. It is an annual plant, and was ſent to Mr. Miller by Dr. Houſtoun from Jamaica; where he found it growing in great plenty. [It muſt have been cultivated therefore by Mr. Miller before 1748. It flowers in june and july, and is ſuppoſed to be a native alſo of the Eaſt Indies. Mr. Miller adds Egypt.

3. This is an annual, elegant but fetid plant, upright, either wholly ſmooth or with a few hairs at bottom; the ſtem round and branching. Leaves on the ſtem and branches all quinate; the leaflets obo-

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[a] Linn. ſpec.
[b] Swartz.

vate, acute, very finely ſerrate: floral leaves ternate, obovate, obtuſe, quite entire; the loweſt on ſhort petioles, the reſt ſeſſile. Raceme (or ſpike) of flowers very long, formed by ſolitary, ſpreading, one-flowered peduncles iſſuing from ſome of the axils. Leaflets of the calyx lanceolate. Petals white or fleſh-coloured. The germ is placed on a long ſlender purple pedicel, round which are ſix ſtamens, concolor and equal. Silique rough with rigid, blunt, very ſhort hairs, and appearing to be dotted[c].

According to Loureiro, the ſtem is unarmed, ſimple, two feet high, of a duſky red colour, with diffuſed branches. The common petiole long. Leaflets oval, tomentoſe, ſeſſile, the uppermoſt larger than the reſt. Leaflets of the calyx oblong, erect. Petals rounded, unequal, with long, filiform claws. Anthers oblong, erect. Style none. Stigma lenticular, retuſe. Silique three inches long, ſubulate-cylindric, wrinkled. Seeds kidney-form, wrinkled, in ſix rows. He refers to t. 96 f. 2. of Rumphius; and p. 216. 1. Burm. zeyl.

Native of both Indies, Cochinchina, *&c.*] Mr. Miller ſays, that it grows naturally in Aſia, Africa, and America; that he received the ſeeds from Aleppo, the coaſt of Guinea, and in the earth which came from the Weſt Indies with other plants.

[It was cultivated in 1640 by Parkinſon; and flowers in june and july[d]]

4. This is an annual plant which riſes two feet high, ſending out many ſide branches, with leaves, having one large ſpear-ſhaped lobe in the middle, and two very ſmall ones on the ſide; theſe ſit cloſe to the branches. The flowers come out ſingly from the ſide of the branches, upon long peduncles: they have four large fleſh-coloured petals, and ſix ſtamens, which ſtand out beyond the petals; when the flowers fade, the germ which ſits upon the ſtyle becomes a taper pod four inches long.

[That this and the two foregoing, ſays Linneus, were originally the offspring of the ſame plant, is evident, from the floral leaves in all being ſeſſile; from the flowers being gynandrous and having ſix ſtamens; the petals aſcending; the ſiliques pedicelled; and their habit the ſame: they are therefore hardly diſtinct ſpecies.]

It was ſent to Mr. Miller from Jamaica, by Dr. Houſtoun, in the year 1730.

5. Stem from a foot to two feet in height, hardly the thickneſs of a gooſe-quill. Branches rigid like ſpines, commonly ending ſharply, greeniſh, round, ſpreading, ſmoothiſh. Leaves ſcarcely any, but rather minute ſcales coming out here and there on the ſtem and branches. Flowers in a corymb; common peduncle very ſhort; partial peduncles filiform, from half an inch to an inch in length, round, ſomewhat woolly, yellowiſh. Leaflets of the calyx ſpreading a little, ſuborbiculate, concave, a quarter of an inch in length, and almoſt equal; the two outer ones however are a little larger: they are all of a dirty yellow, ſmooth within, but ſomewhat rugged on the outſide with crowded glands: there are alſo ſome pedicelled glands at the periphery of the leaves. Corolla none, unleſs the calyx be rather regarded as ſuch. Nectary ſhort, tubular, two-lipped, faſtened by the ſide to the baſe of the piſtil: upper lip very ſhort, ſubgaleate, ſometimes entire, ſometimes toothed; lower lip more prominent, aſcending, either ſharpiſh and entire, or truncate-toothed: there is a depreſſion or channel in the tube on the outſide and at top. Piſtil permanent, lengthened out to an inch and half, the whole tubular, a third part of it at top ſtaminiferous. Stigma oblong. Filaments half an inch long, in a whorl on the ſtyle. Anthers from erect incumbent. Seeds blackiſh, orbiculate, ſomewhat compreſſed, in a double row, and each as it were in its proper cell.

Native of the Cape of Good Hope, and found there near the Black river by Andr. Sparrman, M. D.[e]

6. Stem erect, ſomewhat gloſſy, and a little branched. Leaves on long petioles; leaflets ovate-lanceolate. Racemes long; the loweſt flower fertile, the others minute, male. Silique ſeſſile within the calyx[f].

It is ſimple, and ſeldom riſes above twenty or twenty-five inches.—Native of Jamaica, in moiſt bottoms[g].

7. Leaves on long petioles, digitate. Calyx three or five-parted, ſtrigoſe. Corolla red, ſhaped like that of *Chelidonium hybridum.* Stamens yellow. Silique filiform, very ſmooth. Seeds hiſpid.—This ſpecies has certainly a great affinity to *Chelidonium,* were it not for the digitate leaves, more than two leaves to the calyx, and five petals to the corolla.

König found it near Tanſchaur, in the Eaſt Indies[h].

8. The whole herb, together with the calyx, is ſtrigoſe. Leaves ſubretuſe. Corolla angular, ſmall, red. Siliques ſhort, ſmooth.—This ſmall plant is ſingular with its hiſpid leaves; the hairs very much dilated at the baſe, very ſtiff, preſſed cloſe to the leaves, pointing towards the extremity; ſo as exactly to reſemble a cat's tongue.—Found in Ceylon, by König[i].

9. Stem herbaceous, annual, two feet high, erect, round, unarmed, ſtriated, viſcid-hairy: branches aſcending. Petiole long. Leaflets ovate-lanceolate, rough, ſeſſile, quite entire. Flowers axillary, ſolitary. All the parts, except the petals and ſtamens, have viſcid teats on them. Calyx bell-ſhaped, with lanceolate leaflets. Corolla bell-ſhaped; petals ovate-oblong, almoſt equal, longer than the calyx. Filaments eighteen to twenty-two (or twenty-four), ſhort, equal, placed on a flattiſh receptacle: anthers ſubulate, recurved. Style thick, ſhort: ſtigma obtuſe. Silique ſubulate, ſlender, obliquely ſtriated. Seeds kidney-ſhaped.

Native of the Eaſt Indies and Cochinchina.

This and *C. pentaphylla* have not the ſtamens as in the claſs Tetradynamia, they have not the nectareous glands, nor are the petals aſcending[k].

10. Stem erect, a foot high, ſimple, round, ſtriated, villoſe, viſcid, (often red). Leaves alternate, viſcid, villoſe; petiole an inch long; leaflets unequal, ſubrhomboid, quite entire, nerved underneath. Flowers axillary, peduncled, at the top of the plant. Leaflets of the calyx erect at bottom, ſpreading a little at top, lanceolate, equal, all gaping regularly. Petals yellow, lanceolate-ovate, from erect ſpreading and ſometimes revolute, equal, two more diſtant than the others. Stamens eight or nine to thirteen, from the receptacle not from the germ, unequal. Silique two or three inches long, ſtriated, villoſe. Seeds ſmall, compreſſed, with a netted ſurface[l].

The leaves are all quinate, except the uppermoſt, which are ternate; both theſe and the flowers are ſmaller than in the foregoing ſpecies. The lower petals are more divaricated. It has from ten to fifteen ſtamens[m]. Burman ſuppoſed this not to be ſpecifically diſtinct from *C. icoſandra.*] It is an annual plant, native of the iſland of Ceylon, whence the ſeeds were brought to Holland, and ſent to Mr. Miller by Boerhaave, in 1739.

[11. Stem and ſiliques viſcid-pubeſcent. Leaflets elliptic, even, the middle one largeſt. Upper flowers uſually male. Calyx purpliſh. Petals white, emarginate. Stamens ten to fourteen. Siliques ſeſſile, erect, fuſiform, ſomewhat inflated[n].—Native of both Indies. Annual.

12. Stem two and even four yards in height, round, pubeſcent, erect, evergreen. Branches few, irregular, with ſcars. Leaves alternate, petioled; leaflets lanceolate, quite entire, pubeſcent, on the upper ſurface ſilky. Petioles longer than the leaves. Racemes terminating, erect, ſtiff, two feet in length. Pedicels remote, ſtanding out, glu-

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[c] Jacquin. [d] Hort. kew. [e] Sparrman.

[f] Linn. ſpec. [g] Browne. [h] Linn. ſuppl.
[i] Ibid. [k] Loureiro. [l] Willich. [m] Linn. mant.
[n] Linn. ſyſt.

tinous, longer than the flower, without bractes. Leaflets of the calyx linear, at bottom rather erect but ſpreading above. Petals oblong, wrinkled, green, cloſely cohering, except in front on account of the genitals: claws diſtinct, the length of the petal. Filaments equal, inſerted into the receptacle, longer than the petal: anthers erect, oblong, yellowiſh. Germ ſtipitate, ſtipe the length of the ſtamens: ſtigma ſeſſile, obtuſe. Receptacle of the fructification globular, exuding nectar into the claws of the petals.—This beautiful plant has a very burning taſte and ſtinking ſmell[o].

Native of South America. Introduced 1774 by Dr. Fothergill[p].

13. Stem herbaceous. Stipules in pairs, very ſhort, recurved. Leaflets elliptic-lanceolate, on long petioles. Floral leaves, at the baſe of the peduncle, ſimple. Flowers ſolitary, peduncled, ſmall. Siliques columnar.—Obſerved in America, by Zoega[q].

14. Root annual. Stem herbaceous, a fathom high, upright, branched, hirſute, round, with prickles at the baſe of the branchlets. Branches ſubdivided, upright, angular, hirſute, prickly at the petioles. Prickles oppoſite, ſtrong, ſhort. Leaves petioled, digitate, alternate. Leaflets ſeven, (five or three), lanceolate, entire, nerved, ſlightly wrinkled, pubeſcent and ſomewhat viſcid. Petioles long, round. Spikes a foot in length, with a coma at the top. Bractes cordate, ſeſſile, obtuſe, ſcattered, approximating, nerved, pubeſcent. Flowers large, white, on ſolitary one-flowered peduncles, longer than the bractes. Leaflets of the calyx lanceolate-linear, concave. Petals oblong, entire, with elongated claws, and a roundiſh gland at the baſe of each. Filaments ſix, unequally inſerted into the receptacle, almoſt of the ſame length, ſpreading, filiform, three times the length of the corolla, purple. Anthers erect, long, two-celled, yellow. Germ pedicelled, round, curved. Style none. Stigma obtuſe. Silique three or four inches long, round, toruloſe, ſomewhat hirſute, viſcid. Seeds oblong[r].

According to Linneus, the branches are divaricate. Leaves ſmoothiſh. Stipules in pairs, permanent and hardening into thorns. Stamens longer than the flower, but not gynandrous.—Native of the Weſt Indies.] Sent to Mr. Miller from the Havannah, in the year 1731, by Dr. Houſtoun.

15. This is an annual upright plant, two feet in height. Racemes looſe, ſimple, terminating. Corolla white. Stamens tetradynamous. Silique round, three inches long.—Native of Carthagena in South America, in moiſt woods[s].

16. Stem round, ſtraight, from a foot to two feet in height, pale green, with ſhort ſtiffiſh rough hairs. Leaves ſtrong-ſmelling, on a rough petiole half an inch in length; leaflets commonly bent back, of a pale glaucous hue on both ſides, ſmooth in appearance, but roughiſh to the touch, having numerous ſhort hairs along the edge; ſcarcely perceptible except in the younger leaves: from the axils of theſe there are other ſmaller ones. From the upper axils come out ſingly ſmall yellow flowers, on ſlender peduncles ſpreading horizontally. Stamens ſix, bent in: anthers ſmall, ſaffron-coloured. Silique ſubhirſute, appearing jointed when ripe, like the legume of *Ornithopus*, whence the trivial name[t].

It is an annual plant, flowering in june and july; a native of the Levant, and was cultivated in 1732, by James Sherard, M. D.[u]

17. This is a viſcid and pubeſcent plant. The leaflets nearly equal. The floral leaves ſimple. The peduncles even. The calyx yellow with purpliſh tips. The two upper petals dark purple with yellow dots; the two lateral cordate, unguiculate, crenate, concolor. Anthers purpliſh. Receptacle above the ſtamens with three yellow globular glands. Stamens and piſtil declining[x].

Gærtner calls the ſeed-veſſel a ſiliquoſe capſule, ſubpedicelled, oblong, obtuſe, compreſſed like a lens, villoſe. Seeds twelve or more, ſubgloboſe, with a little pit on each ſide, acuminate towards the navel, ſmooth, of a ruſty red colour.

Native of Portugal. Annual. Flowering in june and july. Introduced 1776, by M. Thouin[y].

18. This is an annual viſcid and ſcabrous plant, two feet high. Petioles the length of the leaves. Leaflets ſeſſile, ſcabrous underneath. Floral leaves ſimple. Petals yellow, with purple tips. Siliques nodding, ſubdiaphanous. Seeds hirſute[z]. Native of Arabia.]

19. This is an annual plant, with an herbaceous ſtalk a foot and half high. Leaves long, narrow, alternate. Peduncles axillary, ſolitary, one-flowered. Corolla yellow. Silique ſlender, taper.

[Stem erect, viſcid-hairy. Stamens long, very ſlender. Siliques linear, not jointed[a].

20. Stem ſimple, ſtiff and upright, reſembling that of *Epilobium*. Leaves like thoſe of *Broom*, ſtiff, ſtraight and ſmooth. Flowers corymbed, as in *Epilobium*[b].

It is thus deſcribed by Bergius, if his plant be the ſame with Linneus's.—Stem herbaceous, erect, round, ſtriated, ſmooth, more than a foot high: branches alternate, ſimple, long, upright. Leaves alternate, linear, obtuſe, fleſhy. Flowers in thin racemes, on alternate, one-flowered pedicels. Leaflets of the calyx ovate, ſharpiſh, equal, permanent. Petals wedge-ſhaped, blunt, narrowed gradually downwards, upright, equal, ſeveral times longer than the calyx, purple-fleſh-coloured, with linear, ſhort, yellowiſh claws. Seed-veſſel a cordate capſule, two-celled, two-valved. Native of India and the Cape of Good Hope.

21. Stem herbaceous, ſix inches high, ſuffruteſcent, branched, ſmooth: branches ſomewhat erect, ſubdivided, ſmooth. Leaves alternate, ſmall, acute, ſmooth. Flowers axillary, peduncled, ſolitary. Peduncles longer than the petioles, one-flowered, purple. Corolla yellow, turning to orange or red. Leaflets of the calyx lanceolate, acute. Petals oblong, patulous, entire, with claws. Filaments equal, the length of the petals: anthers blackiſh, ovate, revolute, two-celled. Germ ſubpedicelled, acuminate, compreſſed: ſtyle ſubulate, thick: ſtigma obtuſe ſimple. Silique pedicelled, erect, ſubtoruloſe. Seeds echinate, black.——Native of Jamaica and Hiſpaniola, in dry ſand; flowering in november[c].

22. A plant of a ſpan in height, branching, erect. Leaflets ſeſſile, the length of the petals. Siliques linear[d]. Retzius adds, that the leaflets are longer than the petioles; the end one longer than thoſe on the ſide. Pedicels ſolitary, in the ripe ſilique equalling the petioles in length. Corolla yellow.——Found by König abundantly in dry ſandy ſoil, in the Eaſt Indies. It is an annual plant, as moſt of the others are.

23. Stem erect, weak, herbaceous, a foot high, branched, ſtriated, towards the top dotted with raiſed, minute, ſcattered dots. Petioles ſhorter than the leaves. Siliques a finger's length pedicelled, a little bent in at the top and narrower. It agrees with *C. tenella* in the form of the leaves, but differs in their number, in the height and weakneſs of the ſtem, in the ſilique being pedicelled, drawn to a point at the end and pendulous, and the ſtem being dotted[e].]

PROPAGATION AND CULTURE.

Moſt of theſe plants are natives of very warm countries, and will not thrive in England without artificial heat; therefore their ſeeds muſt be ſown upon a good hot-bed in the ſpring, and when the plants are fit to remove, they ſhould be planted in ſeparate ſmall pots, filled with freſh light earth, and plunged into a freſh hot-bed, obſerving to ſhade them until they have taken freſh root; after which they ſhould have air admitted to them every day in proportion to the warmth of the ſeaſon, and their waterings ſhould be frequently repeated, but not given in too great plenty; when the plants have filled theſe ſmall pots with their roots, they ſhould be put into larger, and plunged again into a hot-bed to bring them forward; and in july, when they are too tall to remain longer in the hot-bed, they ſhould be removed into an airy glaſs-caſe, where they may be ſcreened from cold and wet, but in warm weather may enjoy the free air. With this management the plants will flower ſoon after, and perfect their ſeeds in autumn.

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[o] Linn. mant.
[p] Hort. kew.
[q] Linn.
[r] Swartz.
[s] Jacquin.
[t] Dillenius.
[u] Hort. kew.
[x] Linn. ſyſt.
[y] Hort. kew.
[z] Linn. ſyſt.
[a] Linn. zeyl.
[b] Linn. ſpec.
[c] Swartz.
[d] Linn. ſuppl.
[e] Vahl.

6. If the ſeeds of this are ſown in autumn the plants will flower in june, and their ſeeds will ripen in auguſt, but thoſe which are ſown in the ſpring do not flower till july; ſo that unleſs the ſeaſon proves favourable the ſeeds will not ripen: if the ſeeds of this ſort are permitted to ſcatter, the plants will come up without care, and require only to be thinned and kept clean from weeds, for they will not bear tranſplanting.

CLEONIA. (*Probably adopted by Linneus* (*gen. edit.* 6.) *from* Cleonicium *of Pliny, and* Κλεωνικιον *of Dioſcorides.*)

Lin. gen. n. 736. *Reich.* 794. *Schreb.* 991. *Gærtn. t.* 66. Brunella. *Lamarck & Juſſ.*

Claſſ. 14. 1. Didynamia Gymnoſpermia.
Nat. order of *Verticillatæ. Labiatæ* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, tubular, angular, two-lipped: *upper lip* flattiſh, broad, three-toothed—*lower* two-parted, ſhort.

Cor. one-petalled, ringent. *Upper lip* ſtraight, bifid, keeled—*lower* trifid; the middle ſegment two-lobed, the ſide ones ſpreading.

Stam. *Filaments* four, forked at the end; the two lower longeſt. *Anthers* ſitting on the outer apex of the filaments, croſſed in pairs.

Pist. *Germ* four-parted. *Style* filiform, the length of the ſtamens. *Stigmas* four, ſetaceous, equal.

Per. none. *Calyx* cloſed with hairs.

Seeds four, nearly columnar, ſmooth.

Obs. *This genus differs from all others of this order in having four ſtigmas.* (*Stigma quadrifid.* Gærtn.)

ESSENTIAL CHARACTER.

Filam. forked, with an anther at one of the tips. *Stigma* four-cleft.

SPECIES.

1. Cleonia luſitanica. *Sweet-ſcented Cleonia.*
Lin. ſpec. 837. *ſyſt.* 548. *Reich.* 3. 102. *mant.* 414. *Loefl. itin.* 148. *Mill. fig. t.* 70. *f.* 1. *Barr. ic.* 561. *Mor. hiſt.* 3. 363. (Prunella) & 391. *ſ.* 11. *t.* 5. *f.* 4. *Corn. canad.* 46. *t.* 47. (Bugula). *Gærtn. fruct.* 1. 318. *t.* 66. *f.* 7.

DESCRIPTION, &c.

[Stem erect, brachiate, in the lower part hairy. Upper lip of the corolla erect, the ſegments reflected at the end; lower obcordate, complicate-ſpreading, gibbous on the upper ſide of the baſe. All the filaments thorny. Anthers creſted at the back[a]. Seeds roundiſh, turgidly lens-ſhaped, mucronate at the baſe, rufeſcent, with a white navel ſhaped like the letter y, lodged in the ventricoſe, ſtriated calyx, cloſed at the mouth with a white nap[b]. It differs little from Prunella except in its four-cleft ſtigma, and laciniate bractes[c].]

It is an annual plant, native of Spain and Portugal. [Cultivated by Mr. Miller, in 1756.]

PROPAGATION AND CULTURE.

Sow the ſeeds in the autumn, and the plants will come up the following ſpring. When they are fit to tranſplant, they may be removed to a border, where they will flower and produce ſeeds. They do not take much room, and they require little culture. Seeds ſown in the ſpring frequently lie a whole year before they vegetate.

[CLERODENDRUM. [From κλῆρος, lot, chance or fortune, and δένδρον, a tree. *Fortunate Tree.*)

Lin. gen. n. 789. *Reich.* 852. *Schreb.* 1057. *Gærtn. t.* 57. *Juſſ.* 106. *Burm. zeyl. t.* 29. *p.* 67.

Claſſ. 14. 2. Didynamia Angioſpermia.
Nat. order of *Perſonatæ. Vitices* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, five-parted, bell-ſhaped: ſegments ovate-acute, broader than the tube of the corolla, permanent.

Cor. one-petalled, irregular: *tube* ſlender, long: *border* (funnel-form, *Gærtn.*) five-parted, equal; the upper ſegments more deeply ſeparated.

Stam. *Filaments* four, filiform, much longer than the corolla, aſcending through the upper fiſſure of the corolla, two of them ſhorter. *Anthers* ſimple.

Pist. *Germ* roundiſh. *Style* form, length and ſituation of the ſtamens. *Stigma* ſimple, (bifid).

Per. *Drupe* (*Berry*) roundiſh, placed on a large calyx. (*Berry* one-celled, four-ſeeded, often ſplitting into four parts.)

Seed one, roundiſh. (Seed one in each ſtone, which is one-celled, convex and wrinkled on one ſide, angular and ſmooth on the other: the ſeed is of the ſame ſhape, *G.*)

ESSENTIAL CHARACTER.

Cal. five-cleft, bell-ſhaped. *Cor.* with a filiform tube, and a funnel-ſhaped, five-parted, equal border. *Stam.* very long, gaping very much between the ſegments. *Berry* one-ſeeded. (One-celled, four-ſeeded, often ſplitting into four parts when ripe, *G.*)

SPECIES.

1. Clerodendrum infortunatum.
Lin. ſpec. 889. *Reich.* 3. 197. *fl. zeyl. n.* 232. *Burm. ind.* 137. *Gærtn. fruct.* 271. *t.* 57. *Lour. cochinch.* 387.
Petaſites agreſtis. *Rumph. amb.* 4. 108. *t.* 49.
Peragu. *Rheed. mal.* 2. 41. *t.* 25. *Raii hiſt.* 1571.
β. C. fol. lato & acuminato. *Burm. zeyl.* 66. *t.* 29.
Leaves cordate tomentoſe.

2. Clerodendrum fortunatum. *Entire-leaved Clerod.*
Lin. ſpec. 889. *Reich.* 3. 198. *amæn.* 4. 320. *Oſb. itin.* 228. *t.* 11. *Burm. ind.* 137.
Leaves lanceolate quite entire.

3. Clerodendrum Phlomidis.
Lin. ſyſt. 578. *ſuppl.* 292. *Vahl ſymb.* 2. 74.
Volkameria multiflora. *Burm. ind.* 137. *t.* 45. *f.* 1.
Leaves ovate toothed and angular, peduncles axillary ſubtriflorous.

4. Clerodendrum calamitoſum.
Lin. ſyſt. 578. *Reich.* 3. 198. *mant.* 90.
Volkameria alternifolia. *Burm. ind.* 137. *t.* 44.
Leaves oval ſomewhat toothed naked.

5. Clerodendrum paniculatum.
Lin. ſyſt. 578. *Reich.* 3 198. *mant.* 90. *Vahl ſymb.* 2. 74.
Leaves five-lobed toothletted ſmooth, panicle brachiate, axils woolly.

6. Clerodendrum trichotomum.
Lin. ſyſt. 578. *Thunb. jap.* 256. *Kæmpf. amæn.* 5. 827. *ic. ſelect. t.* 22.
Leaves lobed and undivided broad-ovate entire, panicle trichotomous.

7. Clerodendrum ſquamatum.
Vahl ſymb. 2. 74.
Leaves cordate obſcurely angular, branches of the panicle dichotomous ſmooth.

8. Clerodendrum diverſifolium.
Vahl ſymb. 2. 75.
Leaves entire and three-lobed ovate, branches of the panicle dichotomous villoſe, pedicels racemed.

DESCRIPTIONS, &c.

1. This is a tree (or rather ſhrub) with ſubtomentoſe branches. Leaves oppoſite, acute, veined, ſomewhat ſcabrous, large, quite entire; petioles the length of the leaves. Panicle terminating, peduncles brachiate, dichotomous. Calyx wide, divided deeply into five oblong, acuminate, equal ſegments.

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[a] Linn. mant. [b] Gærtner. [c] Juſſieu.

Border of the corolla ſhort; ſegments obovate. Anthers oblong. Stigma bifid[d].

It is deſcribed by Loureiro as upright, and ſeven feet high, with quadrangular, four-grooved branches. Leaves broad-ovate, acuminate, ſubcrenate, hairy, wrinkled. Flowers in a vaſt, terminating, racemed corymb. The peduncle and all the parts of the flower are of a bright ſcarlet colour. Anthers nodding, emarginate at the baſe. Stigma acute, bifid.

The fruit, according to Gærtner, is a ſucculent berry, covered by the triangular, three-nerved ſegments of the calyx, ſubglobular, flatted a little, with a croſs-ſhaped groove at the top. Skin very thin, ſmooth and ſhining, not opening; pulp ſoft, vaniſhing by age. There are four ſtones incloſed, which are ſomewhat of a bony texture.

Native of the Eaſt Indies, and China.

2. This is a hoary ſhrub. Leaves oppoſite, naked, petioled, decurrent a little along the petioles. Peduncles axillary, dichotomous, ſhorter than the leaves. Calyxes ſpreading[e].

Native of the Eaſt Indies. Introduced 1789, by Meſſrs. Kennedy and Lee[f].

3. This is a hoary ſhrub. Leaves petioled, oppoſite, exactly ovate, ſerrate in the middle, with very few notches. Panicles on the top of the branches, axillary, ſolitary, oppoſite, few-flowered, dichotomous, jointly forming a large panicle. A pair of ovate entire bractes at each diviſion of it. Calyx cleft to the middle; ſegments ſubulate, bell-form, ſpreading; tube ſlender, white[g].

The leaves, according to Vahl, are ſharp at both ends, an inch long, quite entire, toothed or angular on the ſame branch, greeniſh-hoary. Petioles filiform, hoary, lax. Peduncles uſually three-flowered. Segments of the calyx lanceolate, acuminate.

Found in the Eaſt Indies, by König.

4. Leaves oppoſite, petioled. Panicle brachiate. Flowers rather leſs than in the other ſpecies.—Obſerved in Java, by Baſter[h].

5. Branches quadrangular, ſmooth, purple, with a groove along the ſides. Leaves petioled, oppoſite, a hand in length, the lower ones a ſpan long, five-lobed, cordate at the baſe, ſmooth on both ſides, remotely toothletted; lobes lanceolate, acute: petioles round, grooved, the ſize of a pigeon's quill: axils hirſute with long curling whitiſh hairs ſurrounding the ſtalk, as well as at the baſe of the branches of the panicle. Panicle terminating, half a foot in length: partial peduncles horizontal, oppoſite, ſmooth, many times dichotomous, the branchlets ſpreading out very much; the laſt pedicels capillary. Leaflets petioled, cordate-lanceolate at the baſe of the partial peduncles: ſubulate at the baſe of the branchlets. Calyx ſmooth, with lanceolate ſegments. Corolla an inch over; tube filiform; ſegments of the border oblong[i].

6. Stem ſhrubby; branches four-cornered, four-furrowed; ſmooth. Leaves oppoſite, petioled; the lower larger, three-lobed; the upper undivided; the uppermoſt very ſmall: all acuminate, ſmooth; deep green on the upper ſurface, paler underneath and nerved; a hand in length. Petioles ſubpubeſcent, an inch long. Panicle very large, ſuperdecompound, naked. Peduncles and pedicels ſmooth, compreſſed at the diviſion. Calyx inflated, contracted above, five-cornered, ſhrivelling but permanent, much wider and ſhorter than the corolla, ſmooth; ſegments keeled, acute, erect. Tube of the corolla a little bent; ſegments of the border oblong, obtuſe, ſpreading, white. Filaments inſerted into the tube of the corolla within the throat, whitiſh, divaricated at bottom. Anthers cordate-ovate. Germ four-cornered, ſmooth. Style longer than the ſtamens. Stigma truncated. The fruit is an almoſt globular capſule, which is four-furrowed, ſmooth, incloſed within the large calyx, four-celled and four-valved. There is one ſmooth ſeed in each cell. The leaves have a ſtrong poiſonous ſmell like Mandragora.—Near Nagaſaki, *&c.* in Japan; flowering in auguſt and ſeptember[k].

7. Branches quadrangular, ſmooth, with four grooves. Leaves two inches and more in length; with a deep ſinus at the baſe, little acuminate, three or five-nerved, with aſcending nerves, tender, ſmooth, ſcarce toothletted, ſometimes ciliate with very minute hairs, covered underneath with very minute orbicular ſcales: petioles ſhort, a little hairy. Panicle terminating, ſpreading, ſmooth: peduncles thrice dichotomous: pedicels not racemed, but a one-flowered pedicel, in each diviſion. Leaflets oppoſite, petioled, cordate, ſlightly villoſe beneath under the firſt ramifications; the upper ones gradually narrower: under the branchlets ſubulate, ſeſſile. Leaflets of the calyx ovate, acute, coloured, ſmooth. It differs from *C. infortunatum*, in having the leaves ſmaller, ſmooth, and cut with a deep ſinus at the baſe; the panicle, calyx and corolla ſmooth; the branches four-cornered and grooved: from *C. trichotomum* in the ſinus at the baſe of the leaves, which are ſcaly beneath, all entire; but they agree in the calyx.

Native of the Eaſt Indies.

8. Branches quadrangular, four-grooved, villoſe at top. Leaves an inch and half in length, tender, ſharp at the baſe, three-nerved, very ſmooth; the middle lobe acuminate, the ſide ones ſhort: petiole one-third or one-fourth of the length of the leaf. Panicle terminating, half a foot long: partial peduncles oppoſite, ſpreading, twice or thrice dichotomous. Leaflets at the baſe of the partial peduncles petioled, oblong, acute at both ends, quite entire; the reſt ſubulate. Flowers pedicelled, alternate, diſtant. Calyx pubeſcent, with oblong, acute ſegments. Tube of the corolla pubeſcent, an inch long; upper lip bifid, with erect linear ſegments; the lower three-lobed, ſpreading very much; the lobes oblong, the ſide ones ſhorter. It differs from *C. trichotomum* in having the branches villoſe at top, the leaves narrower, the panicle villoſe, dichotomous, and finally racemed, the ſegments of the calyx oblong. The lobes of the corolla are ſcarcely equal.—Native of the Eaſt Indies[l].

Clerodendrum. See *Volkameria*.]

CLETHRA. (Κληθρα *Theophr. probably from* κλειω, *to cloſe or ſhut up.*)

Lin. gen. n. 553. *Reich.* 597. *Schreb.* 751. *Gærtn. t.* 63. *Juſſ.* 160. *Gron. virg.* 43.

Claſſ. 10. 1. Decandria Monogynia.

Nat. order of *Bicornes*. *Ericæ* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, five-parted; (five-leaved, *Gærtn.*) *leaflets* ovate, concave, erect, permanent.

Cor. *Petals* five, oblong, broader on the outſide, from erect ſpreading, a little longer than the calyx; the upper one broadeſt.

Stam. *Filaments* ten, ſubulate, the length of the corolla. *Anthers* oblong-erect, gaping at the top.

Pist. *Germ* roundiſh. *Style* filiform, erect, permanent, increaſing. *Stigma* trifid.

Per. *Capſule* roundiſh, involved in the calyx, three-celled, three-valved.

Seeds very many, angular. (few, *G.*)

ESSENTIAL CHARACTER.

Cal. five-parted. *Pet.* five. *Stigma* trifid. *Capſ.* three-celled, three-valved.

SPECIES.

1. Clethra alnifolia. *Alder-leaved Clethra.* *Lin. ſpec.* 566. *Syſt.* 408. *Reich.* 2. 299. *Gron. virg.* 47. 67. *Duham. arb.* 1. 176. *t.* 71. *Ait. hort. kew.* 2. 73. *Mill. fig. t.* 281. *Gærtn. fruct.* 1. 301. *t.* 63. Alnifolia americana, &c. *Pluk. alm. t.* 115. *f.* 1. *Cateſb. car.* 1. *t.* 66.

α. C. denudata. *With leaves ſmooth on both ſides.*

β. C. pubeſcens. *With leaves tomentoſe underneath.* *Shrubby; leaves obovate-lanceolate, ſerrate, ſmooth; racemes ſimple in form of ſpikes.*

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[d] Linn. zeyl.
[e] Linn. amoen.
[f] Hort. kew.
[g] Linn. ſuppl.
[h] Linn. mant.
[i] Vahl.
[k] Thunberg.
[l] Vahl.

[2. Clethra paniculata. *Panicled Clethra.*
Ait. hort. kew. 2. 73.
Shrubby; leaves lanceolate, naked on both ſides; flowers panicled.

3. Clethra arborea. *Tree Clethra.*
Ait. hort. kew. 2. 73.
A tree; leaves oblong-lanceolate ſmooth on both ſides; racemes in form of ſpikes; calyxes obtuſe.

4. Clethra tinifolia.
Swartz prodr. 74.
Tinus occidentalis. *Lin. ſpec.* 530. *Reich.* 2. 230.
Volkameria. *Brown. jam.* 214. *t.* 21. *f.* 1. *Sloan. jam.* 2. 86. *t.* 198. *f.* 2.
A tree; leaves oblong-lanceolate, quite entire, hoary underneath; racemes panicled, ſpike-ſhaped, tomentoſe.

DESCRIPTIONS, *&c.*

1. The roots ſpread far on every ſide, and ſend up many ſtems, from eight or ten to fourteen feet high, which are covered with a grayiſh bark, and divide into ſmall round alternate branches. The leaves are about three inches long, and an inch and quarter broad in the middle; they are of a deep green on their upper ſide, and of a whitiſh green underneath, alternate, and on very ſhort petioles. The flowers are on looſe ſpikes from four or five inches to a ſpan long; the petals are white. They appear in july, and when the ſeaſon is mild, ſome ſpikes are produced in october[a]. The fruit is a ſmall, ſubglobular, cruſtaceous capſule, with three grooves on it. The partitions within are ſimple and contrary to the valves. There are ſix or eight ſeeds in each cell; they are ſmall, ſubovate, variouſly angular, ſomewhat compreſſed, wrinkled and rufeſcent[b].

Native of North America, in moiſt places, and by rivulets. Introduced in 1736, by Peter Collinſon, Eſq.[c] Cateſby (in 1731) ſays that it flouriſhes at Mr. Bacon's at Hoxton.

2. Native of North America. Mr. William Young. Introduced in 1770. It flowers from auguſt to october[d].

3. Native of Madeira. Mr. Francis Maſſon. Introduced in 1784[e].

4. This ſhrubby tree riſes generally to the height of twelve or fourteen feet, with a thick trunk, covered with a ſmooth clay-coloured bark: the branches are ſpread equally round, and towards their ends are beſet with leaves five inches long and half as broad in the middle, dark green and ſmooth, on petioles a quarter of an inch in length. Each flower is on a pedicel with a ſubulate bracte at the baſe. Fruits ſmooth, green, roundiſh, bigger than peas; containing a ſweet, white, mealy pulp, and a hard, browniſh-black ſtone, bigger than a pepper-corn and much like it: they are ſometimes eaten in Jamaica, of which iſland this tree is a native. Sloane calls it Baſtard Locuſt-tree[f].]

PROPAGATION AND CULTURE.

This is hardy enough to bear the open air in England, and is one of the moſt beautiful ſhrubs at the ſeaſon of its flowering; which is very little later than in its native country, being commonly in flower here by the beginning of july; and if the ſeaſon is not very hot, there will be part of the ſpikes in beauty till the beginning of auguſt; and as moſt of the branches are terminated by theſe ſpikes of flowers, when the ſhrubs are ſtrong, they make a fine appearance at that ſeaſon.

This will thrive much better in moiſt land than in dry ground, and requires a ſheltered ſituation, where it may be defended from ſtrong winds, which frequently break off the branches, where they are too much expoſed to its violence. It is propagated by layers, but they are generally two years before they get root, ſo that at preſent it is rare in England. The fineſt ſhrubs of this kind, were in the curious garden of his grace the Duke of Argyle, at Whitton near Hounſlow, where they throve as well as in their native country. They may alſo be propagated by ſuckers, which are ſent out from their roots; if theſe are carefully taken off with fibres in the autumn, and planted into a nurſery-bed, they will be ſtrong enough in two years to tranſplant where they are to remain.

It may alſo be propagated by ſeeds, which muſt be procured from the countries where it grows naturally, for the ſeeds are not perfected in England. But as theſe ſeldom arrive here till ſpring, when they are ſown at that ſeaſon, the plants will not come up till the following ſpring. Therefore the ſeeds ſhould be ſown in pots, and placed in a ſhady ſituation till autumn, then placed under a frame in winter; the plants will come up the next ſpring, and in autumn may be tranſplanted into a nurſery-bed, to get ſtrength before they are placed to remain.

[CLEVERS. See *Galium Aparine.*

CLEYERA. See *Ternſtroemia.*

CLIBADIUM. (Κλιϐαδιον, *the name of a plant in Dioſcorides.*)
Lin. gen. n. 1329. *Reich.* 1156. *Schreb.* 1430. *Juſſ.* 191. *Auth. Allamand.*
Claſſ. 21. 5. Monoecia Pentandria.
Natural order of *Compoſitæ Oppoſitifoliæ. Corymbiferæ* Juſſ.

GENERIC CHARACTER.

CAL. common imbricate; *ſcales* ovate, acute.
COR. *Compound:* corollules tubular, funnel-form; border five-cleft.
Corollules of the diſk many, pedicelled, hermaphrodite—of the ray three or four, ſeſſile, female.
STAM. in the *hermaphrodites* filaments five, capillary, very ſhort. *Anthers* oblong, approximating.
PIST. in the *hermaphrodites*, germ very ſmall, ſuperior: ſtyle filiform: ſtigma ſimple—in the *females*, germ roundiſh, inferior; ſtyle filiform: ſtigma two-parted.
PER. *common* none. *Calyx* ventricoſe, coloured.
Proper, to the *hermaphrodites* none—to the *females*, a roundiſh, ſucculent, umbilicate *drupe.*
SEED one, cordate, compreſſed.

ESSENTIAL CHARACTER.

MALE. Common calyx imbricate. *Cor.* of the diſk five-cleft.
FEM. Common calyx the ſame. *Cor.* of the ray female, three or four. *Seed* an umbilicate drupe.

SPECIES.

1. Clibadium ſurinamenſe.
Lin. ſyſt. 853. *Reich.* 4. 142. *mant.* 294.
C. foetidum. *Allam. mſs.*

DESCRIPTION, *&c.*

Leaves oppoſite, petioled, ovate, acuminate, acutely crenate, ſcabrous. Peduncles oppoſite. Common calyx violet-coloured when ripe. Corolla white. Drupe green, with a yellow viſcid juice.—Native of Surinam[g].]

CLIFFORTIA. (*This name was given by Eichrodt, in honour of George Clifford, a merchant at Amſterdam; a catalogue of whoſe garden at Hartecamp was publiſhed by Linneus, Amſt.* 1737, *folio.*)
Lin. gen. n. 1133. *Reich.* 1239. *Schreb.* 1550. *Juſſ.* 337.
Claſſ. 22. 11. Dioecia Polyandria.
Nat. order of *Tricoccæ. Roſaceæ* Juſſ.

GENERIC CHARACTER.

* *Male.*

CAL. *Perianth* three-leaved; *leaflets* ovate, acute, coriaceous, ſpreading, deciduous.
COR. none.
STAM. *Filaments* about thirty, capillary, erect, the length of the calyx. *Anthers* twin, oblong, obtuſe, erect, compreſſed.

* *Female.*

CAL. *Perianth* three-leaved, equal, erect, ſuperior, permanent: *leaflets* acute, lanceolate.
COR. none.
PIST. *Germ* oblong, inferior. *Styles* two, filiform, long, plumoſe. *Stigmas* ſimple.

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[a] Mill. fig.
[b] Gærtner.
[c] Hort. kew.
[d] Ibid.
[e] Ibid.
[f] Sloane.
[g] Allamand in Linn. mant.

Per. *Capſule* oblong, nearly columnar, two-celled, crowned with the calyx.

Seeds ſolitary, nearly columnar, linear.

ESSENTIAL CHARACTER.

Male. *Cal.* three-leaved, ſuperior. *Stamens* about thirty.

Fem. *Cal.* three-leaved, ſuperior. *Cor.* none. *Styles* two. *Capſ.* two-celled. *Seed* one.

SPECIES.

* *With ſimple leaves.*

[1. Cliffortia odorata.
Lin. ſyſt. 893. *ſuppl.* 431.
Leaves ovate ſerrate ribbed villoſe underneath.]

2. Cliffortia ilicifolia. *Ilex-leaved Cliffortia.*
Lin. ſpec. 1469. *Reich.* 4. 274. *mant.* 499. *hort. cliff.* 463. 1. *t.* 30. *Mill. illuſtr. ic. Dill. elth.* 36. *t.* 31. *f.* 35.
Leaves ſubcordate toothed.

3. Cliffortia ruſcifolia. *Butcher's-Broom-leaved Cliffortia.*
Lin. ſpec. 1469. *ſyſt.* 893. *Reich.* 4. 274. *hort. cliff.* 463. 2. *t.* 31. *Berg. cap.* 354. *Pluk. alm. t.* 297. *f.* 2.
Leaves lanceolate quite entire.

[4. Cliffortia ferruginea.
Lin. ſyſt. 893. *ſuppl.* 429.
Leaves lanceolate ſetaceous-ſerrate.

5. Cliffortia graminea.
Lin. ſyſt. 893. *ſuppl.* 429.
Leaves enſiform ſerrulate, petioles dilated terminated by two ſtipule-ſhaped awns.

6. Cliffortia polygonifolia.
Lin. ſpec. 1470. *Reich.* 4. 275. *hort. cliff.* 501. *t.* 32.
Leaves linear hairy.

7. Cliffortia filifolia.
Lin. ſyſt. 893. *ſuppl.* 430.
Leaves filiform triquetrous ſmooth quite entire.

** *With compound leaves.*

8. Cliffortia crenata.
Lin. ſyſt. 893. *ſuppl.* 430.
Leaves binate orbiculate crenulate.

9. Cliffortia pulchella.
Lin. ſyſt. 893. *ſuppl.* 430.
Leaves binate orbiculate quite entire.]

10. Cliffortia trifoliata.
Lin. ſpec. 1470. *Reich.* 4. 275. *hort. cliff.* 456. 6. (Myrica). *Pluk. alm. t.* 319. *f.* 4.
Leaves ternate, the middle three-toothed.

[11. Cliffortia ſarmentoſa.
Lin. ſyſt. 893. *Reich.* 4. 275. *mant.* 299.
Leaves ternate linear villoſe.

12. Cliffortia ſtrobilifera.
Lin. ſyſt. 893. *Reich.* 4. 275. *Pluk. alm. t.* 275. *f.* 2.
Leaves ternate linear acute even.

13. Cliffortia obcordata.
Lin. ſyſt. 894. *ſuppl.* 429.
Leaves ternate, leaflets roundiſh, the middle one obcordate.

14. Cliffortia ternata.
Lin. ſyſt. 894. *ſuppl.* 430.
Leaves ternate, leaflets entire hairy.

15. Cliffortia juniperina.
Lin. ſyſt. 894. *ſuppl.* 430.
Leaves ternate triquetrous ſubulate crowded.

16. Cliffortia falcata.
Lin. ſyſt. 894. *ſuppl.* 431.
Leaves ternate linear falcated ſmooth.

17. Cliffortia teretifolia.
Lin. ſyſt. 894. *ſuppl.* 430.
Leaves faſcicled columnar ſubulate incurved ſmooth entire.

18. Cliffortia ericæfolia.
Lin. ſyſt. 894. *ſuppl.* 430.
Leaves faſcicled columnar furrowed ſmooth.

19. Cliffortia cuneata. *Wedge-leaved Cliffortia.*
Ait. hort. kew. 3. 413.
Leaves wedge-form ſerrate at the end.

DESCRIPTIONS, &c.

The Cliffortias are ſhrubs from the Cape of Good Hope. Leaves ſimple or ternate, ſheathing at the baſe. Flowers axillary, ſubſeſſile.

1. This is an erect ſhrub, three feet high, little branching. Branches ſimple, ſubpubeſcent. Leaves alternate, ſubpetioled, obtuſe, by no means ſtiff. Stipules under the leaf, membranaceous, ſemibifid, acute, withering. Flowers from the axils of the leaves. Calyx three-parted. The male flowers only have been obſerved; theſe agree with the other ſpecies of Cliffortia, though the habit is different, and rather reſembles that of Mint[a].

This, and moſt of the other new ſpecies of the Supplement, were found at the Cape of Good Hope by Thunberg.

2. A ſhrub, with alternate declining branches, clothed with truncated membranes and ſtipules. Leaves alternate, ſheathing very ſhortly at the baſe, roundiſh, having ſeven or nine teeth terminated with ſpines, ſpreading, recurved at the end, flat, cartilaginous about the edge, nerved, ſmooth, biennial, horizontally deciduous, leaving a reddiſh permanent ſheath. Stipules at the baſe of the leaf in front, above the ſheath, acuminate-thorny; ſpreading, permanent. Flowers lateral, axillary, ſeſſile, ſolitary, green. Filaments white, anthers yellow[b].]

Stem weak, four or five feet high. Leaves grayiſh. Before the calyx opens, it forms a bud, in ſhape and ſize like thoſe of the Caper. The flowers appear in june, july, and auguſt; but the leaves continue in verdure through the year. The plants in the European gardens, both of this and the following ſort, are all male. [Cultivated 1714, in Chelſea garden.

3. Branches alternate, frequent, aſcending, below aſh-coloured, ſmooth, above brown, tomentoſe: branchlets alternate, very frequent, ſhort, covered with lanceolate, acuminate, imbricate ſcales, in other reſpects naked, except at the end, where they are leafy. Leaves ovate-lanceolate, with a ſpine at the end; ſomewhat gaſhed, the upper ſurface ſmooth, even and ſhining, the lower ſix-nerved and villoſe; they are ſeſſile and approximating. Spikes of flowers roundiſh, at the ends of the branchlets, intrenched in leaves. Bractes ſmaller than the leaves, involving each flower, trifid, hirſute on the outſide, ſpiny, with a ſharp, membranaceous, hairy leaflet near the baſe on each ſide. The female flowers have a double perianth: the lower two-leaved, inferior; leaflets linear, obtuſe, broader at the baſe, concave, claſping, hairy, tender, longer than the germ: the upper three-leaved, ſuperior; leaflets ovate, acute, mucronate-hairy, green, ſmooth, reflex-ſpreading, the length of the germ. Germ ovate, obtuſe, attenuated at the baſe, ſubgibboſe, ſtreaked and angular[c].

Introduced in 1786, by Mr. Francis Maſſon[d].

4. Stems like thoſe of Knot-graſs, filiform, uſually proſtrate, even, branching. Branches ſhort, ferruginous, herbaceous. Leaves alternate, ſubpetioled, ſtriated, acute, naked, ſerrate; the ſerratures ſetaceous, unarmed. Stipules two-parted, ferruginous, ſcarioſe. Flowers axillary, ſeſſile, trifid.—The female has not been obſerved.—Found at the Cape by Sparrmann[e].

5. Stems many together, two feet high, ſcarcely branching, ſtriated, covered with leaves, which are approximating, erect, convolute, ſmooth, ſtriated, acute. Petioles connected with the leaves by a joint; the edges elongated into ſubulate, erect diviſions[f].

6. This is a ſmaller ſhrub than the ſecond and third ſorts. Branches naked, upright, leſs divided, alternate, gray, pubeſcent, round. Leaves numerous, imbricate-faſcicled, lanceolate-linear, quite entire and reflex at the edge, acuminate, ſeſſile. It differs from *C. ruſcifolia*, in having leaves only one fourth of the ſize, with a ſingle nerve, hairy and

[a] Linn. ſuppl.
[b] Linn. mant.
[c] Bergius.
[d] Hort. kew.
[e] Linn. ſuppl.
[f] Ibid.

ſeſſile; whereas in that they are ſmooth and toothed at the baſe, with three nerves at the back[g].

7. Of this we have no deſcription. It was found at the Cape, with many of the others, by Thunberg.

8. An erect ſhrub, rather large. Leaves alternate, ſeſſile, conjugate, very finely crenulate, ſmooth. Flowers axillary, ſolitary, trifid.

9. Leaves converging, and guarding the flowers in the cavity which they form, like *Hedyſarum pulchellum*, beautifully adorned on the outſide with radiating nerves[h].]

10. Stems ſlender, woody, procumbent, ſilky with hairs, and ſending out ſlender branches on every ſide. Leaves ſeſſile, hairy, the middle leaflet much broader than the two ſide ones, which are lanceolate. Flowers axillary, on very ſhort peduncles, ſhaped like thoſe of the ſecond, but ſmaller; they appear in july and auguſt. We have only male plants in the Engliſh gardens.

[Cultivated by Mr. Miller before 1759.

11. Stem ſhrubby, ſarmentoſe, filiform, four feet high, irregular: branches alternate, ſhort, ſimple, round, pubeſcent. Leaves alternate, ſubſeſſile, ſubequal, very narrow, unarmed, hoary-pubeſcent. Petiole very ſhort, ſtipular, membranaceous, dilated, emarginate, naked. Flowers lateral, axillary, ſeſſile, ſolitary, white.—The female has not been obſerved[i].

12. A ſhrub with round branches, ſparingly branched. Stipules (at firſt petioles) ſheathing, ſcarioſe, ſubovate, having two teeth, ſmooth, permanent. Leaves ſeſſile, carinated, on a very ſhort, ſheathing petiole. The fructification not having been obſerved, we can only conjecture the genus from the ſtructure. The ſtrobiles are galls, not fruits[k]. Juſſieu doubts whether this ſpecies with its ſtrobile-ſhaped galls, and ſo different in habit, be really a Cliffortia.

13. An erect lowly ſhrub, with diſtich branches. Leaves ſeſſile, obovate, nerveleſs, very obtuſe, quite entire, ſmooth, like thoſe of *Peplis* (Purſlane), ſmall. Flowers in the axils of the leaves, ſeſſile, not longer than the leaves. The leaves are often in pairs.

14. A ſhrub, with ſmall, ovate-lanceolate, hairy leaves, very different from the other Cliffortias.

15. A ſhrub reſembling Juniper, erect, three feet in height, branching very much. Leaves faſcicled, aceroſe (like thoſe of Juniper) linear, channelled, mucronate, ſubſerrate, on a broadiſh petiole, ſo ſhort as ſcarcely to be obſervable. Flowers axillary, ſeſſile.—Obſerved at the Cape by Sparrmann.

16. A ſhrub, a foot in height, erect, branching, ſtrict. Leaves often three from each bud: leaflets ſharpiſh, incurved. It reſembles *C. ſarmentoſa* in the leaves, but they are ſmooth in this ſpecies.

17, 18. There is much ſimilitude between theſe and *C. filifolia*[l].

19. Native of the Cape, (with all the former) Mr. Fr. Maſſon. Introduced 1787. It flowers in april[m].]

PROPAGATION AND CULTURE.

2. This plant is eaſily propagated by cuttings, which may be planted in any of the ſummer months; if theſe are planted in ſmall pots filled with light earth, and plunged into a very moderate hot-bed, they will ſoon take root, provided they are ſcreened from the ſun, and duly watered; when they have taken root, they muſt be gradually inured to bear the open air, to which they ſhould be expoſed, to prevent their drawing up weak: therefore they ſhould be placed abroad till they have obtained ſome ſtrength, then they may be each tranſplanted into a ſeparate ſmall pot, and placed in the ſhade until they have taken freſh root; after which they may may be placed with other of the hardy kinds of exotic plants in a ſheltered ſituation till october, when they ſhould be removed into the green-houſe, or placed under a common hot-bed frame, where they may be ſcreened from the hard froſt, but enjoy the free air at all times when the weather is mild.

When the plants advance in height, their ſtems and branches muſt be ſupported, otherwiſe they will trail upon the ground. In ſummer they muſt be placed in the open air, with Myrtles and other hardy green-houſe plants; and in winter the plants may be treated in the ſame manner as thoſe, but muſt have little water in winter. This plant has endured the cold of our ordinary winters, when planted near a ſouth-weſt wall without covering, but in ſevere winters it is always deſtroyed.

3. This is more tender; therefore it ſhould be placed in a warm green-houſe in winter, and during that ſeaſon ſhould have little water. In ſummer it may be expoſed to the open air in a ſheltered ſituation, but ſhould not remain abroad too late in autumn; for if there ſhould be much rain at that ſeaſon, it might endanger the plants. We have only the male plant in Europe, and it is difficult to propagate.

10. This requires the ſame management as the ſecond, and is equally hardy; but muſt not be over watered in winter. As there are only male plants in Europe, it is only propagated by layers, and theſe are two years before they take root. The leaves continue green all the year, and being ſingularly ſhaped, they make a variety in the green-houſe during the winter ſeaſon.

[The other ſorts, coming from the ſame country, and being ſhrubs of the ſame nature with theſe, whenever they are introduced among us, will be propagated in the ſame manner, and require the ſame treatment.

CLIMBER. See *Clematis*.

CLINOPODIUM. (Κλινοποδιον, *Dioſcor. From* κλινη *and* ποδιον, *dimin. of* πους, *pes lecti, bed's-foot.—The flowers growing in whorls, one above another, like the old-faſhioned turned feet of beds.*)

Lin. gen. n. 725. *Reich.* 783. *Schreb.* 980. *Tournef.* 92. *Juſſ.* 115. *Raii meth.* 64.

Claſſ. 14. 1. Didynamia Gymnoſpermia.

Nat. order of *Verticillatæ*. *Labiatæ* Juſſ.

GENERIC CHARACTER.

CAL. *Involucre* many-briſtled, length of the perianth, placed beneath the whorl.

Perianth one-leafed, cylindric, very ſlightly incurved, with a two-lipped mouth; upper lip wider, trifid, acute, reflected: lower lip divided, ſlender, inflected.

COR. one-petalled, ringent; *Tube* ſhort, gradually widened into the throat; upper lip erect, concave, obtuſe, emarginate. Lower lip trifid, obtuſe; middle ſegment wider, emarginate.

STAM. *Filaments* four, under the upper lip, of which two are ſhorter than the others. *Anthers* roundiſh.

PIST. *Germ* four-parted. *Style* filiform, the ſame ſituation and length with the ſtamens. *Stigma* ſimple, acute, compreſſed.

PER. none. Calyx contracted round the neck, gibbous round the body, containing the ſeeds.

SEEDS four, ovate.

ESSENTIAL CHARACTER.

Involucre many-briſtled, under the whorl.

SPECIES.

1. Clinopodium vulgare. *Wild Baſil.*
Lin. ſpec. 821. *Reich.* 3. 75. *hort. cliff.* 305. *fl. ſuec.* 533. *Hudſ. angl.* 261. *With.* 620. *Lightf. ſcol.* 316. *Relh. cant. n.* 444. *Hall. helv. n.* 239. *Scop. carn. n.* 731. *Pollich. pal. n.* 572. *Riv. mon. t.* 43. *Sabb. hort.* 3. *t.* 65, 66. *Mor. hiſt. ſ.* 11. *t.* 8. *f.* 1. *Pet. herb. t.* 32. *f.* 9. *Ger. emac.* 675. *f.* 2. *Park. theat.* 22. 4. *Baub. pin.* 224. *Cluſ. hiſt.* 1. 354. 2. *Lob. obſ.* 269. 2. *ic.* 1. 504. 2. *Cam. epit.* 563. *Trag.* 36. 2. *Matth.* 814. *Raii hiſt.* 558. *ſyn.* 239.

β. C. humile. *Dwarf wild* or *field Baſil.*
Mill. dict. n. 4.

γ. C. carolinianum. *Carolina field Baſil.*
Mill. dict. n. 5.

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[g] Linn. cliff.
[h] Linn. ſuppl.
[i] Linn. mant.
[k] Linn. ſyſt.
[l] Linn. ſuppl.
[m] Hort. kew.

δ. C. ægyptiacum. *Egyptian field Baſil.*
Mill. dict. n. 6. *fig. t.* 95.
Heads roundiſh, hiſpid; bractes briſtly.

2. Clinopodium incanum. *Hoary Clinopodium.*
Lin. ſpec. 822. *Reich.* 3. 75. *Dill. elth.* 87. *t.* 74. *f.* 85. *Mor.* 11. 8. 4. *Pluk. mant. t.* 344. *f.* 7. *Raii ſuppl.* 298. 1.
Origanum. *Raii hiſt.* 1229.
Leaves tomentoſe underneath; whorls flatted; bractes lanceolate.

3. Clinopodium rugoſum. *Wrinkled Clinopodium.*
Lin. ſpec. 822. *Reich.* 3. 76. *Dill. elth.* 88. *t.* 75. *f.* 86.
Leaves wrinkled; heads axillary, peduncled, flatted, radiated.

[4. Clinopodium capitatum.
Swartz prodr. 88. *Brown. jam.* 259. 1. *Dill. elth.* 89. *Plum. ic. t.* 163. *f.* 2. (Meliſſa) *Sloan. jam.* 1. 174. *t.* 109. *f.* 2. (Sideritis) *Pluk. phyt. t.* 222. *f.* 7. (Scabioſæ affinis). *Raii ſuppl.* 284. *n.* 7. (Mentha).
Hyptis capitata. *Jacqu. collect.* 1. 102. *ic. rar. t.* 114.
Leaves flat, ſmooth, heads axillary, peduncled.

5. Clinopodium aſiaticum.
Lour. cochinch. 374.
Leaves oblong, nerved, wrinkled, tomentoſe underneath, ſpike whorled, terminating.]

DESCRIPTIONS, *&c.*

1. Root perennial, fibrous, ſending up ſeveral ſtiff ſquare ſtalks a foot and half high, from which come out a few lateral branches towards the top. The flowers come out in round whorls; one of theſe terminates the ſtalk, and there is generally another which ſurrounds the ſtalk at the joint immediately below it. The whorls grow very cloſe, and each peduncle ſuſtains ſeveral flowers, which are uſually purple, but ſometimes white: they appear in june.

[The whole plant is hairy. Stems reddiſh. Leaves diſtant, ovate, ſometimes cordate-ovate, or ovate-acuminate, ſerrate, or crenate, ſometimes nearly entire, on ſhort petioles. Forty flowers are found in one whorl; calyx very hirſute; colour of the corolla bright red; tube long; lower lip crenate.—It is fond of a calcareous ſoil.—The ſmell is ſlightly aromatic, and not unpleaſant.]

β. Stems not more than half the height of the common ſort, and dividing into many long ſide branches; leaves ſmaller and rougher; whorls produced half the length of the branches, whereas the common ſort has rarely more than two; the bractes are alſo much longer. This flowers in june and july, and has a perennial root.

γ. Root perennial. Stems ſtraight, hairy, almoſt round, joints four or five inches aſunder, with two oblong leaves at each, hairy on their under ſide, on ſhort foot-ſtalks; at the bottom of theſe a ſlender branch comes out on each ſide, half an inch long, having two or four ſmall leaves ſhaped like the others. The flowers are produced in ſmall whorls, ſtanding thinly; they are white, and the bractes are longer than the calyxes. It flowers in auguſt.

Both theſe were ſent to Mr. Miller from Carolina by Dr. Dale.

δ. Root perennial. Stems a foot and half high. Leaves oval, with many tranſverſe deep furrows, dark green, oppoſite, five or ſix inches aſunder. There are commonly two or four ſide branches from the main ſtem, produced towards the bottom; and the whorls of flowers are produced at every joint towards the upper part of the ſtem, which are pretty large and hairy. The flowers are ſomewhat larger than thoſe of the common ſort, of a deeper colour, and ſtretch a little more out of the calyx; but the greateſt difference between them is, that in this the leaves and whorls are placed at a greater diſtance; nor do the plants continue ſo long. It is a native of Egypt.

It flowers in june, a fortnight or three weeks before the common Field Baſil, and the ſeeds ripen in ſeptember.

2. Root perennial. Stems about two feet high, putting out a few ſhort ſide branches towards the upper part. Leaves oblong, oval, the ſize of thoſe of Water Mint, oppoſite, ſeſſile, ſoft to the touch, with a ſtrong odour between that of Marjoram and Baſil, the upper ſurface pale green, the under hoary and woolly; the edges are ſlightly indented. Whorls flat, ſmooth, generally three, the upper ſmaller and terminating, the loweſt larger than the middle one. Flowers pale purple, the ſtamens ſtanding out beyond the corolla; the bractes large, lanceolate, indented. Native of North America, where in ſome parts it is called Snake-weed, being looked upon as a remedy for the bite of the rattle-ſnake. In England it flowers in july. Mr. Miller frequently received the ſeeds from Pennſylvania and Carolina. [Sherard had them from Virginia and Maryland; and it was cultivated in the Eltham garden in 1732.]

3. Root perennial. Stems cloſely covered with browniſh hairs, and between two and three feet high. Leaves very unequal in ſize, ſerrate, rough on their upper ſide, hairy on the under. Peduncles ſlender, hairy, about three inches long, ſuſtaining ſmall heads of flowers ſhaped like thoſe of the Scabious; corolla white, ſmaller than that of the foregoing; bractes radiate. It flowers in ſeptember, but never ripens its ſeeds here. Native of Carolina, whence the ſeeds were ſent to Mr. Miller by Dr. Dale. [It was cultivated in the Eltham garden; and before that, in the royal garden at Hampton Court, in 1690[n].

4. Jacquin makes this a diſtinct genus, under the name of *Hyptis*, from the inverted (υπτιω) form of the corolla. He thus deſcribes it.

Stems ſuffruticoſe, two or three feet high; from theſe in the ſpring ariſe herbaceous ſtems, which are quadrangular, roughiſh, two feet high, branched. Leaves oppoſite, petioled, ovate, but with the baſe acute, veined, unequally ſerrate, acute, both ſides appearing hairy with a magnifier, deep green; the lower ones wrinkled, the largeſt ſeven inches long. Peduncles ſolitary, quadrangular, ſlender, when full grown two or three inches long, bearing at the top numerous flowers collected into a cloſe ſemiglobular head, ſupported at bottom by an involucre of many lanceolate leaflets. Calyx ſomewhat hiſpid. Corolla white, with a tinge of fleſh-colour; tube ſomewhat hairy on the outſide, but the back of the helmet more ſo; border ſpreading much, often reflex and inverted, upper lip trifid, lower (which is uppermoſt by the inverſion of the corolla) ſemibifid. The whole plant is inodorous[o].

Native of Jamaica, Barbadoes, and St. Domingo. Cultivated in the Eltham garden in 1732.

5. Stem ſuffruticoſe, two feet and an half high, erect, quadrangular, four-furrowed, ſimple, villoſe. Leaves ovate-oblong, obtuſe, ſlightly ſerrate, many-nerved. Flowers violet-coloured, in interrupted whorls, forming an oblong ſpike, with ſharp, hirſute involucres. Calyx two-lipped, quite entire, unequal, very hairy. Upper lip of the corolla concave, equally trifid; lower refracted, quite entire, longer. Native of Cochinchina[p].]

PROPAGATION AND CULTURE.

Theſe plants may be propagated by ſeeds, and alſo by parting their roots; the latter is generally practiſed in England, becauſe the foreign ſorts do not perfect their ſeeds here. The beſt time to tranſplant and part their roots is in autumn, that they may take root before winter. If theſe are planted in a dry ſoil, they are (except the third ſort,) hardy enough to thrive in the open air in England, and require no other care but to keep them clean from weeds, and every other year they may be tranſplanted and parted. The third ſort muſt be planted in pots, and in winter ſheltered under a frame, where the plants may enjoy the free air in mild weather, but ſcreened from froſt, otherwiſe they will not live in this country.

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[n] Hort. kew.

[o] Jacquin.

[p] Loureiro.

[Clinopodium. See *Anthoſpermum, Bartſia, Cleonia, Cometes, Monarda, Nepeta, Phlomis, Satureia, Thymus, Ziziphora.*]

CLITORIA. (*So named from the form of the corolla.*)
Lin. gen. n. 869. *Reich.* 943. *Schreb.* 1183. *Gærtn. t.* 149. *Juſſ.* 357. Ternatea *Tourn.* A. G. 1706. t. 1. *Dill.* gen. 10. Clitorius *Dill. Elth.* 76.
Claſſ. 17. 3. Diadelphia Decandria.
Nat. order of *Papilionaceæ* or *Leguminoſæ*.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, erect, tubular, five-toothed, permanent.

Cor. papilionaceous.
Standard very large, ſtraight, emarginate, waved at the margin, ſpreading, and overſhadowing the other petals.
Wings oblong, ſtraight, obtuſe, ſhorter than the ſtandard.
Keel ſhorter than the wings, falcated ſomewhat roundly.

Stam. In two brotherhoods, (ſimple and nine-cleft.) *Anthers* ſimple.

Pist. *Germ* oblong. *Style* aſcending. *Stigma* obtuſe.

Per. *Legume* very long, linear, compreſſed, one-celled, two-valved, with the tip ſubulate.

Seeds many, reniform.

Obs. *The corolla often appears in a ſupine or inverted poſition.—Seeds without albumen. Embryo without plume; by which it is diſtinguiſhed from* Phaſeolus *and* Vicia. G.

ESSENTIAL CHARACTER.

Cor. inverted: ſtandard very large, ſpreading, overſhadowing the wings.

SPECIES.

1. Clitoria Ternatea. *Winged-leaved Clitoria.*
Lin. ſpec. 1025. *Reich.* 3. 456. *hort. cliff.* 360. *upſ.* 214. *fl. zeyl. n.* 283. *Gærtn. fruct.* 2. 321. *Lour. cochinch.* 454.
Lathyrus ſpectabilis. *Forſk. ægypt.* 135. Orobus volubilis. *cat.* 117. *n.* 430.
Phaſeolus fol. pinnatis. *Riv. tetr. t.* 34.
Flos clitorius Breynii. *Comm. hort.* 1. 47. *t.* 24. *Burm. zeyl.* 100.
Flos clitoridis ternatenſium. *Breyn. cent.* 76. *t.* 31. *Raii hiſt.* 890.
Flos cæruleus. *Rumph. amb.* 5. 56. *t.* 31.
Schonga-Cuſpi. *Rheed. mal.* 8. 69. *t.* 38.
Leaves pinnate.

2. Clitoria braſiliana. *Braſilian Clitoria.*
Lin. ſpec. 1026. *Reich.* 3. 456. *hort. upſ.* 215. *cliff.* 361. *Breyn. cent.* 78. *t.* 32.
Leaves ternate; calyxes ſolitary, bell-form.

3. Clitoria virginiana. *Small-flowered Clitoria.*
Lin. ſpec. 1026. *Reich.* 3. 456. *Gron. virg.* 111. 2. *Brown. jam.* 298. *Dill. elth.* 90. *t.* 76. *f.* 87. *Swartz obſ.* 282.
Leaves ternate; calyxes geminate, bell-form.

4. Clitoria mariana. *Maryland Clitoria.*
Lin. ſpec. 1026. *Reich.* 3. 456. *Gron. virg.* 111. 1. *Pet. ſicc.* 243.
Leaves ternate; calyxes cylindric.

[5. Clitoria Galactia. *Milky Clitoria.*
Lin. ſpec. 1026. *Reich.* 3. 457.
Galactia. *Brown. jam.* 298. *t.* 32. *f.* 2.
Phaſeolus. *Sloan. jam.* 1. 182. 15. *t.* 114. *f.* 4.
Leaves ternate; raceme erect; flowers pendulous.]

DESCRIPTIONS, &c.

1. This riſes with a twining herbaceous ſtalk to the height of four or five feet, in the ſame manner as the Kidney-bean, and requires the like ſupport; for in the places where it grows naturally, it twiſts itſelf about the neighbouring plants; the leaves are winged, compoſed of two or three pair of leaflets, terminated by an odd one; theſe are of a beautiful green, and are placed alternate on the ſtalks; from the appendages of the leaves come out the peduncles; each of theſe is encompaſſed by two very fine leaves about the middle, where they are bent, ſuſtaining a very large, gaping, beautiful flower, whoſe bottom part ſeems as if growing to the top. The flowers have a green membranaceous calyx; the corolla is of a blue colour, and ſtains paper, like Indigo, but as a dye it is not permanent. It is a native of the Eaſt Indies and Cochinchina, but the ſeeds were firſt brought to Europe from Ternate, one of the Molucca iſlands, and this induced Tournefort to give the name of Ternatea to this genus. There is a variety with white flowers, and another with blue flowers, which are very double.

[This production of double flowers is a ſingularity in the leguminous claſs of plants.

The legume is narrow, elongated, a finger's length and more, lenticular-compreſſed, without knots or riſings, ſubpubeſcent, pale, terminated by the longiſh, ſubulate ſtyle, many-celled, two-valved: partitions thin. Seeds ſolitary, ſeven to twelve, ovate-kidney-form, cut off at one end, compreſſed a little, ſomewhat gibboſe on both ſides, ſmooth, cheſtnut-brown[a].—Cultivated 1739, by Mr. Miller[b]. Breynius received the ſeeds from the Eaſt Indies in 1667.]

2. This has a twining ſtem like the foregoing, which riſes five or ſix feet high, having at each joint one ternate leaf on a long petiole. The flowers come out ſingly from the axils on long peduncles, encompaſſed about the middle with two ſmall oval leaves; the flowers are very large, the ſtandard being much broader than that of the firſt ſort, and the two wings are larger; the flowers are of a fine blue colour, and make a fine appearance. They appear in july, and in warm ſeaſons the ſeeds will ripen in autumn, ſoon after which the plants decay. Native of Braſil.

There is one with a double flower of this ſort, which I raiſed in the Chelſea garden ſome years paſt, from ſeeds ſent me from India; but the plants did not produce ſeeds here, and being annual, the ſort was loſt. [The leaves of the figure in hort. malab. are obovate.

3. Stem herbaceous, filiform, ſubdivided, ſcandent and twining, round, ſtriated, pubeſcent. Petioles of the leaves longiſh, pubeſcent. Leaflets oblong, acuminate, with a blunt tip, entire, nerved, ſmooth, ſometimes pubeſcent, on ſhort petiolules. Peduncles longer than the petioles, erect, angular, ſtriated, hirſute, bearing three or four whitiſh flowers on pedicels. Perianth double; outer two-leaved; leaflets ovate-acute, concave, keeled, pubeſcent; inner tubular, two-lipped, the two upper teeth ſhorter, approximating, the three lower longer, acute, the middle one three times as long as the others. Corolla reſupinate: ſtandard blue, with oblique purple ſtreaks, at the back part duſky, and tomentoſe. Seeds ſmooth, and of a gray colour[c].

The two membranaceous bractes are ſmaller and leſs conſpicuous in this ſpecies. Leaflets in appearance ſmooth, but roughiſh to the touch. Two flowers uſually come out together. Legumes leſs ſwelling than in the firſt ſpecies. Seeds brown, with duſky red ſpots[d].

This ſpecies being tender, and flowering here with difficulty, the flowers frequently come out ſingly in our ſtoves; which accounts for the difference between Mr. Miller's deſcription and the Linnean character. Dillenius alſo obſerves that the flowers are very apt to fall off. Native of Virginia; alſo of Jamaica, and other iſlands of the Weſt Indies.] Mr. Miller ſays, that the ſeeds were ſent him from the Bahama iſlands.—[Cultivated 1732 by James Sherard, M. D.[e]]

4. The ſeeds of the fourth ſort were ſent me from Carolina, where the plants grow naturally. This riſes with a twining weak ſtalk about five feet high, having trifoliate leaves like the former, whoſe leaflets are narrower, and of a grayiſh colour on their under ſide; the flowers come out by pairs; their calyxes are cylindric. The flowers are ſmall, and of a pale blue colour within, but of a dirty white

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[a] Gærtner.
[b] Hort. kew.
[c] Swartz.
[d] Dillenius.
[e] Hort. kew.

on the outſide. This flowers in auguſt, but rarely ripens any ſeeds in England.

[5. Perianth four-toothed, the upper and lower ſegment larger; it is covered with two very ſmall, deciduous bractes. Corolla five-petalled, all the petals oblong and narrow, the ſtandard broader than the reſt, and incumbent. Legume cylindric. Seeds roundiſh. Racemes with two flowers or more[f].

Native of Jamaica, chiefly in the lower hills. It is eaſily diſtinguiſhed by its long reddiſh flowers, milky branches, and ſmooth leaves. It is a weakly climber, and raiſes itſelf by the help of the neighbouring buſhes, to the height of eight or nine feet[g].]

PROPAGATION AND CULTURE.

The ſeeds of theſe plants muſt be ſown upon a good hot-bed early in the ſpring; and when the plants are two inches high, they ſhould be carefully taken up, and each planted in a ſmall pot filled with light freſh earth, and plunged into a hot-bed of tanners bark, obſerving to ſhade them till they have taken freſh root, and refreſh them with water as they may require it. After they are well rooted in the pots, they muſt have air every day in proportion to the warmth of the ſeaſon, to prevent their drawing up weak; their waterings ſhould be repeated two or three times a week, but they ſhould not have too much at each time. As theſe plants have climbing ſtalks, they will ſoon grow too tall to remain under common frames, therefore they muſt then be removed into the ſtove, and plunged into the bark-bed; but if their roots have filled the pots, they ſhould be removed into larger, and afterward they muſt be treated in the ſame manner as other plants from the ſame countries.

All theſe ſorts are annual with us in England, ſo that unleſs the ſeeds ripen, the ſpecies are loſt; and as the two ſorts with double flowers have not formed any pods in this country, ſo far as I have been able to learn, therefore the ſeeds of theſe muſt be procured from the countries where they naturally grow. Indeed theſe are ſuppoſed to be only varieties, which accidentally ariſe from the ſingle. If this be true, I cannot account for the ſucceſs of thoſe plants which grew at Chelſea, for they were all of the ſame double kind, without the leaſt variation; and this was not from a ſingle experiment, but in three different years when I received the ſeeds, the plants did all of them produce double flowers.

[**Clitoria.** See *Galega.*

Clitorius. See *Clitoria.*

Clivers. See *Galium Aparine.*

Clompanus. See *Sterculia.*

Cloud-Berry. See *Rubus.*

Clove. See *Caryophyllus.*

Clove-Pink. See *Dianthus.*

Clover. See *Trifolium.*

Clown's All-heal. See *Stachys.*

Club-Moss. See *Lycopodium.*

Club-Rush. See *Scirpus.*]

CLUSIA. (*In memory of Carolus Cluſius* (*Charles de L'Ecluſe*) *an eminent French Botaniſt.*)

Lin. gen. n. 1154. *Reich.* 1263. *Schreb.* 1584. *Juſſ.* 256. *Plum.* 10. *Jacqu. amer.* 270.

Claſſ. 23. 1. Polygamia Monoecia.

Nat. order of *Guttiferæ*. Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* four, five, or ſix-leaved, imbricate; *leaflets* concave, permanent, the interior ones gradually ſmaller.

Cor. *Petals* four, five, or ſix, roundiſh, ſpreading, concave, large.

Stam. *Filaments* many, ſimple, ſhorter than the corolla. *Anthers* ſimple, growing to the ſide of the tip.

Pist. *Germ* ovate-oblong. *Style* none. *Stigma* ſtarred, flat, obtuſe, permanent.

Per. *Capſule* ovate, marked with furrows, celled, the valves burſting in a radiate manner.

Seeds numerous, ovate, covered with pulp, affixed to a columnar angulated receptacle.

Obs. *The number in the fruit differs from four to twelve, according to the proportion obſerved in the ſtigma, valves, cells, &c.*

Some of the flowers are ſterile with reſpect to the male organs, and others with reſpect to the female ones.

In the female flowers a nectary is formed by the coalition of the anthers, including the germ. R.

ESSENTIAL CHARACTER.

Male. *Cal.* four or ſix-leaved; leaflets oppoſite, imbricate. *Cor.* four or ſix-petalled. *Stam.* numerous.

Fem. *Cal.* and *Cor.* as in the males. *Nect.* formed by the coalition of the anthers, including the germ. *Capſ.* five-celled, five-valved, ſtuffed with pulp.

SPECIES.

[1. Cluſia roſea. *Roſe-coloured Balſam-tree.*
Lin. ſpec. 1495. *Reich.* 4. 328. *Jacqu. amer.* 270. *pict.* 131. *Pluk. alm. t.* 157. *f.* 2. *Cateſb. car.* 2. *t.* 99. (Cenchramidia.)
Leaves veinleſs; corollas ſix-petalled.

2. Cluſia alba. *White-flowered Balſam-tree.*
Lin. ſpec. 1495. *Reich.* 4. 328. *Jacqu. amer.* 271. *t.* 166. *pict.* 131. *t.* 250. *Plum. gen.* 22. *ic.* 87. *f.* 1.
Leaves veinleſs; corollas five-petalled.]

3. Cluſia flava. *Yellow-flowered Balſam-tree.*
Lin. ſpec. 1495. *Reich.* 4. 328. *Jacqu. amer.* 272. *t.* 167. *pict.* 132. *t.* 251. *Brown. jam.* 236. *Sloan. jam.* 2. 91. *t.* 200. *f.* 1. (Terebinthus). *Raii dendr.* 51. *n.* 4.
Leaves veinleſs; corollas four-petalled.

4. Cluſia venoſa. *Vein-leaved Balſam-tree.*
Lin. ſpec. 1495. *Reich.* 4. 329. *Jacqu. amer.* 273. *pict.* 132. *Plum. gen.* 21. *ic.* 87. *f.* 2.
Leaves veined.

[5. Cluſia pedicellata.
Forſt. flor. auſtr. n. 390.
Leaves oppoſite, obovate, quite entire, veined; cymes axillary; flowers four-petalled.

6. Cluſia ſeſſilis.
Forſt. flor. auſtr. n. 391.
Leaves oppoſite, obovate and elliptic, quite entire, veined; flowers axillary, ſolitary, ſubſeſſile, four-petalled.

DESCRIPTIONS, &c.

Theſe are trees, abounding in a tenacious, glutinous juice. Peduncles ſometimes axillary, but commonly terminating, ſuſtaining one, two or three flowers; on bracted pedicels.

1. Height from twenty to thirty feet. Much reſembling the next ſpecies, but the leaves ſometimes emarginate, and more roundiſh. Flowers large, roſe-coloured and very handſome, but without ſcent. Stigmas, cells and valves ſeven or nine. The whole ſurface of the genitals, and eſpecially of the nectary, is covered with a gelatinous gluten. Fruit green[h]: the ſize of a middling apple, with eight lines running like meridians on a globe, from the ſtalk to the crown of it. When the fruit becomes ripe, it opens at theſe lines, and divides into eight parts, diſcloſing many mucilaginous ſcarlet ſeeds, reſembling thoſe of a Pomgranate; the mucilage being waſhed off, the ſeeds appear white and hard, and contain a kernel: they are contained in the hollow furrows of an octagonal core. The whole tree is exceedingly beautiful, and the ſtructure of the fruit is a moſt exquiſite piece of mechaniſm.

Native of the Bahama iſlands, St. Domingo, and other American iſlands between the Tropicks, on rocks, and frequently on the trunks and limbs of trees, occaſioned by birds ſcattering or voiding the ſeeds, which being glutinous like thoſe of Miſleto, take root in the ſame manner; but the roots, not finding ſufficient nutriment, ſpread on the ſurface of the tree till they find a decayed hole or other lodgment, wherein is ſome ſmall portion of ſoil: the fertility of this being exhauſted, a root is diſcharged out of the hole till it reaches the ground, though at forty feet diſtance; here again it fixes itſelf, and becomes a much larger tree. The reſin is uſed to cure ſores in horſes, and inſtead of tallow for boats [i].

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[f] Linn. ſpec.

[g] Browne.

[h] Jacquin.

Cateſby aſſigns the number eight to the diviſions of the capſule, but Jacquin affirms that they vary from ſeven to nine. Cateſby's figure is a very good one in all reſpects, except that the corolla is repreſented too flat.

2. Height thirty feet, an elegant tree, and paraſitical on other vaſt trees, like the foregoing: the trunk is frequently a foot in diameter, and ſupports a ſpreading head. The whole abounds in a very tenacious, balſamic juice, of a green colour, but becoming of a browniſh red on being expoſed to the air. Leaves obovate, quite entire, obtuſe, ſhining, coriaceous, firm, marked with obliquely tranſverſe parallel nerves, without any connecting veins, on ſhort petioles, oppoſite, placed chiefly at the extremities of the ſmaller branches. Peduncles ſhort, thick, commonly three-flowered, and terminating. Flowers inelegant, and without ſcent, white, all hermaphrodite, but with the anthers more or leſs polliniferous. Fruits when ripe, ſcarlet. Seeds white, involved in a ſcarlet pulp; the birds are very fond of them, and when the capſules burſt open, hang over them on the wing, and pluck out the ſeeds with the pulp adhering.

It is common in the woods of Martinico, where it is called *Aralie*. The Caribbs uſe the juice for paying their boats [k].]

3. The third ſort is pretty common in the Britiſh Iſlands of America, where the trees grow to the height of twenty feet, and ſhoot out many branches on every ſide; with thick, round, ſucculent leaves, placed oppoſite. The flowers are produced at the ends of the branches, each having a thick ſucculent cover: theſe are of different colours in different plants, ſome being red, others yellow, ſome white, and ſome green. After the flowers are paſt, they are ſucceeded by oval fruit, which are alſo of different colours in different plants.

[Browne ſays, that in Jamaica it riſes only to the height of fourteen or fifteen feet, that it grows moſtly on the lower hills, delighting in dry ground, but thriving in moſt light ſoils.

According to Jacquin, it much reſembles the foregoing ſort, the flowers are yellow and inodorous, and ſeem to be ſome female, others hermaphrodite. Browne deſcribes the perianth as conſiſting of ſix or eight roundiſh ſcales, in four rows; the corolla of four thick, oblong-ovate, ſcrew-ſhaped petals; the filaments two, ſometimes three, at each of the interſtices between the petals; the germ thick, roundiſh, obtuſely quadrangular, with twelve diſtinct ſtigmas in a circle round the top of it; the capſule thick, roundiſh, many-valved, twelve-celled, containing many roundiſh ſeeds in a ſaffron-coloured pulp.

Wherever the trunk or larger branches are wounded, they throw out a thick reſinous gum, which is ſometimes uſed as a vulnerary among the inhabitants of Jamaica; but it has not any extraordinary ſmell, or pungent taſte.]

Cultivated by Mr. Miller in 1759. He informs us that there were ſome fine plants in the garden of Mr. Parker, near Croydon in Surry, which were brought over in tubs from Barbadoes: and that there are three varieties differing in the ſize and colour of the flowers and fruit.

4. This tree riſes to the height of twenty (or thirty) feet; it has very large oval ſpear-ſhaped leaves, ending in points, placed alternate on the branches, and having ſeveral ribs, which go off from the midrib alternate, riſing upward to the ſide of the leaves; and alſo a great number of ſmall veins, running horizontally between theſe ribs. The borders of the leaves are ſerrate, and their under ſides are of a ſhining brown colour. The branches are covered with a woolly down, and the flowers are produced in looſe ſpikes at the end of the ſhoots; theſe are ſmaller than thoſe of the foregoing, and are of a Roſe colour.

[According to Jacquin, the corolla is white, and an inch and an half in diameter. The leaves are four inches long. It is a native of the moiſt mountainous woods of Martinico, where it has the name of *Paletuvier de montagne*.] Mr. Miller ſays, it was diſcovered by Dr. Houſtoun at Campeachy, whence he ſent dried ſpecimens and ſeeds.

[5. Native of New Caledonia. Found ſeptember the 9th, 1774.

6. Native of Tongatabu. Found october the 8th, 1774 [l].]

PROPAGATION AND CULTURE.

The beſt method of having theſe plants, is to procure them from the Weſt Indies, to be brought over in tubs; for the ſeeds ſeldom ſucceed; and the young plants grow ſo ſlowly, as not to make any figure for ſome years. In bringing them over, great care ſhould be taken, that they do not receive much wet, for having very ſucculent ſtems, moiſture will cauſe them to rot.

The plants are tender, and muſt be conſtantly kept in the ſtove, otherwiſe they will not live through the winter in England; they muſt alſo be watered very ſparingly, eſpecially in winter, for they naturally grow in thoſe parts of the iſlands, where it ſeldom rains.

They may be propagated by cuttings, which muſt be laid to dry when they are cut off from the plants for a fortnight or three weeks, that the wounded part may be healed over, otherwiſe they will rot. When the cuttings are planted, the pots ſhould be plunged into a hot-bed of tanners bark, and now and then gently refreſhed with water: the beſt time for planting theſe cuttings is in june or july, that they may be well rooted before the cold weather comes on in autumn. In winter theſe plants may be placed upon ſtands in the dry ſtove; but if in ſummer they are plunged into the tan-bed, they will make great progreſs, and their leaves will be large, in which conſiſts the great beauty of theſe plants.

[Clusia. See *Decumaria*.

Clutia. See *Cluytia*.

——— androgyna. See *Andrachne*.]

CLUYTIA. (*Given by Boerhaave, in memory of Augerius Clutius* (*Dirk Autgers Cluyt*) *Profeſſor of Botany at Leyden.*)

Lin. gen. n. 1140. *Reich.* 1247. *Schreb.* 1526. *Gærtn. t.* 107. *Juſſ.* 387. *Boerh. p.* 260.

Claſſ. 22. 14. Dioecia Gynandria.

Nat. order of *Tricoccæ*. *Euphorbiæ* Juſſ.

GENERIC CHARACTER.

* Male.

Cal. *Perianth* five-leaved, ſize of the corolla: *leaflets* ovate, obtuſe, concave, ſpreading.

Cor. *Petals* five, ſpreading very much, cordate; *claws* flat, ſhorter than the calyx.

Nectaries exterior five, three-parted, oblong, ſpreading, length of the claws of the petals, placed in a circle within the petals.

Nectaries interior five, glandiform, ſmall, melliferous at the tip.

Stam. *Filaments* five, placed on the middle of the ſtyle, remote from the corolla, ſpreading horizontally. *Anthers* roundiſh, verſatile.

Pist. *Germ* none. *Style* cylindric, truncate, very long, bearing the ſtamens on it's middle.

* Female.

Cal. *Perianth* as in the male, permanent.

Cor. *Petals* as in the male, permanent.

Nectaries exterior five, twin, roundiſh, of the ſame ſize and ſituation as in the male.

Nectaries interior none.

Pist. *Germ* roundiſh. *Styles* three, bifid, reflex, length of the corolla. *Stigmas* obtuſe.

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[i] Cateſby.

[k] Jacquin.

[l] Forſter.

PER. *Capſule* globular, ſix-furrowed, rough, three-celled.
SEEDS ſolitary, roundiſh, even, appendiculated at the tip.
OBS. *There are ſpecies which are decandrous, and androgynous.* R.

ESSENTIAL CHARACTER.

Cal. five-leaved. *Cor.* five-petalled.
FEM. *Styles* three. *Capſ.* three-celled. *Seed* one.

SPECIES.

1. Cluytia alaternoides. *Narrow-leaved Clutia.*
Lin. ſpec. 1475. *Reich.* 4. 286. *hort. cliff.* 400. 444. (Croton).
Tithymalus. *Pluk. phyt.* 230. *f.* 1.
Chamælea. *Burm. afr. t.* 43. *f.* 1, 3.
Alaternoides. *Comm. hort.* 2. *t.* 2.
Leaves ſubſeſſile, linear-lanceolate; flowers ſolitary, erect.

[2. Cluytia polygonoides.
Lin. ſpec. 1475. *Reich.* 4. 286.
Chamælea. *Burm. afr. t.* 43. *f.* 3.
Leaves lanceolate; flowers axillary, very many.]

3. Cluytia pulchella. *Broad-leaved Clutia.*
Lin. ſpec. 1475. *Reich.* 4. 287. *Hort. cliff.* 500. 431. *Gærtn. fruct.* 2. 117. *Boerh. lugdb.* 2. 260. *Mill. illuſtr. ic. Comm. hort.* 1. *t.* 91.
Leaves ovate, quite entire; flowers lateral.

[4. Cluytia hirta.
Lin. ſyſt. 897. *ſuppl.* 432. *Vahl ſymb.* 2. 101.
Leaves wedge-ſhaped, ſmooth, flowers lateral, glomerate, hirſute.

5. Cluytia tomentoſa.
Lin. ſyſt. 897. *Reich.* 4. 287. *mant.* 299.
Leaves elliptic, tomentoſe on both ſides.

6. Cluytia retuſa.
Lin. ſpec. 1475. *Reich.* 4. 287. *fl. zeyl. n.* 367. *Burm. ind.* 217. *zeyl.* 29. *Bout. jav.* 103. *Rheed. mal.* 2. 23. *t.* 18. *Raii hiſt.* 1623.
Leaves oval, retuſe, flowers racemed, axillary.]

7. Cluytia Eluteria. *Maritime Clutia,* or *Sea-ſide Balſam.*
Lin. ſpec. 1476. *Reich.* 4. 287. *amœn.* 5. 411. *hort. cliff.* 486. (Elutheria). *Woodv. med. bot. app.* 2. *t.* 211.
Croton. *Brown. jam.* 347. *n.* 4?
C. Eluteria. *Swartz prodr.* 100. *obſ.* 381.
Ricinus. *Pluk. alm. t.* 220. *f.* 5. *Seba theſ.* 1. *t.* 35. *f.* 3. *Burm. ind.* 217.
Leaves cordate-lanceolate.

[8. Cluytia ſtipularis.
Lin. ſyſt. 897. *Reich.* 4. 288. *mant.* 127.
Leaves oval, tomentoſe underneath.

9. Cluytia acuminata.
Lin. ſyſt. 897. *ſuppl.* 432.
Herbaceous; leaves ovate, ſmooth, obtuſe, with a point; flowers axillary, ſolitary.

10. Cluytia lanceolata.
Vahl ſymb. 2. 101. *Forſk. ægypt.* 170.
Leaves elliptic-lanceolate, flowers lateral tomentoſe.]

DESCRIPTIONS, &c.

1. Stem ſhrubby, ſix or eight feet high, putting out many ſide branches which grow erect. Leaves of a grayiſh colour, and entire. The flowers come out from the joints, at the ſetting on of the leaves, towards the upper part of the branches; they are ſmall, and of a greeniſh white, appear from june to auguſt, and make no great appearance.—[Leaves rugged about the edge. Flowers erect, according to Linneus. Cultivated 1692, in the royal garden at Hampton Court[a].]—Mr. Miller informs us, that plants with male flowers had been long in the Engliſh gardens, but that thoſe which bear female flowers were introduced afterwards.

[2. Leaves alternate, linear-lanceolate, gradually narrowed to the end, mucronate, quite entire, even. Flowers uſually two together, pendulous, ſmall. Native of the Cape of Good Hope[b].]

3. This riſes about the ſame height with the firſt, but has a ſtronger ſtem. The leaves are much larger, ſea-green, and on petioles an inch long. The flowers are like thoſe of the firſt ſort in ſhape and colour, but thoſe on the male plants are ſmaller, and grow cloſer together than thoſe of the female, but both are ſuſtained upon ſhort foot-ſtalks. Theſe flowers appear at the ſame time as thoſe of the firſt ſort, and the ſeeds ripen in autumn. I have raiſed ſeveral of theſe plants from ſeeds, which have all proved female, the ſame as the parent plant.

[Capſule, as deſcribed by Gærtner, pedicelled or ſeſſile, globular, rugged, with raiſed dots, with three grooves and tricoccous; the cocci or component parts are of the ſubſtance of paper, gibbous on one ſide, angular on the other, ſemibivalve, the back of the valves ſeparating ſpontaneouſly from the partitions, which are membranaceous, permanent in the axis of the fruit, dark cheſtnut-coloured, ſhining, ſerrulate on the edge. Seeds ovate, dark cheſtnut-coloured, with a two-lobed white umbilical gland immediately below the tip on the inſide.

Cultivated 1739, by Mr. Miller:] who ſays that there were no plants in England with male flowers, till he received one from Dr. Job Baſter of Zirkzee in Holland.

[4. This is a very branching ſhrub. Branches round, ſmooth, tubercled with fallen leaves, uſually ſcattered, but ſometimes coming out three together. Leaves petioled, quite entire, netted-veined, oblong, a little narrowed towards the baſe. The flowers come out towards the ends of the branches and branchlets, and are ſubſeſſile. Calyx hirſute on both ſides, eſpecially without, aſh-coloured, with ſhort hairs; leaflets roundiſh, concave. Petals oblong, minute, ſmooth. Style trifid, involved in aſh-coloured hairs[c].

Found at the Cape of Good Hope by Thunberg.

5. A ſhrub, three feet in height, very branching, erect, tubercled with the ſcars of fallen leaves; branches round, pubeſcent. Leaves crowded, ſeſſile, ſomewhat acute, the ſize of Thyme leaves. Flowers lateral, ſolitary, ſeſſile, longer than the leaves, white: calyx five-toothed, tomentoſe on the outſide. Petals oval, the length of the calyx. Stigma bearded.—Sandy ſhores of the Cape; flowering in may.

6. Leaves on ſhort petioles, alternate, obtuſe or retuſe, the ſize of thoſe of Beech, the edge reflected, with prominent tranſverſe veins or nerves underneath. Racemes axillary, very ſimple, from the ends of the branches divided into three or four alternate peduncles; all filiform, longer than the leaves. Leaflets of the calyx acute. Petals very ſmall, three-toothed. No nectaries, but a ring ſurrounding the receptacle. In the middle a column, with five horizontal filaments, and verſatile anthers. Rheede ſays that the fruit is a berry[d]. Native of the Eaſt Indies.

7. This is a tree with round branches. Leaves alternate, petioled, ovate or cordate-lanceolate, blunt, quite entire, with orbicular ſcales on both ſurfaces. Racemes branched, axillary, and terminating. The male flowers have ten ſubulate ſtamens, the length of the corolla; with erect compreſſed anthers. Petals oblong, obtuſe, ſeſſile, ſpreading. Other flowers have twelve ſtamens, with a piſtil perfectly like that of an Euphorbia[e].]

According to Miller, it riſes with an upright ſhrubby ſtalk, not more than three or four feet high in England; but in places where it grows naturally, it riſes upwards of twenty feet in height, with the branches forming a large ſpreading head. The leaves are ſhaped like thoſe of the Black Poplar.

[On breaking the more tender branches, a large drop of a thick balſamic liquor oozes from the wound, whence it has the appellation of Balſam-tree. It grows frequently to the height of four or five feet. The leaves and tender tops are ſaid to heal ſores, and are frequently uſed in baths and fomentations[f].

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[a] Hort. kew.
[b] Linn. ſpec.
[c] Vahl.
[d] Linn. zeyl.
[e] Linn. amoen. & cliff.
[f] Browne.

Swartz, who makes this a ſpecies of Croton, doubts whether the fourth Croton of Browne be the ſame plant.

Native of both Indies, and cultivated by Mr. Miller.

The *Cortex Caſcarillæ* is ſuppoſed to be the produce of this tree. At the end of the laſt century it was recommended by Stiſſer as a powerful diuretic and carminative, and he uſed it with ſucceſs in calculous, aſthmatic, phthiſical, ſcorbutic, and arthritic complaints. Since that it has been uſed in Germany for the Peruvian bark in intermittent fevers: and the German phyſicians have given it much credit as an aſtringent, and have accordingly uſed it in hæmorrhages and various alvine fluxes[g].

8. Branches flexuoſe, tomentoſe. Leaves ovate or oval, rather large, quite entire, on ſhort petioles. Stipules ovate, acute, the length of the petioles. Flowers axillary, ſubſeſſile, not longer than the ſtipules, dark purple. Calyx one-leafed, bell-form at the baſe, five-parted, acute, permanent. Petals roundiſh, very ſhort, inſerted into the ſinuſes of the calyx. Style columnar, ſcarcely trifid at the end.—Native of the Eaſt Indies[h].

9. Native of the Cape. It reſembles *Andrachne Telephoides*[i].

10. This bears a great affinity to *C. pulchella*, and ſhould be placed next before it. *C. lanceolata* however differs from that, in having the branches purple, and aſh-coloured-villoſe at top. Leaves broad-lanceolate, two inches long and more, without any dots beneath, few only above, and they viſible only with a magnifier. Calyxes villoſe-tomentoſe. Capſules not dotted. Male flowers copious, aggregate, ſubpeduncled, in the axils. Female flowers ſubſolitary, peduncled. Corolla, ſtamens and piſtil as in *C. pulchella*[k].]

PROPAGATION AND CULTURE.

1. 3. Theſe plants are eaſily propagated by cuttings during any of the ſummer months: if the cuttings are planted in ſmall pots, and plunged into a very moderate hot-bed, and ſhaded from the heat of the ſun in the middle of the day, they will ſoon take root, and ſhould then be inured to the open air, otherwiſe they will draw up very weak: afterward theſe plants may be each put into a ſeparate ſmall pot, and placed in a ſheltered ſituation, where they may remain until the middle of october, or later, if the weather continues mild, when they ſhould be removed into the green-houſe, and placed where they may have the free air in mild weather, for they only require to be protected from froſt, therefore require no warmth in winter; but if the green-houſe is ſhut up too cloſe, or the plants are much ſhaded by others, the tender ſhoots are ſubject to grow mouldy, which deſtroys more of theſe plants than the cold. In the ſummer they muſt be placed abroad in a ſheltered ſituation, with other hardy exotic plants.

As theſe plants are always green, they look well in the green-houſe during the winter ſeaſon; and in ſummer, when they are placed in the open air with other exotic plants, they make a pretty variety.

7. This plant will live through the winter in an airy glaſs-caſe, without artificial heat; but in that ſituation ſhould have very little water, for the plants abounding with a milky juice like the Euphorbia, muſt at no ſeaſon of the year have too much wet. If theſe plants, when young, are placed in a very moderate warmth in winter, it will greatly forward their growth, but they muſt not have too much heat, for that will force them too much; and when the plants have obtained ſtrength, they may be treated more hardily. This ſort may be propagated by cuttings during the ſummer ſeaſon; but the cuttings ſhould be laid in a dry place for a few days, when they are taken from the old plants, that their wounded parts may dry and be healed over before they are planted. Theſe muſt be planted in ſmall pots filled with light ſandy earth, and plunged into a moderate hot-bed of tanners bark; and if the ſeaſon is very warm, the glaſſes ſhould be ſhaded in the heat of the day, and raiſed up to admit freſh air to the cuttings every day; theſe muſt be ſparingly watered. When they have taken root, and begin to ſhoot, they muſt have a greater ſhare of air, and by degrees be inured to the open air; and when their roots have filled the pots, they ſhould be carefully parted, and each planted in a ſeparate pot of the ſame light ſandy earth; then they ſhould be placed on the back part of the ſtove, behind the other plants, where they may be ſcreened from the ſun till they have taken freſh root, after which they may be brought forward, and expoſed gradually to the open air. In the ſummer they ſhould have free air conſtantly in warm weather, but they muſt be ſcreened from heavy rain; and in winter placed in an airy glaſs-caſe, where they may enjoy the ſun, and during that ſeaſon have very little wet.

Clymenum. See *Lathyrus* and *Vicia*.

Clypearia. See *Adenanthera*.

CLYPEOLA. (*Dimin. from Clypeus, a little ſhield: ſo named from the form of the ſilicle.*)

Lin. gen. n. 807. *Reich.* 870. *Schreb.* 1082. *Gærtn. t.*141. *Juſſ.* 240. Jonthlaſpi. *Tourn.* 99.

Claſſ. 15. 1. Tetradynamia Siliculoſa.

Nat. order of *Siliquoſæ*; *Cruciferæ* Juſſ. or *Cruciformes*.

GENERIC CHARACTER.

Cal. *Perianth* four-leaved; *leaflets* ovate-oblong, permanent.

Cor. four-petalled, cruciform. *Petals* oblong, entire; *claws* rather longer than the calyx.

Stam. *Filaments* ſix, ſhorter than the corolla: the two oppoſite ones ſtill ſhorter. *Anthers* ſimple.

Pist. *Germ* roundiſh, compreſſed. *Style* ſimple. *Stigma* obtuſe.

Per. *Silicle* orbiculate, emarginate; flat-compreſſed, erect, deciduous, bivalve. *Valves* orbiculate.

Seeds orbiculate, in the centre of the pericarp.

Obs. Cl. Jonthlaſpi *has the ſtamens marked with a toothlet, above the baſe, as in* Alyſſum. *R.*

ESSENTIAL CHARACTER.

Silicle emarginate, orbiculate, compreſſed, flat, deciduous.

SPECIES.

1. Clypeola Jonthlaſpi. *Annual Treacle-Muſtard, or Buckler-Muſtard.*

Lin. ſpec. 910. *ſyſt.* 591. *Reich.* 3. 238. *hort. cliff.* 329. *upſ.* 185. *mant.* 426. *Lamarck encycl.* 2. 55. *Cavan. hiſp.* 22. *n.* 36. *t.* 34. *f.* 2. *Gærtn. fruct.* 2. 183. *Villars dauph.* 3. 295.

Thlaſpi clypeatum, ſerpilli folio. *Bauh. pin.* 107. *Lob. adv.* 74. *ic.* 215.

Jonthlaſpi minimum ſpicatum lunatum. *Col. ecphr.* 1. 281. *t.* 284.

Annual. Silicles orbiculate one-celled one-ſeeded.

[2. Clypeola tomentoſa. *Hoary Treacle-Muſtard.*

Lin. ſyſt. 591. *Reich.* 3. 238. *mant.* 92.

Alyſſum orientale. *Ard. ſpec.* 2. 32. *t.* 15. *f.* 1.

A. creticum ſaxatile, ſerpilli fol. candidiſſimo, capſ. orbic. *Tourn. cor.* 15.

Perennial. Silicles orbiculate two-celled; two-ſeeded leaves ſubtomentoſe.]

3. Clypeola maritima. *Sea Treacle-Muſtard, or Churles Muſtard*, Ger.

Lin. ſpec. 910. *ſyſt.* 591. *Reich.* 3. 239. *mant.* 426. *Gmel. ſib.* 3. 252. *n.* 6. *Villars dauph.* 3. 296.

Alyſſum caulibus diffuſis, fol. linearibus. *Ger. prov.* 350.

Thlaſpi montanum perenne, fl. albo. *Barr. ic.* 844.

T. Alyſſon dictum marit. *Bauh. pin.* 107.

T. narbonenſe, centunculi anguſto fol. *Tabern. ic.* 461. *Lob. ic.* 75.

T. narb. Lobelii. *Ger. emac.* 267. *f.* 3. *Raii hiſt.* 829.

Perennial; ſilicles two-celled ovate two-ſeeded.

DESCRIPTIONS, &c.

1. It is a low annual plant, ſeldom more than four inches high: ſtems ſlender, [hardiſh upright, branched at bottom, tinged with red, covered with

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[g] Woodville.
[h] Linn. mant.
[i] Linn. ſuppl.
[k] Vahl.

ſhort whitiſh hairs. Leaves ſpatulate, alternate, ſeſſile, glaucous, with minute ſtars of hairs all over the ſurface. Flowers in terminating ſpikes, and very minute. Corolla yellow, the ſize of the calyx. Style ſcarcely viſible with a magnifying glaſs[a]. Silicle ſuborbiculate, very ſlightly emarginate, leafy-compreſſed, pubeſcent, ſurrounded with a paler or whitiſh, very finely ciliate edge, one-celled, not opening ſpontaneouſly, but eaſily diviſible into two very ſlender membranaceous valves. Seed ſingle, elliptic, compreſſed, ſmooth, tawny-coloured[b].

Villars doubts whether this plant be diſtinct from *Alyſſum minimum* of Linneus.

Native of the South of France, Spain, and Italy. Flowering there from march to may; but with us from may to july. Cultivated 1739, by Mr. Miller[c].

2. Root perennial, woody, branched. Stems ſhrubby, diffuſed, leafy at the end. Leaves hirſutely hoary; the lower ovate-oblong, ſinuate, three inches long, and half an inch broad; the ſtem-leaves alternate, ſeſſile, linear-lanceolate, entire or toothletted. Flowers terminating and axillary, at firſt in a ſort of umbel, but afterwards panicled; calyx very ſmall, hairy on the outſide; petals yellow, emarginate, longer than the calyx. Silicles obcordate, alternate, pedicelled, two-celled with one ſeed in each cell; diſpoſed in a ſpike from two to three inches in length[d].

Firſt obſerved in the Levant by Tournefort.—Arduini had the ſeeds in 1755 from Leonard Seller, who cultivated this plant many years in his garden at Venice. He and Lamarck agree with Tournefort in referring this and the next ſpecies to the genus *Alyſſum*, and to make amends they tranſport the *Peltaria* to this genus. In this natural claſs, the diviſion of the genera is frequently arbitrary, and there would be no end to removals.

3. Stems much branching, diffuſed, evergreen. Leaves linear-lanceolate, whitiſh, not ſtiff. Racemes ſtriated. Calyx deciduous. Petals white, obovate, the claws and filaments dark purple. Anthers yellow. Filaments toothleſs; in which circumſtance alone it differs from the *Alyſſums*, with which it might very well be aſſociated[e].

According to Ray; root perennial. Branches ſtriated. Leaves an inch in length, taſting like Creſs. Corollas white, darker in the middle, reſembling thoſe of Water-Creſs.—It has the appearance of Wall-flower, but the branches are weaker, and both they and the leaves are much ſmaller.

Native of the South of France, Spain and Italy; common on the coaſt of the Mediterranean. Cultivated by Mr. Miller in 1759.]

PROPAGATION AND CULTURE.

Theſe are low plants, that have little beauty, and are preſerved chiefly in botanic gardens. The firſt is propagated by ſeeds, ſown on a border of light earth, where they are to remain. If ſown in autumn, the plants will grow larger, flower earlier, and ripen ſeeds with more certainty. If theſe be permitted to ſcatter, the plants will thrive without farther care.

3. The third ſhould be ſown upon a warm border in a dry ſoil, and does not bear tranſplanting well.

[CLYPEOLA. See *Alyſſum*, *Biſcutella*, *Peltaria*.]

CNEŌRUM. (*Cneorum of Pliny.* Κνεωρον, *of Hippocrates and Theophraſtus. Derivation unknown.*)

Lin. gen. n. 48. *Reich.* 52. *Schreb.* 65. *Juſſ.* 369.

Chamælea. *Tourn.* 421. *Gærtn.* 70.

Claſſ. 3. 1. Triandria Monogynia.

Natural order of *Tricoccæ*. *Terebintaceæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* very ſmall, three-toothed, permanent.

COR. *Petals* three, oblong, lanceolate-linear, concave, erect, equal, deciduous.

STAM. *Filaments* three, ſubulate, ſhorter than the corolla. *Anthers* ſmall.

PIST. *Germ* obtuſe, triangular. *Style* erect, firm, length of the ſtamens. *Stigma* trifid, ſpreading.

PER. *Berry* dry, globoſe-three-lobed, three-celled: (three-berried drupe, G.)

SEED ſolitary, round, (conduplicate, in a two-celled ſhell, G.)

ESSENTIAL CHARACTER.

Cal. three-toothed. *Pet.* three, equal. *Berry* tricoccous.

SPECIES.

1. Cneorum tricoccum. *Widow-wail*, or *Spurge-Olive*.

Lin. ſpec. 49. *Reich.* 93. *hort. cliff.* 18. *Mill. fig.* 65. *t.* 98.

Chamælea tricoccos. *Bauh. pin.* 462. *Cluſ. hiſt.* 1. 87. *Camer. epit.* 973. *Bauh. hiſt.* 1. 584. *Raii hiſt.* 1710. *Ger.* 1215. *emac.* 1402. *Park. theat.* 201. 5. fig. 202. 5. *Gærtn. fruct.* 1. 342.

DESCRIPTION, &c.

1. This is an humble ſhrub, which ſeldom riſes more than two feet and a half high in this country, but ſpreads out on every ſide with many lateral branches, ſo as to form a thick buſh. The ſtems ligneous, and almoſt as hard as thoſe of the Box-tree, and the wood is of a pale yellow colour under the bark: the branches are garniſhed with thick ſtiff leaves, of an oblong oval ſhape, about an inch and a half long, and a quarter of an inch broad, of a dark green colour, having a ſtrong vein or rib through the middle. The flowers are produced ſingle from the wings of the leaves, toward the extremity of the branches; they are of a pale yellow colour. After the flowers are fallen, the germ becomes a fruit, compoſed of three ſeeds joined together after the ſame manner as thoſe of Euphorbia or Spurge; theſe are firſt green, afterwards turn of a brown colour, and when ripe are black.

[The fruit is thus deſcribed by the accurate Gærtner. It conſiſts of three ſmall berried drupes, gibbous on one ſide, and angular on the other, joined at a common axis, dark brown when ripe: fleſh thin, herbaceous: ſhell bony, thick, ſubglobular, wrinkled, with a groove and umbilical hole on the belly, two-celled, valveleſs: one of the cells, placed behind the other, both at the ſeat of the radicle, divided by a thin partition, ſo that the upper part of the ſhell appears to be four-celled. In each cell there is a ſingle, ſmall, ovate ſeed, doubled together like a worm, white with a brown caruncle at the inſertion of the navel.]

The flowers begin to appear in may, and are ſucceeded by others during the ſummer months; and, when the autumn proves favourable, theſe ſhrubs will continue in flower till the end of october.

As this is a low evergreen ſhrub, it may be very ornamental, if placed in the front of plantations or evergreen trees and ſhrubs; for as the branches grow pretty compact, and are well garniſhed with leaves, it will hide the ground between the taller ſhrubs better than moſt other plants; and, being durable, will not want to be removed.

[Native of the South of France, Italy and Spain; in hot, dry, barren and rocky ſoils.—Cultivated in 1596, by Gerarde[f].]

PROPAGATION AND CULTURE.

This was formerly preſerved in green-houſes, and thought too tender to live in the open air in England; but it has now long been planted in the full ground, where it reſiſts the cold of our ordinary winters very well, and is ſeldom injured but by extreme hard froſts; nor do theſe kill the plants which grow upon dry, rocky, or rubbiſhing ſoils, where their ſhoots are generally ſhort and firm; but in moiſt rich ground, where the ſhoots are more luxuriant, they are ſometimes injured.

It is propagated by ſeeds, which ſhould be ſown in autumn ſoon after they are ripe, and then the plants will come up the following ſpring; whereas thoſe which are not ſown till the ſpring, will remain a year in the ground, and often miſcarry; theſe ſeeds may be ſown in a bed of common earth, covering them half an inch deep, and will require no other care but to keep the plants clear from weeds the following ſummer; and in the autumn following, the plants may be tranſplanted where they are to remain.

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[a] Cavanilles.

[b] Gærtner.

[c] Hort. kew.

[d] Arduini.

[e] Linn. mant.

[f] Hort. kew.

Cneorum. See *Convolvulus, Daphne.*

CNICUS (*of Pliny,* Κνικος *of Hippocr. Theophr. and Dioſcor. from* κνεω, κνῆμι *or* κνίζω, *to cut, prick, or ſcratch: hence* κνηκος *or* κνίκος, *a prickly plant.*)

Lin. gen. n. 926. *Reich.* 1005. *Schreb.* 1255. *Juſſ.* 172. Acarna. *Vaill. A. G.* 1718.

Claſſ. 19. 1. Syngeneſia Polygamia Æqualis.

Nat. order of *Compoſitæ Capitatæ. Cinarocephalæ* Juſſ.

GENERIC CHARACTER.

Cal. *Compound* ovate, guarded with bractes, imbricate: *ſcales* ovate, cloſe, branched-thorny.

Cor. *Compound* tubular, uniform: *corollets* hermaphrodite, equal.

Proper funnel-form, oblong: *border* five-cleft, erect, nearly equal.

Stam. *Filaments* five, capillary, very ſhort. *Anthers* cylindric, tubular.

Pist. *Germ* ſhort. *Style* filiform, length of the ſtamens. *Stigma* oblong, emarginate.

Per. none. *Calyx* cloſed.

Seed ſolitary. *Down* plumoſe.

Rec. flat, villoſe.

ESSENTIAL CHARACTER.

Cal. ovate, imbricate with branch-thorny ſcales, guarded with bractes. *Corollets* equal.

SPECIES.

[1. Cnicus oleraceus. *Pale-flowered Cnicus.*

Lin. ſpec. 1156. *Reich.* 3. 687. *hort. cliff.* 394. *fl. ſuec. n.* 723. *Neck. gallob.* 340. *Pollich pal. n.* 771. *Fl. dan. t.* 860. *Leers herborn. n.* 623. *Willd. berol. n.* 797. *Krock. ſileſ. n.* 1350.

Cirſium. *Hall. helv. n.* 173. *Scop. carn. n.* 998.

Carduus pratenſis. *Lob. ic.* 2. 11.—latifolius. *Bauh. pin.* 376. *Raii hiſt.* 305. *Park. theat.* 958. *f.* 1. —prat. Tragi. *Bauh. hiſt.* 3. 42, 43. *f.* 1.

β. Cirſium latiſſimum. *Bauh. pin.* 377.

Leaves pinnatifid keeled naked; bractes concave entire ſomewhat coloured.]

2. Cnicus Eriſithales. *Clammy Cnicus.*

Lin. ſpec. 1157. *ſyſt.* 727. *Reich.* 3. 687. *Jacqu. obſ.* 1. 28. *t.* 17. *auſtr.* 4. *p.* 5. *t.* 310. (Carduus.)

Carduus Eriſithales. *Krock. ſileſ. n.* 1340.

Cirſium. *Hall. helv. n.* 175. *Comm. gott.* 1. 206. *t.* 8. *Scop. carn. n.* 999. *ann.* 2. 62.

Carduus pratenſis, fol. tenuibus laciniatis. *Bauh. pin.* 376.

Eriſithales. *Dalech. hiſt.* 1094.

Leaves ſtem-claſping pinnatifid awn-ſerrated, peduncles drooping, calyxes glutinous.

[3. Cnicus ferox. *Prickly Cnicus.*

Lin. ſyſt. 727. *Reich.* 3. 688. *mant.* 109. *Gouan. illuſtr.* 63. *Allion. pedem. n.* 565. *t.* 50.

Carduus lanceolatus ferocior. *Bauh. hiſt.* 3. 58. *f.* 2. *Raii hiſt.* 311.

Leaves decurrent ligulate tooth-thorny; ſtem branching erect.

4. Cnicus pygmæus. *Pigmy Cnicus.*

Lin. ſpec. 1156. *Reich.* 3. 688.

Carduus. *Jacqu. vind.* 282. *t.* 8.

Serratula pygmæa. *Jacqu. auſtr.* 5. *t.* 440.

Cirſium pygmæum. *Scop. carn. n.* 996.

Carduus mollis, fol. oblongo, Cirſii capitulo. *Bauh. pin.* 377.

C. mollior humilis anguſtifolius. *Cluſ. hiſt.* 2. 151.

Leaves ſeſſile ſublinear very much crowded, calyx unarmed.]

5. Cnicus Acarna. *Yellow Cnicus.*

Lin. ſpec. 1158. *Reich.* 3. 689. *Gouan. hort. monſp.* 423. *Cavan. hiſp.* 39. *n.* 59. *t.* 53. *Villars dauph.* 3. 35.

Carduus Acarna. *Lin. ſpec. ed.* 1. 820. *Mill. dict. n.* 3.

Acarna major, caule folioſo. *Bauh. pin.* 379. *Raii hiſt.* 315. *n.* 6. *Park. theat.* 966. *f.* 6.

Chamæleon ſalmanticenſis. *Cluſ. hiſt.* 2. 155. *Ger.* 998. *f.* 2. *emac.* 1160. *f.* 2.

β. A. humilis, caule folioſo. *Bauh. pin.* 379. *Raii hiſt.* 315. *n.* 5.

Picnocomon cretæ ſalonenſis. *Dalech. hiſt.* 1456. *Lob. ic.* 2. 14.

Leaves decurrent lanceolate undivided; calyxes pinnate-thorny.

6. Cnicus ſpinoſiſſimus.

Lin. ſpec. 1157. *ſyſt.* 727. *Reich.* 3. 689.

Cirſium. *Hall. helv. ed.* 1. 679. *t.* 20. *ed.* 2. *n.* 172. *t.* 5. *Scop. carn. n.* 1006. *Gmel. ſib.* 2. 64. *t.* 25?

Carlina polycephalos alba. *Bauh. pin.* 380.

Leaves ſtem-claſping ſinuate-pinnate thorny; head ſimple, flowers ſeſſile.

[7. Cnicus Centauroides. *Artichoke-leaved Cnicus.*

Lin. ſpec. 1157. *Reich.* 3. 689. *hort. cliff.* 392. 1. (Carduus.)

Centaurium majus, fol. Cinaræ, Cornuti. *Mor. hiſt.* 3. 131. *ſ.* 7. *t.* 25. *f.* 2.

C. maj. pyrenæum. *Park. theat.* 465, 466. *f.* 2.

Leaves pinnatifid; calyxes ſcarioſe, ſcales acuminate.

8. Cnicus uniflorus.

Lin. ſyſt. 727. *Reich.* 3. 690. *mant.* 572.

Centaurea. *Gmel. ſib.* 2. 86. *t.* 38.

Leaves pinnatifid, calyx ſcarioſe villoſe.]

9. Cnicus cernuus. *Siberian Cnicus.*

Lin. ſpec. 1157. *Reich.* 3. 690. *hort. upſ.* 251. *Mill. fig. t.* 248.

Carduus. *Gmel. ſib.* 2. 47. *t.* 19.

Leaves cordate, petioles curled thorny ſtem-claſping; flowers drooping, calyxes ſcarioſe.

DESCRIPTIONS, *&c.*

[Some of the ſpecies approach to *Carduus,* others to *Serratula,* and *C. Acarna* to *Carthamus:* hence Lamarck has ſuppreſſed this genus, inſerting ſome of the ſpecies among the *Cardui,* and others among the *Carthami*; from which Linneus ſeparates the *Cnicus* principally becauſe the ſcales of the calyx are ovate and branch-ſpiny; whereas in *Carthamus* they are narrowed at the baſe, and have a leafy, ovate, ſpreading appendicle at the tip[a].

1. Calyxes lateral, ſeſſile, uſually two together, with one between on a ſhort peduncle. A white line runs along the keel of the calycine ſcales[b]. There are very ſmall, bifid appendixes to the anthers, as in *Carlina vulgaris*[c]. The calyx is ſurrounded with bractes, ſcales branch-thorny. Leaves ſmooth, ſtem-claſping[d].—In the woods of Switzerland, near brooks, it grows to the height of ſix feet, with the leaves more thorny, and the branches, in the mature ſtate of the plant, more elongated and leafleſs: it is then very like to *Carduus tataricus Jacqu. auſtr. t.* 90[e]. Flowers pale yellow.

Native of moſt countries of Europe, except the moſt ſouthern; flowering in july and the autumnal months, in moiſt woods, meadows and marſhes.——The Ruſſians boil the leaves in the ſpring, and eat them as Coleworts. No cattle touch it for food, according to *Schreber.*—Cultivated in 1570, by Mr. Hugh Morgan[f].

Mr. Miller's deſcription of *Cnicus Eriſithales* ſeems to belong to this ſpecies.

2. Leaves pinnate-parted, ſeſſile, pubeſcent eſpecially underneath. Peduncles leafleſs. Flowers ſolitary, nodding, yellow; diſk convex, rather long[g].

Stem three feet high and more, angular, ſometimes a little tomentoſe, not branched, unleſs at the top, naked far under the flowers. Flowers three or four, frequently two oppoſite, ſeſſile, never guarded with leaves, ſeldom ſolitary, nodding in a ſtate of maturity: calyxes conic; ſcales lanceolate, awned but not thorny: florets purple, yellow, or white with purple ſtamens and piſtil[h].

Stem from three to five feet high, hairy. Lower leaves a foot in length. Flowers as far as ſix. Calyxes roundiſh, ſmooth; ſcales reflected at the end. Filaments hairy: anthers putting forth two little briſtles behind. Seed two lines long, ancipital, with the angles obtuſe, crowned with a ring, whence ariſe feathered rays, as far as forty. Floſcules pale yellow, varying to red or purple and fleſh-colour.—The geſtation of this ſpecies laſts a month; the leaves on the ſtem ariſe to nine; the terminating ſegment of them is trifid, the lower pinnas are confluent with the ears; the branches bear two or three flowers, are long, and leafy; the leaves are lanceolate[i].

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[a] Juſſieu and Cavan. hiſp. 40.
[b] Linn. ſpec.
[c] Leers.
[d] Willdenow.
[e] De la Chenal, act. helv. 8. 141.
[f] Hort. kew. from Lobel.
[g] Linn. ſyſt.
[h] Haller.

France, Switzerland, Auſtria, Carniola, Sileſia. It begins to flower in june.—Introduced 1787, by Monſ. Vare. Perennial[k].

3. This ſpecies reſembles *Carduus eriophorus.* Stem firm, deeply grooved, covered with a cobwebby pubeſcence. Leaves ſtem-claſping, lanceolate, deeply pinnatifid; pinnas ſimple and two-lobed ending in a ſtrong ſpine; not only the whole margin, but the ſurface of the leaf is ſtrigoſe and ſet with thorns. A large head of white or purple floſcules terminates the branches, and is guarded with linear ſtrigoſe bractes having ſmall ſpines about the edge. Scales of the calyx as in *C. eriophorus.* Biennial[l].

South of France and Piedmont.——It flowers in july and auguſt. Introduced 1775, by Monſ. Thouin[m].

4. Root perennial, black. Stem upright, hollow, from two to five inches high, thickened at top, very cloſely covered with white hairs. Leaves many both at the root and on the ſtem, ſharp, three inches long, ſome quite entire, others toothletted, unarmed, the ſides rolled back, grooved on the upper ſurface where the midrib projects on the under, hairy, eſpecially beneath and near the ſtem, deep green above, pale green underneath. Flower ſolitary, terminating, erect, very large in proportion to the plant, ſeſſile in the uppermoſt ſhorter leaves. Scales of the calyx lanceolate, acuminate, hairy, ciliate, pale green with a purple baſe, the inmoſt erect, the outer patulous at the tip. Corollets purple; tube long and ſlender, ſpread out into a wide and then an ovate form, ſegments linear, obtuſe, equal, ſhort; in the outer florets very much curved in, but in the central ones ſtraight. Anthers violet-coloured. Stigma bifid, purple. Calyx unchanged when in fruit. Hairs on the receptacle white, capillary, the length of the calyx. Seeds oblong, obſcurely angular, ſmooth, browniſh, crowned with a ſeſſile, plumoſe, long egret. It flowers in july and auguſt.

Native of the mountains of Auſtria[n]. Found alſo on mount Grindoviz in 1761, by Scopoli, who ſays that his ſpecimens are leſs villoſe, the leaves fewer and with only a ſingle toothlet or two, the calycine ſcales poliſhed on the inſide, the ſeeds compreſſed, crowned with a pale egret three times as long as the calyx, and the receptacle rough with briſtle-ſhaped chaffs. He refers it to the genus *Cirſium,* and Jacquin to that of *Serratula.*

5. Stem herbaceous, winged by the leaves running down it, hoary, a foot high, but ſometimes much ſmaller. Leaves ſeſſile, ſcattered, extremely acute, hoary, keeled, having a few teeth about the edge, with two or three yellow ſpines in each. Calyx woolly; ſcales linear, ending in pinnate, innocuous, yellow ſpines; and intrenched in leaves that are very prickly, like the ſtem-leaves but ſhorter. Corollets purple. Seeds ovate, ſharp at the baſe, ſomewhat compreſſed, ſhining, yellowiſh white, crowned with a feathered egret, half an inch long, ſpreading out into a ball[o].

This has the habit of *Carlina,* and the appearance of *Carthamus.* Stem ſimple, corymbed at the top. Leaves adnate, becoming hoary, ciliated with tranſverſe, yellow, double ſpines. Flowers terminating, afterwards axillary, ſeſſile. Calyxes oblong, imbricated with ſcales having harmleſs ſpines at the end, but pinnate with five ſpreading ſpinules. Corollas ſmall, purpliſh[p].

It is a native of the South of France and of Spain, and was cultivated in 1683, by Mr. James Sutherland[q].

6. Stem unbranched, twelve to eighteen inches high; the top entirely covered with leaves; angular not winged. Stem-leaves moſt fiercely thorned; pinnas angular, many-lobed, the nerves continued into ſtrong thorns: the leaves on the top of the ſtem form a neſt for the flower, broader, ovate-lanceolate, pinnate, whitiſh yellow, pubeſcent. Calyx connate, with lanceolate ſcales, ending in a ſtout ſpine. Floſcules pale yellow[r].

The ſtem of our plant is twice as long as in Haller's figure, grooved, villoſe. Leaves ſubdecurrent, villoſe above, beneath having thick hairy nerves. Flowering heads as far as eighteen. Calycine ſcales ſmooth, erect[s].

Haller affirms that Gmelin's plant is not the ſame with his.—Native of Switzerland, Auſtria, and Carniola. Perennial. In gardens it riſes to the height of four feet.

7. Leaves large, long, winged, the colour and form of Artichoke leaves, hoary underneath. Stem three feet high, angular, putting forth few branches, and having at the top heads the ſize of a ſmall Artichoke, and of a tawny colour. Corollas purple. Native of the Pyrenees[t].

It flowers in july and auguſt, and was cultivated here in 1640[u].

8. Stem two feet high, erect, ſubangular, the thickneſs of the little finger, ſcarcely lanuginoſe, one-flowered. Leaves very many, unarmed, ſeſſile, ſomewhat hoary; the upper ſmaller and more entire: root-leaves large, petioled; the ſegments lanceolate, ſerrate. Flower one, terminating, ſeſſile; calyx large, globular, ſcales imbricate, looſe, ovate, gray: corolla large, violet; floſcules ſix-cleft, with linear, acute ſegments; ſtamens and ſtyle longer than the corolla, the former white, the latter violet. There are no barren floſcules.—Native of Siberia. Perennial[x].

9. Root perennial, large, and rough, ſending out many thick, black fibres, which ſtrike deep in the ground. The leaves which riſe immediately from the root are near a foot long, and ſix inches broad in the middle, diminiſhing gradually toward the point, but at the baſe ſwelling out almoſt heart-ſhaped; their petioles are bordered, and the borders are cut and curled, embrace the ſtalks half round, and end in ſpines; they are of a deep green on their upper ſide, but white on their under, and are ſharply ſerrate on their edges. The ſtalks riſe ſix or ſeven feet high, ſending out a few ſmall branches; they are ſtriated, of a brown colour, and at bottom have heart-ſhaped leaves, half-ſtem-claſping; the leaves toward the top of the ſtalk are long and narrow, ending in acute points. Each branch is terminated by one large head of flowers: calycine ſcales imbricate, ending in a ſharp ſpine; florets pale yellow, with an agreeable ſcent. It flowers the ſecond year from ſeed in july, and the ſeeds ripen in the autumn, when the plant decays.—Native of Siberia, whence the ſeeds were ſent to the imperial garden at Peterſburgh, and were communicated to Mr. Miller[y], who cultivated them at Chelſea in 1758[z].]

The inhabitants of Siberia eat the tender ſtalks, boiled.

PROPAGATION AND CULTURE.

Theſe are perennial plants, which may be propagated by parting the roots: the beſt time for doing this is in autumn, that the plants may get good root in winter; for thoſe which are tranſplanted in the ſpring, do not flower well the firſt year, unleſs they are planted in a moiſt ſoil. As theſe plants grow very large, they are not proper furniture for ſmall gardens, where they will take up too much room; for they ſhould not be planted nearer than four feet from each other, for if they are too near any other plants, they will rob them of their nouriſhment; for the roots of theſe extend to a great diſtance, ſo that two or three for variety, are ſufficient for any garden, and may be planted at a diſtance from choicer plants.

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[i] Scopoli.
[k] Hort. kew.
[l] Allioni.
[m] Hort. kew.
[n] Jacquin.
[o] Cavanilles.
[p] Linn. ſpec.
[q] Hort. kew.
[r] Haller.
[s] Scopoli.
[t] Moriſon.
[u] Hort. kew.
[x] Linn. mant.
[y] Mill. fig.
[z] Hort. kew.

They are alſo propagated by ſeeds, which may be ſown in the ſpring on a bed of common ground, and will only require to be thinned, and kept clean from weeds till autumn, when they may be tranſplanted where they are deſigned to remain.

[Cnicus. See *Atractylis*, *Carlina*, *Carthamus*, *Centaurea.*]

Coa. See *Hippocratea.*

[Coanenepilli. See *Paſſiflora.*

Coapoiba. See *Copaifera.*

Cobbe. See *Rhus.*]

[COCCOCYPSELUM. (*From* κοκκὸς, *a grain or ſeed, and,* κυψελη *or* κυψελιον, *a cheſt, veſſel or meaſure.*)

Lin. gen. Schreb. n. 1721. *vol.* 2. *p.* 789. *Brown.* 144. *Swartz prodr.* 31. *Juſſ.* 198.

Claſſ. 4. 1. Tetrandria Monogynia.

Nat. order of *Stellatæ*. *Rubiaceæ* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, four-parted, ſuperior: *ſegments* acute, erect.

Cor. one-petalled, funnel-form: *tube* longer than the calyx, gradually widening towards the border; which is four-parted, the parts ovate, erect.

Stam. *Filaments* four, the length of the tube, inſerted into the baſe, filiform, erect. *Anthers* erect.

Pist. *Germ* ovate, inferior. *Style* the length of the ſtamens, bifid at the tip. *Stigmas* ſimple.

Per. *Berry* roundiſh, inflated, two-celled, crowned.

Seeds numerous, minute.

ESSENTIAL CHARACTER.

Cal. four-parted, ſuperior. *Cor.* funnel-form. *Berry* inflated, two-celled, many-ſeeded.

SPECIES.

1. Coccocypſelum repens.
Swartz prodr. 31. *Brown. jam.* 144. *t.* 6. *f.* 1.

DESCRIPTION, &c.

This is very like the ſmalleſt ſpecies of *Ruellia* (268. n. 3.) both in leaves and appearance: it grows in ſpreading tufts, each ſtalk creeping eighteen or twenty inches from the root, and ſhooting out a few lateral branches as it runs; the leaves are oppoſite; the flowers and fruits riſe on ſhort divided peduncles from alternate axils.

Native of Jamaica, frequent in the cooler mountains of Liguanea and Mount-Diable [a].]

COCCOLŎBA. (*Named* Coccolobis *by Browne, from the kernel being lobed at bottom, and altered to* Coccoloba *by Jacquin and Linneus.*)

Lin. gen. n. 496. *Reich.* 538. *Schreb.* 678. *Gærtn. t.* 45. *Juſſ.* 82. *Brown. t.* 14. *f.* 3. *Jacqu. amer.* 111. *Gærtn.* 45.

Claſſ. 8. Octandria Trigynia.

Nat. order of *Holoraceæ*. *Polygoneæ* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, five-parted; *diviſions* oblong, obtuſe, concave, ſpreading moſt widely, coloured, permanent.

Cor. none.

Stam. *Filaments* eight, ſubulate, patulous, ſhorter than the calyx. *Anthers* roundiſh, twin.

Pist. *Germ* ovate, trigonal. *Styles* three, ſhort, filiform, ſpreading. *Stigmas* ſimple.

Per. none. *Calyx* berried, thickened, converging, involving the ſeed.

Seed. *Nut* ovate, acute, one-celled.

ESSENTIAL CHARACTER

Cal. five-parted, coloured. *Cor.* none. *Berry* calycine, one-ſeeded.—Drupe. *G.*

SPECIES.

1. Coccoloba Uvifera. *Round-leaved Sea-ſide Grape,* or *Mangrove Grape-tree.*
Lin. ſpec. 523. *Reich.* 2. 214. *Jacqu. amer.* 112. *t.* 73. *pict.* 57. *t.* 110. *Brown. jam.* 209. *Gærtn. fruct.* 214. *t.* 45.
Uvifera. *Lin. hort. cliff.* 487. *Pluk. alm. t.* 236. *f.* 7.
Guaiabara. *Plum. ic. t.* 145.
Populus rotundifolia americana. *Bauh. pin.* 430.
Prunus. *Sloan. jam.* 2. 129. *t.* 220. *f.* 3, 4, 5. *Raii dendr.* 40. *n.* 5. *Cateſb. car.* 2. *t.* 96.
Leaves cordate-roundiſh ſhining.

2. Coccoloba pubeſcens. *Great-leaved Sea-ſide Grape.*
Lin. ſpec. 523. *ſyſt.* 379. *Reich.* 2. 215. *Brown. jam.* 210. *n.* 2.
C. grandifolia. *Jacqu. amer.* 113. *pict.* 57.
Scortea. *Pluk. phyt.* 222. *f.* 8.
Leaves orbiculate pubeſcent.

3. Coccoloba excoriata. *Oval-leaved Sea-ſide Grape,* or *mountain Grape-tree.*
Lin. ſpec. 524. *Reich.* 2. 215. *Brown. jam.* 210. 4.
Leaves ovate, branches as it were barked.

[4. Coccoloba nivea.
Jacqu. amer. 115. *t.* 78. *pict.* 58. *t.* 115. *Swartz prodr.* 64.
Leaves elliptic acuminate veined ſhining above, racemes almoſt upright.

5. Coccoloba leoganenſis.
Jacqu. amer. 113. *t.* 178. *f.* 33.
Leaves roundiſh quite entire ſhining flat, racemes of the fruit erect.

6. Coccoloba obtuſifolia.
Jacqu. amer. 114. *t.* 74.
Leaves oblong very obtuſe.

7. Coccoloba flaveſcens.
Jacqu. amer. 114. *t.* 75.
Leaves lanceolate-oblong, blunt with a point.]

8. Coccoloba punctata. *Spear-leaved Sea-ſide Grape.*
Lin. ſpec. 523. *Reich.* 2. 216. *Brown. jam.* 210. 3.
C. coronata. *Jacqu. amer.* 114. *t.* 77. *pict.* 58. *t.* 114.
Leaves lanceolate-ovate.

[9. Coccoloba emarginata.
Lin. ſyſt. 379. *Reich.* 2. 216. *Jacqu. enum. amer.* 37. *obſ.* 1. 18. *t.* 9.
Leaves coriaceous roundiſh gaſh-emarginated.

10. Coccoloba barbadenſis.
Lin. ſyſt. 379. *Reich.* 2. 216. *Jacqu. enum. amer.* 37. *obſ.* 1. 18. *t.* 8.
Leaves cordate-ovate waved.]

11. Coccoloba tenuifolia. *Small Sea-ſide Grape.*
Lin. ſpec. 524. *Reich.* 2. 216. *amœn.* 5. 397. *Brown. jam.* 210. 5. *t.* 14. *f.* 3.
Leaves ovate membranaceous.

[12. Coccoloba auſtralis.
Forſt. flor. auſtr. n. 176.
Leaves cordate-ovate-acute; flowers polygamous.

13. Coccoloba aſiatica.
Lour. cochinch. 239.
Scandent: leaves oblong-ovate veined; racemes terminating.

14. Coccoloba cymoſa.
Lour. cochinch. 240.
Scandent; leaves oblong-ovate, veined; flowers axillary and terminating in ſeſſile cymes.

DESCRIPTIONS, &c.

1. This is a lofty ſpreading branched irregular inelegantly formed tree, but rendered handſome by its leaves and fruits. Bark cinereous, thin, in the younger trees ſmooth, in older ones full of chinks. Timber hard ponderous red, but fit for little uſe except to burn on account of its fibrous texture, unleſs it ſhould be found ſerviceable in dying. Leaves quite entire, ending in a ſhort blunt point, coriaceous thick large alternate deep green, with the midrib and veins connected with it more or leſs ſcarlet, on ſhort petioles ſheathing at the baſe. Racemes ſimple round thick upright terminating ſolitary very long, when in fruit pendulous; the pedicels one-flowered numerous and ſhort. Flowers ſmall whitiſh, ſmelling like thoſe of the Cherry. Style ſingle, or divided deeply into three ſegments, or triple; which variation takes place alſo in the other ſpecies. Baſe of the filaments widening, and they are commonly connected there [b].

The berries are of the ſize of Grapes, having under an outward reddiſh-brown or purpliſh membrane, a ſoft thin pulp, not unpleaſantly aſtringent, covering a large round ſtone, containing a kernel[c].

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[a] Browne.

[b] Jacquin.

Gærtner calls the fruit a ſuperior drupe formed of the berried calyx, obovate, of a purple colour with a bloom becoming black when ripe, and wrinkled: pulp ſoft drying into a thin cruſt. Shell thin like paper, intimately united with the pulp and half-three-celled: partitions membranaceous narrow, to be found only at the bottom of the drupe. Seed ſingle, ſubglobular, acuminate above, deeply umbilicate below, three-lobed, ſtriated and wrinkled, of a ferruginous brown colour.

The fruit is a very great aſtringent, and may be uſed in emulſions, boluſes or electuaries, but its action is not of long continuance: it has all the taſte of Biſtort. The berries have an agreeable flavour, but the pulp is not conſiderable. This tree is common in moſt of the ſugar-colonies, and is generally found near the ſea. It frequently grows to a conſiderable ſize, and is then looked upon as a beautiful wood for all ſorts of cabinet-ware; but it ſeldom riſes ſtraight or regular[d]. The Spaniards call it *Uvero*, and the French *Raiſinier du bord de la mer*.

Introduced 1696, by Mr. Bentick[e].

2. This is an upright tree, ſixty or eighty feet high: the head has frequently no more than two or three thick branches, but little divided and irregular. The bole of the tree is ſometimes forty feet in length, and puts forth a branch or two about the middle. The timber is deep red, heavy, very hard, and alſo incorruptible, but it is brittle; when uſed for poſts, the part under ground becomes hard as ſtone. Leaves roundiſh, cordate, quite entire, very much veined and wrinkled, frequently extremely hirſute, ſometimes however almoſt ſmooth, alternate, few, two feet in diameter, on a ſhort petiole ſheathing at the baſe.

It is common in the thick mountainous woods of Martinico[f]. Browne ſays, that in Jamaica it ſeldom riſes above five or eight feet in height; and that the berries are not eſteemed. Jacquin had not ſeen the flower or fruit, but was informed that the latter is eatable. The French inhabitants call it *Bois a grandes feuilles*. Jacquin cultivated it at Vienna about the year 1755; and Mr. Miller here in 1768.]

3. This grows to a very large ſize, and the leaves, flowers and fruits are all large: the leaves are very ſmooth and of a lucid green.

[Browne informs us that it grows to a conſiderable ſize in Jamaica, and is looked upon there as a fine timber wood.

It was introduced here before 1733, by William Houſtoun, M.D.[g]

4. This tree grows to the height of twenty feet, is upright, and the boughs form a head. Leaves quite entire, wrinkled, petioled, alternate, half a foot long. Racemes terminating, ſolitary, ſimple. Flowers ſmall, yellowiſh. The calyx becomes thick, ſucculent and ſnow-white, covering to the middle a three-ſided, black, ſhining nut. The fruit is ſweet and pleaſant. The French call it *Raiſinier de coude*.—Native of St. Domingo, Jamaica, and Martinico[h].

5. This is a ſmall upright branching tree, ten feet high. Leaves veined coriaceous, only half the ſize of thoſe on the firſt ſort. Native of Port au Prince and Leogane in St. Domingo.

6. This is alſo a ſmall, very branching, irregular tree, about twelve feet high, with ſmooth aſh-coloured branches. Leaves quite entire, ſhining, coriaceous, veined, commonly ſlightly widening at the top, flat, alternate, petioled, numerous. Racemes ſimple, terminating, ſolitary, on alternate diſtich young twigs. Flowers ſmall, white. The leaflets of the calyx increaſe and become ſucculent, cloſely embracing a dark ſhining nut, frequently naked at the end; however they continue permanent, not uniting into a drupe. Whence this ſpecies ſeems nearly allied to *Polygonum*. The fruit is aſtringent. Native of Carthagena. Flowering in auguſt[i].

7. A ſmall branching tree, twelve feet high. Leaves quite entire, coriaceous, ſhining, ſomewhat rigid, almoſt veinleſs, yellowiſh green, petioled, alternate, numerous. Racemes ſimple, terminating, erect. Drupes roundiſh, dark purple, the ſize of a large pea; the pulp ſweet and eatable. Native of Domingo, at Port au Prince.

8. A ſmall upright branched tree, fifteen feet high. Leaves quite entire, ſubcoriaceous, veined, ſhining, alternate, half a foot long, commonly two or three on each flowering branchlet, on petioles ſheathing at the baſe. Racemes terminating, ſimple, ſolitary, erect, ſcarcely an inch and half long. Flowers white. Almoſt the whole receptacle, with a ſmall part only of the calyx, becomes a roundiſh drupe, of a dark red colour, and a ſweetiſh but auſtere taſte. Native of Carthagena.

9. This tree agrees very nearly in habit with *C. leoganenſis*. The leaves are very deeply emarginate at the tip, commonly at an acute angle, and are ſcarcely coriaceous. Native of the Weſt Indies. It is *Guajabaſa foliis rotundioribus* of Houſtoun's catalogue, and is in Mygind's herbarium.

10. This has the habit of *C. uvifera*. The leaves are very coriaceous, five inches long, waved on the edge; the petioles are ſlightly covered with a ferruginous toment. Bark of the branches cinereous. Wood red. It is named in Houſtoun's catalogue G. fol. oblongis, and is alſo in Mygind's herbarium[k].]

11. This is of humbler growth than any of the former: the flowers and fruit are ſmaller than thoſe of the other ſorts. [It recedes from the other ſpecies, in having membranaceous not coriaceous leaves; the petioles ſurrounded with a membrane inſtead of a ſtipule, and not iſſuing from their back; racemes terminating and quite ſimple; flowers ſcattered and pedicelled[l].

The calyx is ſeldom divided into more than three parts, and the nut is triangular. The flowers are ſmall and diſpoſed in ſimple axillary ſpikes in all the ſpecies. The petioles of the leaves are ſtrong and ſheathed at the bottom[m].

Native of Jamaica.

12. Native of New Zealand; found at Charlotte Sound. It ſeems rather to be a *Polygonum* by the drawing in Sir Joſeph Banks's collection.

13. Stem ſuffruticoſe, branching. Leaves ſubacuminate, quite entire, coriaceous, alternate. Flowers white in looſe racemes. Calyx bell-ſhaped. Style cloven half way, nearly equal to the calyx, with three roundiſh ſtigmas. Fruit a roundiſh five-lobed berry, formed from the five ſegments of the calyx, blackiſh, pellucid and ſmall, incloſing one, three-ſided, acuminate ſeed.

Native of Cochinchina, in hedges and among buſhes.

14. This has the ſtem, leaves, and fructification as in the foregoing ſort; but the flowers are more numerous and heaped together in ſeſſile cymes.

In the hedges of Cochinchina[n].

All the ſpecies are either trees or ſhrubs bearing their flowers in racemes or bunches.] except the three laſt, they are natives of the Weſt Indies; ſome on the ſea ſhores, where they form almoſt impenetrable thickets. The fruit of the firſt ſort is frequently eaten by the inhabitants, but eſpecially by the negroes: the other ſorts are chiefly food for birds.

PROPAGATION AND CULTURE.

The plants of all the ſorts are eaſily propagated by ſeeds, when they can be obtained freſh from the places of their natural growth (for none of the ſorts have as yet produced either fruit or flowers in England.) The ſeeds ſhould be ſown in ſmall pots filled with earth from the kitchen-garden, and plunged into a hot-bed. If the ſeeds are good, and the bed of a proper temperature of warmth, the plants will appear in five or ſix weeks, and will be fit to tranſplant in about a month after; when they ſhould be ſhaken out of the pots, ſeparating their roots carefully, and each planted in a ſeparate ſmall pot filled with the like earth, plunging them into a hot-bed of tanners bark, being careful to ſhade them in the day time, until they have taken new root; after which they ſhould be treated as other tender exotic plants, which require to be conſtantly kept in the bark ſtove.

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[c] Sloane. [d] Browne. [e] Hort. kew. [f] Jacquin. [g] Hort. kew. [h] Jacquin.

[i] Jacquin. [k] Ibid. [l] Linn. amoen. [m] Browne. [n] Loureiro.

[COCCONILEA. See *Rhus*.

COCCULUS. See *Meniſpermum*.

COCCUS. See *Cocos*.]

COCCYGRIA. See *Rhus*.

COCHLEARIA. (*From the form of the leaves, which being ſlightly hollowed, reſemble an old-faſhioned ſpoon.*)

Lin. gen. n. 803. *Reich.* 867. *Schreb.* 1079. *Juſſ.* 240. *Tourn.* 101. *Raii meth.* 98.
Claſſ. 15. 1. Tetradynamia Siliculoſa.
Nat. order of *Siliquoſæ*, or *Cruciformes*. *Cruciferæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* four-leaved: *leaflets* ovate, concave, gaping, deciduous.

COR. four-petalled, cruciform. *Petals* obovate, ſpreading, twice the ſize of the calyx: *claws* narrow, ſhorter than the calyx, patulous.

STAM. *Filaments* ſix, ſubulate, length of the calyx: the oppoſite ones ſhorter. *Anthers* obtuſe, compreſſed.

PIST. *Germ* heart-ſhaped. *Style* ſimple, very ſhort, permanent. *Stigma* obtuſe.

PER. *Silicle* heart-ſhaped, gibbous, turgid, emarginate, furniſhed with a ſtyle, two-celled, ſcabrous, valves gibbous, obtuſe.

SEEDS about four in each cell.

ESSENTIAL CHARACTER.

Silicle emarginate, turgid, ſcabrous; valves gibbous, obtuſe.

SPECIES.

1. Cochlearia officinalis. *Common Scurvy-graſs.*
Lin. ſpec. 903. *ſyſt.* 588. *Reich.* 3. 226. *fl. ſuec. n.* 577. *lapp. n.* 256. *hort. cliff.* 332. 4. *mat. med.* 160. *Hudſ. angl.* 283. *With.* 677. *Lightf.* 342. *Fl. dan. t.* 135. *Blackw. t.* 227. *Woodv. med. bot.* 89. *t.* 29.
Cochlearia. *Bauh. hiſt.* 2. 942. *Raii hiſt.* 822. *ſyn.* 302. 1. *Dod. pempt.* 594. 1.——rotundifolia. *Ger.* 324. 1. *emac.* 401. 1. *Park. theat.* 285. 2.—fol. ſubrotundo. *Bauh. pin.* 110. *Mor.* 3. 20. 1.
Naſturtium. *Hall. helv. n.* 503.
β. C. minor rotundifolia. *Park.* 286. 3. *Raii ſyn.* 303. 4.
Root-leaves cordate-roundiſh, ſtem-leaves oblong a little ſinuate.

2. Cochlearia danica. *Daniſh Scurvy-graſs.*
Lin. ſpec. 903. *ſyſt.* 588. *Reich.* 3. 227. *fl. ſuec. n.* 578. *mant.* 425. *Fl. dan. t.* 100. *Hudſ. angl.* 284. *With.* 679. *Lightf.* 343.
C. aremorica. *Tourn. inſt.* 215. *Raii hiſt.* 824.
C. marina fol. anguloſo parvo. *Raii ſyn.* 303. 5.
Thlaſpi hederaceum. *Lob. obſ.* 338. 1. *ic.* 1. 615. 2. *Ger. emac.* 271. 5. *Park. theat.* 848. 1. *Bauh. hiſt.* 2. 933. 2. *Pet. brit. t.* 49. *f.* 3. *Mor.* 3. 20. 3.
β. C. danica repens. *Bauh. pin.* 110. *prodr.* 53. *Raii hiſt.* 833.
γ. C. minor erecta. *Bauh. pin.* 110. *prodr.* 53. *Raii hiſt.* 833.
Leaves haſtate-angular, all deltoid.

3. Cochlearia anglica. *Engliſh* or *Sea Scurvy-graſs.*
Lin. ſpec. 903. *Reich.* 3. 227. *Hudſ. angl.* 284. *With.* 679. *Lightf.* 344. *Fl. dan. t.* 329. *Blackw. t.* 218.
C. fol. ſinuato. *Bauh. pin.* 110. *Raii hiſt.* 833. *ſyn.* 303. 3. *Mor.* 3. 20. 2.
C. britannica ſ. anglica. *Lob. obſ.* 157. 1. *ic.* 1. 294. 1. *Ger.* 324. 2. *emac.* 401. 2.
C. vulgaris. *Park. theat.* 285. 1.
All the leaves ovate-lanceolate.

4. Cochlearia groenlandica. *Greenland Scurvy-graſs.*
Lin. ſpec. 904. *Reich.* 3. 227. *hort. cliff.* 498. *Lightf.* 344. *Barth. act.* 3. 143. *t.* 144.
C. offic. γ. *Hudſ.* 283. *With.* 678.
Leaves kidney-form entire fleſhy.

[5. Cochlearia Coronopus. *Wild Scurvy-graſs,* or *Swine's-Creſs.*
Lin. ſpec. 904. *Reich.* 3. 227. *hort. cliff.* 331. *fl. ſuec. n.* 579. *Hudſ. angl.* 284. *With.* 680. *Lightf.* 345. *Scop. carn. n.* 860. *Neck. gallob.* 276. *Pollich pal. n.* 613. *Fl. dan. t.* 202.
Naſturtium ſupinum capſulis verrucoſis. *Raii ſyn.* 304.
Coronopus *Ruellii*, 373. *Hall. helv. n.* 502. *Blackw. t.* 120. *Gærtn. fruct.* 2. 293. *Ger.* 346. 2. *emac.* 427. 2. *Park.* 502. *f.* 2. *Pet. brit. t.* 50. *f.* 6. *Mor.* 3. 19. 9. *Bauh. hiſt.* 2. 919. 2. *Raii hiſt.* 843.
Ambroſia campeſtris repens. *Bauh. pin.* 138.
Lepidium ſquamatum. *Forſk. ægypt.* 117. *n.* 69.
Leaves pinnatifid; ſtem depreſſed.]

6. Cochlearia Armoracia. *Horſe Radiſh.*
Lin. ſpec. 904. *Reich.* 3. 228. *hort. cliff.* 332. 2. *fl. ſuec. n.* 580. *mat. med.* 160. *Woodv. med. bot.* 406. *t.* 150. *Hudſ. angl.* 284. *With.* 681. *Relh. cant. n.* 475. *Blackw. t.* 415.
Naſturtium. *Hall. helv. n.* 504.
Rhaphanus ruſticanus. *Bauh. pin.* 96. *Ger.* 187. 1. *emac.* 241. 1. *Park. theat.* 860. *Pet. brit. t.* 49. *f.* 11. *Mor.* 3. 7. 2. *row.* 3. *Raii hiſt.* 818. *ſyn.* 301.
R. magna. *Dod. pempt.* 678. 1. *Lob. ic.* 1. 320. 1. *Matth.* 442.
Root-leaves lanceolate crenate; ſtem-leaves gaſhed.

7. Cochlearia glaſtifolia. *Woad-leaved Scurvy-graſs.*
Lin. ſpec. 904. *ſyſt.* 588. *Reich.* 3. 228. *hort. cliff.* 332. 3. *upſ.* 184. *Villars dauph.* 3. 297.
Lepidium glaſtifolium. *Bauh. pin.* 97. *Mor. hiſt.* 2. 312. *ſ.* 3. *t.* 21. *f.* 3. *Raii hiſt.* 828. 2. & 840.
L. annuum. *Dalech. hiſt.* 1297. *Lob. obſ.* 153. *ic.* 321. *Bauh. hiſt.* 2. 941. *f.* 2.
Stem-leaves cordate-ſagittate ſtem-claſping.

[8. Cochlearia Draba.
Lin. ſpec. 904. *ſyſt.* 588. *Reich.* 3. 228. *Jacqu. auſtr.* 4. 8. *t.* 315. *Villars dauph.* 3. 298.
Lepidium. *Lin. hort. cliff.* 331. 2.
Draba 1. vulgaris. *Cluſ. hiſt.* 2. 124.—umbellata ſ. major, capitulis donata. *Bauh. pin.* 109. *Mor.* 3. 21. 1.
Leaves lanceolate ſtem-claſping toothed.

DESCRIPTIONS, &c.

1. Root perennial. Stem angular, branching. Root-leaves kidney-ſhaped, entire, veined, ſmooth, fleſhy, obtuſe, with ſeven callous obſcure crenules, ſometimes ſlightly angular, on long petioles. Stem-leaves oblong, ſeſſile or claſping, the lower ones ſometimes on broad petioles, deep green, ſlightly toothed, or with a few large angular dents on the edges. Petals fleſhy, clear white with greeniſh claws. Silicles oval, gibbous, ſmooth, either not emarginate or ſcarce ſenſibly ſo, on long ſlender peduncles, ſpreading and ſometimes bent back: partition double, in each cell four rough ſeeds[a].

Sea ſhores of the north of Europe: alſo on mountains. With us on the coaſt of Norfolk near Lynn and Yarmouth; near Hull, Boſton, Whapload, Holbeach; in Cornwall, Cumberland, Lancaſhire, Wales: and at a great diſtance from the Sea near Caſtleton in Derbyſhire, Penigent, Ingleborough, and Stanemore in Yorkſhire; near Settle, on the highlands of Scotland, and mountains of Wales.

Cochlearia officinalis, or Common Scurvy-graſs, has long been held in very high eſtimation as an antiſcorbutic and purifier of the blood. It has a ſomewhat unpleaſant ſmell, and a warm, bitter taſte. Its active matter is extracted by maceration both in watery and ſpirituous menſtrua, and accompanies the juice obtained by expreſſion. The moſt conſiderable part of it is of a very volatile kind; the peculiar penetrating pungency totally exhaling in the drying of the herb, and in the evaporation of the liquors. Its principal virtue reſides in an eſſential oil, ſeparable in a very ſmall quantity by diſtillation with water. Scurvy-graſs is antiſeptic, attenuant, aperient and diuretic, and is ſaid to open obſtructions of the viſcera and remoter glands, without heating or irritating the ſyſtem. It has been long conſidered as the moſt effectual of all the antiſcorbutic plants, of which we have the teſtimonies of the moſt celebrated phyſicians, and it has been obſerved that it naturally grows moſt in thoſe high latitudes where the ſcurvy is moſt prevalent. In rheumatic pains of long continuance, accompanied with fever, this plant, combined with Arum and Wood-ſorrel, is highly commended by Sydenham and Lewis. A remarkably volatile and pungent ſpirit, prepared from this herb, and called *Spiritus antiſcorbuticus*, was found by Werlhof to be a uſeful remedy in Palſy and other diſorders requiring an active ſtimulant, given in the doſe of thirty drops ſeveral times a day; but no preparation ſeems ſo beneficial by way of an antiſcorbutic as the freſh plant eaten as a ſalad, or its expreſſed juice drank. If the green herb be infuſed in ale or beer, and put into a bottle well corked, it will communicate to it all its antiſcorbutic virtue or volatile ſpirit in three or four days time. Mr. Ray from his own experience, recommends this ale to ſuch as are troubled with the ſcurvy, to be taken for their ordinary drink. He ſays that it is not ſo good if the Scurvy-graſs has been long infuſed in it; for thereby the earthy and fixed parts are forced from the herb, and communicated to the ale, and the volatile parts either fly away, or being jumbled with the more fixed parts, loſe a great deal of their virtue. The juice of ſcurvy-graſs with the bruiſed herb applied to the face has been recommended as a coſmetic, and ſhould be afterwards waſhed off with a decoction of bran.

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[a] Linn, Woodw. Mſſ. Withering. Lightf. Haller.

2. Stem not branching. Runners procumbent. Both root and ſtem leaves haſtate or ovate, with an angle on both ſides of the baſe. Petiole not toothed or claſping at the baſe. Capſules ovate[b].

Mr. Lightfoot obſerves that the root-leaves are often rounded, as in the preceding, but they are ſmaller; the ſtalks are weak, and commonly trail upon the ground; the ſtem-leaves are haſtate, with an angle or dent on each ſide near the baſe, and ſtand on ſhort peduncles. He is diſpoſed to conſider this only as a variety, having obſerved the limits between it and the *officinalis* to vaniſh inſenſibly into one another.

Sea coaſts of Denmark, Sweden, and Britain, Portland, and about Plymouth. *Lobel.*—Wells in Norfolk. Iſle of Walney, Lancaſhire. Near Llanbadrick church, Angleſea, and in Scotland.

3. Leaves ſucculent, often reddiſh; all oval-lanceolate, many having no ſinuſes, but only ſuch an angle as Linneus deſcribes. Ray affirms that even the loweſt leaves are angular or indented. Dr. Stokes ſays that in his ſpecimens the root-leaves are oval and very entire; the ſtem-leaves ſlightly angular.—According to Mr. Woodward, the ſtem-leaves are arrow-ſhaped at the baſe and ſtem-claſping. Silicles roundiſh, fleſhy, much larger than in the firſt ſpecies, and terminated by a longer ſtyle[c].—Mr. Hudſon doubts whether this may not be a variety of the firſt ſort. Mr. Woodward thinks it to be out of all doubt diſtinct from that; and affirms that at Yarmouth, where it grows abundantly, and elſewhere, it never appears to vary. Mr. Miller ſays that it flowers later in the ſeaſon.

Sea coaſt in muddy ſoils. Brims of the river Thames; Portſmouth, Briſtol, &c. *Ger.*—In the ſalt marſhes of Kent and Eſſex. Iſle of Wight. King's Weſton. Rocks of Inch Columb.

4. Root-leaves very ſmall, underneath very convex and fleſhy, veinleſs, very entire, on long petioles[d]. Stem-leaves haſtate, angular, on ſhort petioles. Not above two inches high. Only a ſtarved variety of the firſt ſort[e]. Mr. Hudſon alſo gives it as a variety: and Mr. Woodward thinks that this and the *officinalis* are certainly the ſame.]

Sea coaſts of Muſcovy and Davis's Straits. [Mountains of Caernarvonſhire, about Llanberys. Near Settle. On the highlands, and in the Orknies.

Theſe three are ſaid to be biennial plants, whereas the firſt or common Scurvy-graſs is perennial. This ſeems ſcarcely probable.

5. Stems and leaves ſmooth, and lie flat upon the ground all round the root: the flowers grow in ſhort axillary tufts, are very ſmall, and have white petals[f].

Nectary of ſix glands, upright, green, blunt, as long as the anthers; four of them oblong, compreſſed, at the baſe of the petals; the other two cylindric, narrower, between the longer ſtamens. Anthers ſhed their duſt before the flower opens. Silicle kidney-heart-ſhaped, terminated by a ſhort conical ſtyle, depreſſed on the ſides, with furrows and ſharp ridges tending towards the edge, where they run out into ſharpiſh points; one of the cells not unfrequently empty, in which caſe the fertile ſeeds expand, filling up almoſt the whole of the ſeed-veſſel, and the ſtyle is bent down towards the empty cell. In this laſt reſpect it accords with *Myagrum*[g]. Lamarck regards the *Myagrum ſaxatile* as belonging to the genus *Cochlearia*. On the contrary the *Coronopus* recedes from the other ſpecies in its decumbent ſtems, pinnatifid leaves, glomerate flowers, and wrinkled creſted ſilicle.

By road-ſides, on rubbiſh, dunghills, &c. Annual; flowering from june to auguſt.

It is acrid, and taſtes like garden Creſs. The aſhes were an ingredient in Mrs. Stephens's once celebrated medicine for the ſtone[h].

6. Root perennial, creeping. Leaves very large, varying much, ſometimes deeply pinnatifid, ſometimes entire, and only crenated[i]. Flowering ſtem a foot or eighteen inches high, branching at top, almoſt naked. Flowers white, in looſe panicles. Silicle nearly ovate[k].—Sides of ditches, among rubbiſh, and in paſtures; flowering in may.

Horſe-radiſh is poſſeſſed of a volatile and pungent quality, which flies off in drying. It impregnates both water and ſpirit by infuſion or by diſtillation, very richly with its active matter. Horſe-radiſh is a moderate, ſtimulating, aperient, and antiſeptic medicine; it ſenſibly promotes perſpiration, urine, and the expectoration of viſcid phlegm, and excites appetite when the ſtomach is weakened or relaxed. It is principally uſed in paralytic and rheumatic complaints, in ſcurvies and impurities of the humors, in cachectic diſorders and in dropſies, particularly thoſe which follow intermitting fevers. Taken in conſiderable quantities, it provokes vomiting. Thomas Bartholin extols the virtues of horſe-radiſh in the ſtone from experience: he affirms that the juice of horſe-radiſh diſſolved a calculus or ſtony concretion that was taken out of a human body.

The ſcraped root is uſed for many culinary purpoſes. An infuſion of it in cold milk, makes one of the ſafeſt and beſt coſmetics.]

7. This ſort is a biennial plant, which uſually grows about a foot and a half high, with upright ſtalks; the flowers are produced in looſe ſpikes at the end of the branches; they are very ſmall, white, and are ſucceeded by ſhort oval pointed ſwelling pods, having no ſtyle at the end, and filled with round ſeeds. It flowers in may, and the ſeeds ripen in july and auguſt. [According to Linneus, it has the ſtature of Turritis.

Native of Germany, and the South of France. Flowering from may to july. Cultivated 1683, by Mr. James Sutherland[l].

8. Root perennial, ſtriking deep. Stems ſeveral, upright, round below, ſomewhat angular at top, herbaceous, annual, ſlightly villoſe, about a foot in

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[b] Linn.

[c] Woodw. Mſſ.

[d] Linn.

[e] Lightf.

[f] Ibid.

[g] Stokes in Withering.

[h] Lightf.

[i] Ray.

[k] Haller.

[l] Hort. kew.

height. Branches ſtrike up from the axils of the upper leaves to the ſame height with the ſtem, ending in corymbed racemes, and all together forming a cloſe compound corymb. Proper peduncles ſlender. Leaves acute, with a very ſhort pile of hairs on both ſides and hoary, irregularly alternate. Calycine leaflets oblong, patulous, blunt, pale, half the length of the petals; which are white, very blunt, from a narrow claw ſpreading very much into an oblong lamina, and caducous. Silicle cordate, ſubdidymous, acuminate with the ſtyle, ſmooth; having only a ſingle ſeed in each cell. Abundant about Vienna, even in the ſuburbs, flowering from may to july[m]. Alſo in ſeveral parts of Germany, Italy and France.]

PROPAGATION AND CULTURE.

1. This ſort is propagated in gardens for medicinal uſes, by ſowing the ſeeds in july, ſoon after they are ripe, in a moiſt ſhady ſpot of ground; and when the plants are come up, they ſhould be thinned, ſo as to be left at about four inches diſtance each way. The plants that are taken out may be tranſplanted into other ſhady borders, if there is occaſion for them, otherwiſe they may be hoed out (as is practiſed for Onions, Carrots, &c.) and at the ſame time all the weeds may be hoed down, ſo as to clear the plants entirely from them, that they may have room to grow ſtrong. In the ſpring theſe plants will be fit for uſe; and thoſe that are ſuffered to remain will run up to ſeed in may, and perfect their ſeeds in june. If this plant is ſown in the ſpring, the ſeeds ſeldom grow well; therefore the beſt time is ſoon after they are ripe. The plants rarely live after producing ſeeds, ſo that it ſhould be ſown every year, to have it for uſe.

The Sea Scurvy-graſs (n. 3) growing in ſalt marſhes, and being overflowed with ſea water almoſt every tide, can hardly be made to grow in a garden, or at moſt to laſt longer there than one year.

6. The Horſe-radiſh is propagated by cuttings or buds from the ſides of the old roots. The beſt ſeaſon for this work is in october or february; the former for dry lands, the latter for moiſt; the ground ſhould be trenched at leaſt two ſpits deep, or more, if it will allow of it. The manner of planting it is as follows: provide yourſelf with a good quantity of offsets, which ſhould have a bud upon their crowns, but it matters not how ſhort they are; therefore the upper part of the roots which are taken up for uſe, may be cut off about two inches long with the bud to it, which is eſteemed the beſt for planting. Then make a trench ten inches deep, in which you ſhould place the offsets at about four or five inches diſtance each way, with the bud upward, covering them up with the mould that was taken out of the trench: then proceed to a ſecond trench in like manner, and continue the ſame till the whole ſpot of ground is planted. After this, level the ſurface of the ground even, obſerving to keep it clear from weeds, until the plants are ſo far advanced, as to be ſtrong enough to overbear and keep them down. With this management the roots of the Horſe Radiſh will be long and ſtraight, and free from ſmall lateral roots, and the ſecond year after planting will be fit for uſe. 'Tis true, they may be taken up the firſt year, but then the roots will be but ſlender; therefore it is the better way to let them remain until the ſecond year. The ground in which this is planted ought to be very rich, otherwiſe the roots will make but a ſmall progreſs.

7, 8. Theſe may be propagated by ſeeds, which if ſown in autumn will more certainly ſucceed than in the ſpring.

[COCHLEARIA. See *Draba* and *Myagrum*.
COCHLEATA. See *Medicago*.
COCKLE. See *Agroſtemma*.
COCK'S-COMB. See *Celoſia*.
COCK'S-FOOT GRASS. See *Dactylis*.
COCK'S-HEAD. See *Hedyſarum*.
COCOA NUT. See *Cocos*.
COCOA PLUM. See *Chryſobalanus*.]

COCOS. (*The fruit is called by the Portugueze Coco and Coquen, from the three holes at the end of the ſhell, giving it the appearance of a monkey's head. Caſp. Bauh.*)
Lin. gen. n. 1223. *Reich.* 1338. *Schreb.* 1692. *Muſ. Cliff.* 11. *Juſſ.* 38. Tenga. *H. M.* I. t. 1—4. *Brown.* 341. Coccos. *Gærtn. t.* 4, 5, 6.
Claſſ. 25. Appendix. Palmæ.—Monoecia Hexandria.
Nat. order of *Palms*.

GENERIC CHARACTER.

* *Male flowers* in the ſame ſpadix with the females.
CAL. *Spathe* univerſal, univalve. *Spadix* branching. *Perianth* three-parted, (ſix-leaved. *G.*) very ſmall: *diviſions* ſubtriquetrous, concave, coloured.
COR. *Petals* three, ovate, acute, patulous. (none. *G.*)
STAM. *Filaments* ſix: ſimple, length of the corolla. *Anthers* ſagittate.
PIST. *Germ* ſcarce manifeſt. *Styles* three, ſhort. *Stigma* obſolete.
PER. abortient.
* *Female flowers* on the ſame ſpadix with the males.
CAL. *Spathe* common with the hermaphrodites, as likewiſe the ſpadix.
Perianth three-parted: (ſix-leaved. *G.*) *diviſions* roundiſh, concave, converging, coloured; permanent.
COR. *Petals* three, permanent, like the calyx, but rather larger. (none. *G.*)
PIST. *Germ* ovate, (three-celled. *G.*) *Style* none. *Stigma* three-lobed.
PER. *Drupe* coriaceous, very large, roundiſh, obſcurely triangular: (ſuperior, berried, one-celled. *G.*)
SEED. *Nut* very large, ſubovate, acuminate, one-celled, valveleſs, obtuſely three-cornered, the baſe perforated by three holes. *Kernel* hollow.

ESSENTIAL CHARACTER.

MALE. *Cal.* three-parted. *Cor.* three-petalled. *Stam.* ſix.
FEM. *Cal.* five-parted. *Cor.* three-petalled. *Stigmas* three. *Drupe* coriaceous.

SPECIES.

1. Cocos nucifera. *Cocoa-nut tree.*
Lin. ſpec. 1658. *Reich.* 4. 633. *Jacqu. amer.* 277. *t.* 169. *pict.* 135. *Mill. dict. Gærtn. fruct.* 1. 16. *Lour. cochinch.* 566.
Coccus. *Lin. hort. cliff.* 483. *fl. zeyl. n.* 391. *Beſl. muſ.* 19. *t.* 5.
Palma Cocos. *Mill. dict. n.* 2.
Palma 1. *Brown. jam.* 341.—indica coccifer angulosa. *Bauh. pin.* 508. *Raii hiſt.* 1356. *Sloan. jam.* 2. 8.—ind. nucifera. *Bauh. hiſt.* 1. 375. *fig.*
Inaja guacuiba. *Marcgr. braſ.* 138.
Maron. *Hern. mex.* 71. fig.
Calappa. *Rumph. amb.* 1. *t.* 1, 2.
Tenga. *Rheed. mal.* 1. *t.* 1—4.
Unarmed; fronds pinnate, leaflets folded back, enſiform.
[2. Cocos butyracea.
Lin. ſyſt. 985. *ſuppl.* 454.
Pindova. *Piſ. braſ.* 62. *fig.*
Unarmed; fronds pinnate, leaflets ſimple.]
3. Cocos guineenſis. *Prickly Pole.*
Lin. ſyſt. 985. *Reich.* 4. 634. *mant.* 137. *Swartz obſ.* 409.
Bactris minor. *Jacqu. amer.* 279. *t.* 171. *f.* 1. *pict.* 135. *t.* 256.—minima. *Gærtn. fruct.* 2. 269. *t.* 139.
Palma gracilis. *Mill. dict. n.* 5. *Sloan. jam.* 2. 121. *Brown. jam.* 343. 4.—americana ſpinoſa. *Bauh. pin.* 507. *Pluk. alm. t.* 103. *f.* 1. *Raii hiſt.* 1363.—ſee 1355. 2? *Park. theat.* 1596. *Ger.* 1338. *emac.* 1522.
The whole ſpiny, ſpines briſtle-ſhaped; fronds diſtant; root creeping.
4. Cocos aculeata. *Great Macaw-tree.*
Swartz prodr. 151. *Jacqu. amer.* 278. t. 169? *Brown. jam.* 344. *n.* 7. *Sloan. jam.* 2. 119. t. 214.
Bactris globoſa minor. *Gærtn. fruct.* 1. 22. t. 9.
Palma. *Mill. dict. n.* 3. *Grew. muſ.* 203. *t.* 16.
Aculeate-ſpiny, trunk fuſiform, fronds pinnate, ſtipes and ſpathes ſpiny.

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[m] Jacquin.

[5. Cocos Nypa.
Lour. cochinch. 567.
Nypa. *Rumph. amb.* 1. 69. *t.* 16.
Unarmed; fronds pinnate; ſpadixes to the male flowers round, to the females roundiſh; drupe grooved.

DESCRIPTIONS, *&c.*

1. [This uſeful tree is common almoſt every where within the Tropics, and is cultivated in both Indies. It is ſuppoſed however to be originally a native of the Eaſt Indies, and is found in a wild ſtate in the Maldives and Ladrones, &c. as alſo in the iſlands of the South ſeas.

The roots are very ſlender, ſimple and flexile; they ariſe ſeparately from the bottom of the trunk, and ſpread in all directions; ſome running to a great depth, while others creep almoſt parallel to the ſurface [a].] The trees grow to a great height; their ſtems are compoſed of ſtrong fibres like network, which lie in ſeveral laminas over each other, out of which come the branches, or rather leaves, which grow twelve or fourteen feet long. The midrib has ſword-ſhaped leaflets, whoſe borders fold backward: the firſt leaves which puſh out from the nut when planted, are very different from thoſe which are afterward produced; for they are very broad, and have many folds in each: whereas the after leaves have a ſtrong midrib, twelve or fourteen feet long, on which the leaflets are placed alternately; theſe are from ſix to eight or nine inches long, and are almoſt triangular, having very ſharp points, and are very ſtiff. The flowers come out round the top of the trunk of the tree in large cluſters; they are incloſed in a large ſpathe or ſheath, and the nuts afterwards are formed in large cluſters, ten or twelve together.

[When all the parts of the flowers have gained a due degree of perfection, the ſpathe ſplits on the under ſide, from the bottom upwards, and expoſes the common bunch, with all its flowers, to the open air: moſt of theſe are males, and fall off gradually as the ſpathe withers, leaving the embryo fruit, which is generally fixed to the lower and ſtronger part of the ſtalk, to increaſe and ripen gradually [b].

This fruit is properly a berried Drupe, ſuperior, very large, ovate, rounded-three-cornered, umbilicate both ways, tawny or reddiſh, becoming finally of a very pale red or browniſh colour: the ſkin is thin and very tough, the ſubſtance under this inveſting the ſhell is extremely fibrous. The ſhell itſelf is of a bony ſubſtance, ovate-three-ſided and acuminate, marked with three raiſed ſpurious ſutures, and having three holes at the baſe cloſed with a black membrane; it is one-celled, valveleſs, and of a dark brown colour. The kernel adheres all round the inner wall of the ſhell, and the cavity is filled with a milky liquor [c].

The kernel in ſome nuts is near an inch thick, and the hollow contains about a pint of a ſweet, delicate, wholeſome, refreſhing liquor. While the nut is growing, all the inſide is full of this liquor; but as the nut grows towards maturity, the kernel begins to ſettle round the inſide of the ſhell, and is ſoft like cream; as the nut ripens, it increaſes in ſubſtance, and becomes hard. The ripe kernel is ſweet enough, but very hard to digeſt, therefore ſeldom eaten, unleſs by ſtrangers; but while it is young and ſoft like pap, ſome will eat it, ſcraping it out with a ſpoon, after they have drunk the liquor [d].

The liquor is very pleaſant, while the nuts are young; as they grow old, it becomes more ſharp and cooling, and far more agreeable to over-heated habits. The kernel is very nouriſhing, is much uſed in making ſoups, curries, &c. and may be ſubſtituted for almonds, in emulſions and apozems, where it can be had freſh [e]. A pure ſweet oil is extracted from it, fit both for the table and medicinal uſes: in the Society iſles they ſcent it with Santal wood and other perfumes, in order to anoint their hair and ſkin with it [f].

Beſide the liquor in the fruit, there is a ſort of wine drawn from the tree called Toddy, which looks like whey. It is ſweet and very pleaſant, but it is to be drunk within twenty-four hours after it is drawn, for afterwards it grows ſour. They who have a great many trees draw a ſpirit from the ſour wine, called *Arack*. It is alſo diſtilled from Rice, &c. but none is ſo much eſteemed for making punch, as this ſort made of Toddy, or the ſap of the Cocoa-nut Tree; but it muſt have a daſh of brandy to hearten it, becauſe this Arack is not ſtrong enough to make good punch of itſelf. This ſort of liquor is chiefly uſed about Goa; and therefore it has the name of Goa Arack [g].

In order to make Arack, the tree muſt be kept from bearing fruit: for this purpoſe, the ſprout which produces the nut, and which ſhoots every month, is cut, and jars faſtened to it to receive the liquor; or the body is bored, and a plug put into the orifice, which is occaſionally taken out when the liquor is wanted: this liquor is ſuffered to ferment, and is diſtilled into the ſpirit called Arack, which far exceeds what is drawn from Rice. If this liquor is expoſed to the ſun, it ſoon turns to vinegar [h].

The coat or huſk of the ſhell is compoſed of ſtrong fibres, and is two or three inches thick. With theſe fibres, after ſoaking them in water, they make ſail-cloth, cables and cordage even for their largeſt ſhips; as alſo oakam, and a variety of yarns, uſed in the conſtruction of ſhips, boats, houſes, &c. The ſhell ſerves for a variety of houſhold veſſels; and when theſe are worn out, they are burnt to make lamp-black for painting, &c [i].

The trunk is formed into gutters, and occaſionally employed for incloſing, and roofing out-houſes, and, being nailed cloſe, is ſo hardy as to reſiſt the weather for many years [k]. The Indians make boats, rafters, and the whole frames of their houſes from the body of this tree. The leaves are uſed for thatching them, and are wrought into mats, baſkets, and many other things for which oſiers are employed in Europe.

The tender ſhoots at the top afford a pleaſant green, or cabbage, but for this the tree is deſtroyed [l]. Cultivated 1739, in Chelſea garden [m].

2. *Univerſal ſpathe* an oblong cylinder, drawn to a point at each end, woody, ſmooth within, marked on the outſide with numerous woody parallel ribs, uniting towards the end it opens longitudinally, falls off after the burſting of the ſpadix, and is from four to ſix feet long. *Spadix* of the ſame length: branchlets very ſimple, a foot in length, very much crowded, ſparſe: bent down by its weight, one or two only in each palm have male flowers; the remaining ſix or eight have male and female flowers together. The *male ſpadix* has the flowers ſupported by a ſmall, ſubovate, rigid bracte: the proper perianth conſiſts of three very ſmall, oblong, flattiſh ſcales, ſubcoaleſcent at the baſe, almoſt upright: petals linear, inclining to columnar, drawn to a point at each end, ſix or eight lines long, bent in different ways above the middle, very white, ſucculent, ſlightly connected at the baſe, alternate with the calycine ſcales, ſmooth and even: filaments one third of the length of the corolla, inſerted into the receptacle, ſubcoaleſcent; anthers linear, the length of the filament, verſatile, bifid at the baſe, two-celled; pollen very white and ſmall, ſhaped like ſaw-duſt. Theſe male flowers fall off with the leaſt touch, making a great heap under the tree.—The *androgynous ſpadixes* have male flowers like the former, but more permanent: a few only are mixed with the females; but above, where there are no females, they are crowded cloſe together: petals thinner than the former; filaments ſhorter; anthers horned.—Female flowers crowded, imbricate, ſup-

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[a] Browne. [b] Ibid. [c] Gærtner. [d] Dampier. [e] Browne.

[f] Forſter eſcul. [g] Dampier in his account of Guam. [h] Long's Jamaica 3. 738. [i] Ives's voyage to India. [k] Long. [l] Browne. [m] Hort. kew.

ported with a triple bracte, looſer than the other, and very flat. Proper perianth none, unleſs the bracte or outer petals be taken for it: petals ſix, the three outer larger, ovate, concave, broad at the baſe, roundiſh, covering moſt of the inner part of the flower, more rude, cartilaginous; the three inner ſhorter, white, fleſhy, thinner: Nectary corollaceous, tubular, very thin, one third of the length of the petals, ſurrounding the greater part of the germ, very white: Germ ſubacuminate, very ſmooth, the height of the inner petal: Stigmas three, longiſh, ſmooth on the outſide, roughiſh on the inſide, almoſt upright. *Drupe* obovate, one-celled, ſucculent, very ſmooth, having a point at the end, ſurrounded at the baſe with the hardened permanent corolla. *Nut* covered with a cartilaginous ſkin and fibrous pulp; when dry very hard, a little ſtriated, convex on one ſide, almoſt flat on the other, oblong, ſomewhat acute at both ends, perforated at the baſe with three oblique holes. *Kernel* cartilaginous, very hard, but having the ſame taſte as in the common Cocoa nut.

The pulp of the nut is very mucilaginous, and is uſed for fatting hogs. An oil or butter prepared from it is in conſtant uſe among the Indians in South America, both in food and medicine [n].

3. Root knotty, round, thicker than the trunk, ſhort, horizontally bent in directly below the ſurface, creeping, and preſently putting out another trunk, ſo as to make a thicket, whilſt it fixes itſelf firmly in the ſoil by ſlender fibrous roots. Trunk erect, armed with very numerous prickles, and furniſhed with ſome ſemilacerate withering ſtipes; it is about an inch in diameter, and in open ſituations ſeldom exceeds twelve feet in height; in woods it grows ſomewhat higher. The bark is browniſh. Leaves ſubfrondoſe, few, claſping at the baſe, and pinnate; rib prickly; leaflets enſiform, acuminate, ſhining, flat, very ſlightly folded back at the baſe, ſerrate-prickly, unarmed, or with a few prickles only on both ſides, commonly alternate, ſometimes oppoſite, inconſtant in number. Spathes axillary, ſolitary, ſpreading, permanent a long time after the ripening of the fruits, ſo that two or three withered leaves are frequently ſeen below the frond, with a ſpathe and ſpadix in their axils. Flowers with a very ſlight tinge of yellow, and without ſcent [o]. Calyx ſometimes three-leaved: leaflets lanceolate, acuminate, many times ſmaller than the petals. Corolla triquetrous, frequently three-parted almoſt to the baſe, like a three-petalled corolla [p]. Fruits dark purple, the ſize of a common Cherry, containing an acid juice, of which the Americans make a ſort of wine: they are eatable, but not pleaſant [q]. However, they furniſh the wild hogs with abundance of food in Jamaica [r]. Gærtner deſcribes them as roundiſh drupes, flatted a little; the ſkin coriaceous; the nut ſubglobular, of a ſtony conſiſtence, very thick, roughened all over with little holes and tubercles, perforated by three holes in the middle of the circuit, ſtriated in rays at their mouths: the two ſmaller holes are blind, but the third is pervious, and leads to the central cell. Seed conoid, lying down horizontally, tubercled; the embryo placed in a very prominent papilla at the baſe of the cone.

Canes are made of the trunk deprived of its bark; they are black, ſhining, jointed, and very light: the French call them *Cannes de Tobago*, and they are ſometimes brought to Europe. From this uſe of them for walking canes Jacquin has named this Palm *Bactris*, απο του βακτρου [s]. The outward part is extremely hard and elaſtic, and looks much like whalebone; it is fit for bows and rammers [t].

Native of Carthagena in South America.

4. The great Macaw Tree has a trunk the thickneſs of the human body, riſes to thirty feet in height, has an aſh-coloured bark, and is very thick ſet with ſharp black prickles, of different lengths, placed uſually in rings. The pinnas of the fronds are very long, and the whole is thick ſet with prickles. The fruit is as large as a Crab, and of the ſame ſhape: under a green ſkin it has a thin ſweetiſh aſtringent pulp; and within that a nut full of a white ſweet eatable kernel [u].

The fruit is thus more particularly deſcribed by Gærtner. It is globular, flatted a little, about an inch in diameter, terminated by three acuminate ſeſſile ſtigmas, and retaining the ſix-leaved calyx at the baſe: ſkin thick, coriaceous: pulp fibrous, ſucculent, finely fungoſe and coriaceous, adhering to the nut; which is globular, ſublenticular, of a ſtony ſubſtance, thick, one-celled, with three holes on the ſide, two of which are blind, and the third pervious. Seed ſingle, ſubglobular, flattiſh or ſlightly depreſſed near the hole of the ſhell, netted all over with arched ſtreaks, of a brown bay colour. It differs from the Cocoa in the horizontal ſituation of the embryo.

According to Jacquin, it differs from the other Cocoas in having a thicker trunk with fewer prickles, and the ribs prickly on both ſides. But it is not certain that his C. aculeatus or *Grougrou* is the ſame with ours.

Browne ſays, that the huſks both of this and the ſmall Macaw-tree are full of oil, and the nut black and ſhining. The Negroes ſay that it yields the true Palm-oil. The outſide of the trunk is made into laths, bows and darts.

It is common in the Caribbee iſlands: and was cultivated by Mr. Miller in 1731 [x].

5. This is a very thick Palm, only four feet high, frequently ſhorter, or even without any ſtem. Fronds fifteen feet long, almoſt upright, irregularly pinnate, with a ſubcylindric rachis or midrib. Leaflets four feet long, ſubulate-enſiform, with a long point; they are ſimply plaited, diſtant at the baſe, ſmooth, coriaceous. Flowers terminating, on a long erect thick branching bracted peduncle: the ſpadixes of the male lateral, round, reflex, covered all over with floſcules; of the female, roundiſh, ſurrounded with floſcules. Spathe none, except the bractes, which are ſubacute, ſhort and diſtant. Drupe ovate-turbinate, compreſſed and lobed, having ſeveral grooves on it, and being three or four inches in length: ſkin fibrous thick ſmooth brown: ſhell bony roundiſh, two inches in diameter. It is ſuppoſed to be a different ſpecies from C. nucifera: the fronds and fruits agree, but the ſpadixes are different.

It is very frequent in ſalt-marſhes, and at the muddy mouths of rivers in Cochinchina, Cambodia, the Philippine iſlands, the ſtraits of Malacca, &c. [y]]

PROPAGATION AND CULTURE.

1. This tree is propagated by planting the nuts in places where they are deſigned to remain; for it will not bear tranſplanting, unleſs the operation is performed while the trees are very young, for their roots ſhoot deep and wide; ſo that if theſe are cut or broken, the plants ſeldom ſurvive it; which is generally the caſe with moſt of the Palms.

Where any perſons are deſirous of having a plant or two of this ſort, they ſhould procure ſome freſh nuts from the neareſt place of their growth, which, on their arrival in England, ſhould be buried in a warm bed of tanners bark, laying them on one ſide, that the young ſhoot which comes out from one of the three holes may not be injured by wet, covering them about ſix inches deep with the tan. In this ſituation, if the nuts are good, they will put out ſhoots in ſix weeks or two months, ſo ſhould be then carefully taken up, and each planted in a ſeparate pot filled with kitchen-garden earth, and plunged into the tan-bed in the ſtove, where the plants ſhould always remain, for they are too tender to thrive in any other ſituation; but as the plants advance in their growth, they ſhould be ſhifted into larger pots or tubs, being careful not to cut or tear their roots in the operation.

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[n] Mutis in Linn. ſuppl. [o] Jacquin. [p] Swartz.
[q] Jacquin. [r] Browne. [s] Jacquin. See Bactris minor.
[t] Browne.

[u] Sloane. [x] Hort. kew. [y] Loureiro.

Few of the nuts that are brought to England are ripe, being commonly gathered in an unripe ſtate, that they may keep during their paſſage. The beſt way to bring them for planting, is to put ſome that are fully ripe in dry ſand in a tub, where vermin cannot come to them. Theſe will often ſprout in their paſſage, which is an advantage, becauſe they may be immediately planted into pots of earth, and plunged into the bark-bed.

Theſe trees make conſiderable progreſs in the Weſt-Indies, but in Europe they are many years before they advance to any conſiderable height; the young leaves however being pretty large, they make a good appearance among other tender exotic plants in two or three years.

The other ſorts muſt be propagated by ſeeds in the ſame way. For the farther management of them ſee the article Phoenix.

[Cocoxihuitl. See *Bocconia*.
Codagam. See *Hydrocotyle*.
Codaga-pala. See *Nerium*.
Codaga-pilava. See *Morinda*.
Codda-panna. See *Corypha*.
Coddam-pulli. See *Cambogia*.
Codded Corn-violet. See *Campanula hybrida*.

CODIA. (*From* Κωδεια, *globulus, a little ball; the flowers growing in a ſmall head.*)

Forſt. gen. n. 30. *Lin. ſuppl.* 33. *Schreb.* 675. *Juſſ.* 430.

Claſſ. 8. 2. Octandria Digynia.

GENERIC CHARACTER.

Cal. *common,* four-leaved; *leaves* reflected below the head: *proper* four-leaved; leaflets elliptic, erect.

Cor. *Petals* four, linear.

Stam. *Filaments* eight, filiform, two, each growing to the baſe of a petal, longer than the corolla. *Anthers* ovate-angulate.

Pist. *Germ* very ſmall, ſuperior, extremely villoſe. *Styles* two, ſubulate, the length of the ſtamens. *Stigmas* ſimple.

Recept. common villoſe.

Obs. *It has a very great affinity to* Brunia. *The fruit, when known, muſt determine whether it be a ſeparate genus. Many of the* Brunias *have two ſtyles.*

ESSENTIAL CHARACTER.

Cal. four-leaved. *Pet.* four. *Common receptacle involucred.*

SPECIES.

1. Codia montana.

Lin. ſyſt. 376. *ſuppl.* 228. *Forſt. fl. auſtr. n.* 175.

DESCRIPTION, &c.

Leaves oppoſite, petioled, elliptic, very ſmooth, entire, obtuſe. Heads globular, terminating and axillary, very ſhort, peduncled.—Perhaps a ſpecies of Brunia. A ſhrub, native of New Caledonia [*]. Found there the 8th of ſeptember 1774.

Codiæum. See *Croton*.
Codi-Avanacu. See *Tragia*.
Codlin-tree. See *Pyrus Malus*.
Codlins and Cream. See *Epilobium*.

CODON. (*From* Κωδων, *tintinnabulum, a little bell. So called from the form of the flower.*)

Auctore Dav. Royeno. *Lin. gen. Reich.* n. 563. *Schreb.* 715. *Juſſ.* 422. *Gærtn. t.* 95.

Claſſ. 10. 1. Decandria Monogynia.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, ten-parted; *leaflets* ſubulate, permanent, ſomewhat erect; alternately ſhorter.

Cor. one-petalled, bell-ſhaped, toruloſe at the baſe: *Border* ten-parted, equal.

Nectary ten-celled, conſiſting of ten ſcales inſerted into the claws of the ſtamens, converging, covering the receptacle.

Stam. *Filaments* ten, length of the corolla. *Anthers* thick.

Pist. *Germ* ſuperior, conic. *Style* ſimple, length of the ſtamens. *Stigmas* two, long, ſetaceous, divergent.

Per. two-celled.

Seeds ſeveral, roundiſh, echinate, with ſoft papillæ, ſituated in a juiceleſs, coloured pulp.

ESSENTIAL CHARACTER.

Cal. ten-parted, permanent; leaflets alternately ſhorter. *Cor.* bell-ſhaped, ten-cleft. *Nect.* ten-celled, compoſed of ten ſcales. *Peric.* two-celled; containing ſeveral ſeeds.

SPECIES.

1. Codon Royeni.

Lin. ſyſt. 397. *Reich.* 2. 264.

C. aculeatum. *Gærtn. fruct.* 2. 88.

DESCRIPTION, &c.

Stem herbaceous, firm, eighteen inches in height, round, with riſing branches. Leaves alternate, petioled, cordate-ovate, ſubrepand, undivided, acuminate, ſubcoriaceous, ſmooth, without veins on the upper ſurface. Flowers ſupra-axillary, ſolitary, peduncled, having the appearance of the corolla of *Atropa Belladonna,* whitiſh, with ten purple ſtreaks on the outſide. The whole herb is ſtriated [†].

The fruit is a capſule, contained within the ſegments of the calyx, which are linear, keeled, converging and prickly; it is of an ovate-acuminate ſhape, terminated by the compreſſed forked ſtyle, and marked along both ſides with a ſharp ſuture; in other parts it is ſmooth; it has two valves, and within is divided into two cells: the partition is contrary to the valves, is cloven and ſpongy next the axis. Seeds numerous, ſmall, variouſly angular, of a ſhining blood-red, and covered with ſoft papillæ of the ſame colour [‡].

Coeli Rosa. See *Agroſtemma*.
Coelit Lawan. See *Laurus*.]

COFFEA. (*So named from the Kingdom of Caffa in Africa, where it grows abundantly.*)

Lin. gen. n. 230. *Reich.* 247. *Schreb.* 314. *Gærtn. t.* 25. *Juſſ.* 204. Coffe *Raii Juſſ. A. G.* 1713. *t.* 7. *Jacqu. Amer.* 67.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Stellatæ γ. Rubiaceæ.* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* five-toothed; very ſmall, ſuperior.

Cor. one-petalled, ſalver-ſhaped. *Tube* cylindric, ſlender, many times longer than the calyx. *Border* flat, five-parted, longer than the tube: *diviſions* lance-ſhaped: ſides rolled back.

Stam. *Filaments* five, ſubulate, placed on the tube of the corolla. *Anthers* linear, incumbent, length of the filaments.

Pist. *Germ* roundiſh, inferior. *Style* ſimple, length of the corolla. *Stigmas* two, reflected, ſubulate, thickiſh.

Per. *Berry* roundiſh, umbilicated by a one or two-celled puncture.

Seeds one or two, ſolitary, elliptically-hemiſpherical, gibbous on one ſide, flat on the other, where it is furrowed longitudinally; involved in an aril.

Obs. Occidental Coffee Jacqu. *differs in having a four-cleft flower, and ſingle ſeed four-lobed at bottom.*

ESSENTIAL CHARACTER.

Cor. ſalver-ſhaped. *Stam.* upon the tube. *Berry* inferior, two-ſeeded. *Seeds* arilled.

SPECIES.

1. Coffea arabica. *Eaſtern Coffee-tree.*

Lin. ſpec. 245. *ſyſt.* 215. *Reich.* 478. *amœn.* 6. *mat. med.* 62. *hort. cliff.* 59. *upſ.* 41. *Gærtn. fruct.* 1. 118. *Elliſ. monogr. Dougl. monogr. Blackw. t.* 337. *Moſeley monogr. Plenck, ic. t.* 130. *Lour. cochinch.* 144.

Jaſminum arabicum. *Juſſieu act. par.* 1713. *p.* 388. *t.* 7. *Till. piſ. t.* 32.

Euonymo ſimilis, &c. *Bauh. pin.* 428. *Pluk. phyt. t.* 272. *f.* 1.

Bon. *Alp. Ægypt. t.* 36. *Bauh. hiſt.* 1. 422. *Raii hiſt.* 1691. *Park. theat.* 1622.

Flowers five-cleft, berries two-ſeeded.

[2. Coffea occidentalis. *Weſtern Coffee-tree.*

Lin. ſpec. 246. *Reich.* 479. *Jacqu. amer.* 67. *t.* 47.

Pavetta. *Brown. jam.* 142. *t.* 6. *f.* 1.

Jaſminum arboreſcens. *Plum. ſpec.* 17. *ic.* 156. *f.* 2. *Sloan. jam.* 2. 97. *n.* 19. not *f.* 205. *f.* 1.

Flowers four-cleft, berries one-ſeeded.

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[*] Linn. ſuppl.

[†] Royen in Linn. ſyſt.

[‡] Gærtner.

3. Coffea racemoſa.
Lour. cochinch. 145.
Very much branched, leaves rugged, racemes terminating.

4. Coffea Zanguebariæ.
Lour. cochinch. 145.
Corollas ſix-cleft, fruit angular-nerved.

5. Coffea guianenſis.
Aublet. guian. 150. *t.* 57.
Flowers four-cleft, berries ſmall violet-coloured, two-ſeeded.

6. Coffea paniculata.
Aublet. guian. 152. *t.* 58.
Branches quadrangular, leaves ovate-oblong, acute, corollas four-cleft, berries two-ſeeded.

7. Coffea ſambucina.
Forſt. flor. auſtral. n. 92.
Leaves oblong-lanceolate, acute, cymes corymbed, terminating.

8. Coffea opulina.
Forſt. flor. auſtral. n. 93.
Leaves ovate-lanceolate, cymes contracted, globular, terminating.

9. Coffea odorata.
Forſt. flor. auſtral. n. 94.
Leaves ovate, acute, cymes corymbed, axillary.

10. Coffea triflora.
Forſt. flor. auſtral. n. 95.
Leaves ovate-lanceolate, acuminate, peduncles terminating three together, one-flowered.]

DESCRIPTIONS, *&c.*

1. The Coffee-tree ſeldom riſes more than ſixteen or eighteen feet high in its native country, or more than ten or twelve in Europe. The main ſtem grows upright, and is covered with a light brown bark. Branches horizontal, oppoſite, brachiate at every joint, [long, ſimple or undivided, ſlender, ſmooth, lax, and inclined to bend downwards;] the lower ones longeſt, the others gradually decreaſing to the top, ſo as to form a pyramid. Leaves oppoſite, when fully grown four or five inches long, and an inch and half broad in the middle, ovate-lanceolate, the borders waved, the ſurface of a lucid green, [ſmooth, beneath paler. Petiole only two or three lines in length; from the ſides of the midrib, which is a continuation of it, iſſue twenty or more ſecretory punctures. The leaves generally continue three years[a].] The flowers are produced in cluſters (two to four) at the baſe of the leaves, ſitting cloſe to the branches: they are of a pure white, with a very grateful odour, but of ſhort duration: they are ſucceeded by berries, which are firſt green, but turn red when fully grown, and change to black when ripe. [They are of an oblong ſpheroidal form, with a little circular area at the top, within which is a callous dot; the pulp is pale, inſipid and gelatinous; within it is two-celled; and the partition is fleſhy and vaſcular: this is the only receptacle, and penetrates the cleft of the ſeeds. In each cell is one ſeed only, of an elliptic form, convex on one ſide, flat on the other, with a longitudinal cleft, of a pale glaucous colour, looſely covered with an elaſtic, diaphanous aril, the ſubſtance of paper[b].

The liquor which we call Coffee, or Coffea, prepared from the berry of this tree, is ſaid to have been drunk in Ethiopia from time immemorial[c].

The Galla, a wandering nation of Africa, in their incurſions on Abyſſinia, being obliged to traverſe immenſe deſerts, and being alſo deſirous of falling on the Abyſſinians without warning, that they may be encumbered as little as poſſible with baggage, carry nothing with them to eat, but Coffee roaſted till it can be pulverized, and then mixed with butter into balls, and put into a leathern bag. One of theſe about the ſize of a billiard ball, keeps them, they ſay, in ſtrength and ſpirits during a whole day's fatigue, better than a loaf of bread, or a meal of meat[d]. It was introduced into Aden in Arabia from Perſia, by Gemaleddin, only about the middle of the fifteenth century. Not long after, it reached Mecca, Medina, &c. and Grand Cairo. Hence it continued its progreſs to Damaſcus and Aleppo; and in 1554 became known at Conſtantinople; being introduced there by two perſons whoſe names were *Shems* and *Hekin*; one from Damaſcus, the other from Aleppo. Each of theſe men opened a public Coffee-houſe in that city.

It is not certain at what time the uſe of Coffee paſſed from Conſtantinople to the weſtern parts of Europe; but it is probable that the Venetians, on account of the proximity of their dominions, and their great trade to the Levant, were the firſt acquainted with it; and Pietro della Valle, a Venetian, in a letter from Conſtantinople written in 1615, tells his friend, that upon his return he ſhould bring with him ſome Coffee, which he believed was a thing unknown in his country.

M. Thevenot, the French traveller into the Eaſt, at his return in 1657, brought with him to Paris ſome Coffee for his own uſe. It was known ſome years ſooner at Marſeilles, namely in 1644. Monſ. Du Tour, who wrote on Coffee in 1685, ſays that the French knew nothing of it until 1645.—Monſ. La Roque, who publiſhed his journey into Arabia Felix in 1715, contends that his father, having been with Monſ. de la Haye, the French ambaſſador at Conſtantinople, did, when he returned to Marſeilles in 1644, drink Coffee every day. He allows notwithſtanding that Thevenot was the firſt who taught the French to drink it[e]. However, till the year 1660, it was drunk only by ſuch as had been accuſtomed to it in the Levant; but that year ſome bales were imported from Egypt; and in 1671 a coffee-houſe was opened at Marſeilles.

Before the year 1669, Coffee was not known at Paris, except at M. Thevenot's, and ſome of his friends. This year it was effectually introduced by Solyman Aga, ambaſſador from Sultan Mahomet IV.; and two years after Paſcal, an Armenian, ſold it publicly at the Foire St. Germain, and afterwards ſet up a coffee-houſe on the Quai de l'Ecole; but meeting with little encouragement, he left Paris, and came to London. However, not long after, ſpacious rooms were fitted up at Paris in an elegant manner, for ſelling Coffee and other refreſhments; and in a ſhort time the number of coffee-houſes increaſed to three hundred.

The uſe of Coffee was introduced into London ſome years earlier: for in 1652, Mr. Daniel Edwards, a Turkey merchant, brought home with him a Raguſian Greek ſervant, whoſe name was Paſqua Roſſee, and who underſtood the roaſting and making of Coffee. This ſervant was the firſt who ſold Coffee, and kept a houſe for this purpoſe in George yard, Lombard ſtreet. Or rather, according to Mr. Houghton, in a ſhed in the church-yard of St. Michael's Cornhill, which is now, ſays he, (1701) a ſcrivener's brave houſe. Mr. H. adds, that one Raſtall, whom he knew, went to Leghorn in 1651, and there found a coffee-houſe: that he met Mr. Daniel Edwards there, with his Greek ſervant, and that Mr. E. was the firſt who brought the uſe of Coffee here, except it was the famous Dr. Harvey, who ſome ſay did frequently uſe it. Paſqua, being no freeman, the ale-ſellers petitioned the Lord Mayor againſt him. This made Alderman Hodges, whoſe daughter Mr. E. married, join his coachman *Bowman*, who was free, Paſqua's partner. And thus Mr. Raſtall found them in 1654. But Paſqua, for ſome miſdemeanor, was forced to run the country, and Bowman by his trade, and a contribution of 1000 ſix-pences, turned the ſhed to a houſe. Bowman's apprentices were firſt John Painter, then Humphry, from whoſe wife Mr. H. had this account[f]. The firſt mention of Coffee in our ſtatute books was in 1660. 12 Car. II. cap. 24[g].

In 1688, Mr. Ray affirms, that London might rival Grand Cairo, in the number of its Coffee houſes, and that they were to be found not only in the capital, but in every town of note in England. Probably the ill-judged proclamation of Charles II. in 1675 againſt Coffee-houſes, contributed much to eſtabliſh them.

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[a] The paſſages between crotchets are from Linneus's *hortus Cliffortianus.*
[b] Gærtner.
[c] Ellis.
[d] *Bruce Abyſſ.* 2. 226.
[e] Moſeley.
[f] Collections, 3. 125.
[g] Ellis.

The firſt European author who has made any mention of Coffee, is Rauwolff, who was in the Levant in 1573; but the firſt who has particularly deſcribed it is Proſper Alpinus, in his Medicina Ægyptiorum, 1591, and in his hiſtory of Egyptian plants, publiſhed at Venice in 1592.

Fauſtus Naironus Baineſius wrote the firſt treatiſe expreſsly on Coffee. It was printed at Rome in 1671, and intituled, *De ſaluberrima potione Cahu, ſeu Cafe, nuncupata*[h].

Two Engliſh travellers notice this beverage at the very beginning of the 17th century. Biddulph about 1603, and William Finch in 1607. The former ſays—"the Turks have for their moſt common drink *Coffa*, which is a black kind of drink, made of a kind of pulſe like peas, called *Coava*." The latter, "that the people in the iſland of Socotora have, for their beſt entertainment, a China diſh of *Cobo*, a black bitteriſh drink, made of a berry like a bay berry, brought from Mecca, ſupped off hot[i]."

Lord Bacon makes mention of it in 1624.

Mr. Ray, in his hiſtory of plants, publiſhed in 1688, ſpeaking of it as a drink very much in uſe, ſuppoſes that the Arabs deſtroyed the vegetable quality of the ſeeds, in order to confine their commodity within themſelves; and adds, that he wondered the neighbouring nations did not contrive to bring away ſome found ſeeds or living plants, in order to ſhare in ſo lucrative a trade.

This was ſoon done: for Nicholas Witſen, burgomaſter of Amſterdam, and governor of the Eaſt-India Company, deſired Van Hoorn, governor of Batavia, to procure from Mocha, in Arabia Felix, ſome berries of the Coffee-tree, to be ſown at Batavia; which he having accordingly done, and about the year 1690 having raiſed many plants from ſeeds, ſent one over to governor Witſen, who preſented it to the garden at Amſterdam: it there bore fruit, which in a ſhort time produced many young plants[k]. From theſe the Eaſt Indies, and moſt of the gardens in Europe have been furniſhed; and ſo early as the year 1696, the Coffee-tree was cultivated at Fulham by Biſhop Compton[l].

In 1714, the magiſtrates of Amſterdam preſented Louis XIV. with a Coffee-tree, which was ſent to the royal garden at Marly, under the care of M. de Juſſieu, who had written a memoir, printed in the hiſtory of the academy of ſciences for 1713, deſcribing the characters of the genus, with a figure of it, from a ſmaller tree, which he had received from M. Pancras, burgomaſter of Amſterdam, and director of the botanic garden there.

In 1718, the Dutch colony at Surinam began firſt to plant Coffee; and in 1722, M. de la Motte Aigron, governor of Cayenne, contrived by an artifice to bring away a plant from Surinam, which in the year 1725 had produced many thouſands.

Rochon in his account of Madagaſcar aſſerts, that in 1718, the inhabitants of the iſle of Bourbon ſent to Moka and Aden for ſome young plants of the Coffee-tree, which being cultivated with care, became in a few years very productive, and the iſland ſoon afforded the French Eaſt India Company a very important article of trade[m].

In 1727, the French, perceiving that this acquiſition might be of great advantage in their other colonies, conveyed ſome of the plants to Martinico. Monſ. Fuſee Aublet indeed affirms, that Monſ. Clieux carried the firſt Coffee plant to Martinico in 1720; and that the French Eaſt India Company ſent ſome plants to the iſle of Bourbon in 1717; that one plant only ſurvived, which bore fruit in 1720, and many were produced from it[n].

From Martinico it moſt probably ſpread to the neighbouring iſlands: for in the year 1732, it was cultivated in Jamaica, and an act was paſſed to encourage its growth in that iſland[o].

The firſt plant which appeared in Jamaica, was carried there by Sir Nicholas Laws, and placed in the garden of Townwell, at preſent called Temple Hall, the property of Mr. Lutterell. But he dying in 1731, did not ſee the cultivation of it make any conſiderable progreſs[p].

In the year 1752 the export of Coffee from Jamaica was rated at 60,000 pounds weight. In 1775 it was 440,000 pounds.

The Abbé Raynal ſays, that 12,550,000 pounds weight is annually exported from Arabia Felix[q].

Dr. Patrick Browne, who reſided many years in Jamaica, informs us that the Coffee-tree thrives beſt in a rich ſoil, and cool ſhaded ſituation, where it produces ſo great a quantity of fruit, that the branches can hardly ſuſtain the weight, and even the very trunk yields to the load. This fruit is large and ſucculent, and the berries lax and clammy: they are gathered when only half ripe; and inſtead of being ſtripped of their pulp, and the ſeeds being carried down to the low lands to be dried, they are left ſoaking in their clammy juices, to dry ſlowly in a damp air. This alone will ſufficiently account for the inferiority of the Jamaica Coffee to the Arabian, which grows in a ſandy, dry, hot ſoil, where the berries have but little pulp, and are ſoon dried, ſpread upon mats and expoſed to the ſun.

Dr. Browne however is of opinion that the Weſt India iſlands might furniſh Coffee equal in quality to the Turkey, if the following remarks were attended to.

1. New Coffee will never parch or mix well, from the natural clammineſs of the juices.
2. The ſmaller the grain, and the leſs pulp the berry has, the better the Coffee, and the ſooner it will parch, mix, and acquire a flavour.
3. The drier the ſoil, and the warmer the ſituation, the better the Coffee it produces will be.
4. The larger and more ſucculent the grain, the worſe it will be.
5. The worſt Coffee produced in America will, in a courſe of years, not exceeding ten or fourteen, be as good as the beſt we now have from Turkey; due care being taken to keep it in a dry place, and to preſerve it properly.
6. Small-grained Coffee, or that which is produced in a dry ſoil and warm ſituation, will in about three years be as good, as that which is commonly uſed in the coffee-houſes at London.

Theſe, the doctor tells us, are facts founded on repeated experiments.]

Mr. Miller adviſes thoſe who cultivate the Coffee tree in the Weſt Indies, firſt, to make choice of a ſoil rather dry than moiſt. Secondly, to permit the berries to remain upon the trees, till the ſkin ſhrivels and turns black. Thirdly, to gather them, or rather ſhake them from the trees when they are perfectly dry, ſpreading them upon cloths or mats in the ſun to dry, as they do in Arabia Felix, carrying them every evening under cover; and when they are perfectly dry, deprived of their huſks and winnowed, to pack them up carefully in bags, and when they are ſhipped, not to ſend them with rum or other goods from which they may imbibe any diſagreeable flavour.

[Dr. Browne recommends ſuch as poſſeſs large Coffee-walks to have a convenient platform to dry the ſeeds on; and he thinks it would be worth while to try whether ſweating would deſtroy the clammineſs of the large berries. They ſhould however be pulped and dried as ſoon as poſſible; then huſked and cleared from all the outward coverings. This is generally done in Jamaica by pounding the dried berries lightly in a large wooden mortar; they are then winnowed, cleared, expoſed afreſh to the ſun for ſome days, and then caſked for the market. If it be not well dried, it is apt to heat on board ſhips, and then it loſes all its flavour[r].

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[h] Moſeley.

[i] Purchas, p. 1340, 1351, and 419 in Moſeley.

[k] Ellis.

[l] Hort. kew. from Douglas.

[m] Rochon's Madagaſcar, introd. p. xix. engl. edit.

[n] Moſeley, p. 34.

[o] Ellis.

[p] Literary Magazine for april 1790, and Moſeley.

[q] Moſeley.

Long, in his hiſtory of Jamaica (1774) obſerves that the berries ought never to be gathered until the pulp is exhaled, and the coat ſuffered to become thoroughly dry and ſhrivelled, ſo that they appear ready to drop off, and actually fall upon a ſlight touch. In confirmation of this, he affirms, that he has experienced the beſt flavoured Coffee to have been collected from under the trees, where it had recently fallen, quite dry, black and ſhrivelled. He adds, that the trees ſhould be planted at diſtances proportioned to their growth, which in the lowlands is five feet, in the mountains ten feet or more: and that the produce of a good tree is from one pound and a half to two pounds weight.

He thinks that the mountain Coffee might be improved by ſending the berries to the lowlands, where the heat is greater, and the air more dry; and by having a drying-houſe under a roof, with one or more platforms, admitting a free current of air, and excluding the rain and ſunſhine.

He informs us that the huſk is no longer beat off in mortars, but by rollers turned by mules, that wooden ones are preferable to ſtone or iron, and that the moſt approved machine, invented by Mr. Latham, will clean one hundred hogſheads in a day.

Dr. Fothergill ſuggeſts very reaſonably that the removal of the Coffee-tree from the dry, ſterile, ſandy ſoil of Arabia, into the rich deep ſtaple of Batavia, where the quantity of wet that falls in the rainy ſeaſon is exceſſive; its removal thence into Holland and France, and its tranſportation afterwards to a climate much more abounding with moiſture than that of which it was a native, may ſo far have altered the quality of the fruit, as that it may not be eaſily brought back to its original excellence. This however he thinks may be done, by making the plantations in ſoils as ſimilar to its natural one as poſſible. He alſo hints, that the fruit of young trees is in general more inſipid, or has a leſs refined taſte, than at a more advanced age; that probably this may be the caſe in the Coffee-tree; and he affirms that in old trees the fruit is ſmaller. The French, both in the Eaſt and Weſt Indies, cultivate Coffee with great attention, and accordingly theirs is much ſuperior to ours, and is even thought by ſome to be nearly equal to the beſt Turkey. They are alſo more careful in ſhipping it home, not mixing it, as we do, with cargoes of Rum and coarſe Sugars, which communicate a taſte ſcarcely to be driven off by fire. But it ought to be obſerved, that whilſt the induſtry and genius of the French Coffee planters have been cheriſhed; ours have been reſtricted by a duty, which leſſens the conſumption[s].

Dr. Fothergill alſo thinks it probable that our plantation Coffee is uſed too ſoon; and that one part of the excellence of the Mocha Coffee may ariſe from the intervention of between two and three years between its growth and conſumption. In confirmation of this, the doctor found that ſome raw Coffee which was ſent him from the Weſt Indies, and was ſo ill-taſted as to be unfit for uſe, being laid in a very dry cloſet, was tried again the year after, and found to be greatly amended. He therefore recommends the importing it without other goods; and the keeping it in dry, airy places, till ſuch a quantity is got together, as may be ſufficient to load a veſſel[t].]

This ſcheme, ſays Mr. Miller, of keeping the American Coffee-berries ſeveral years, is contrary to all the experience I have had, and the information I can obtain from thoſe who have ſeen the whole management of Coffee in Arabia. Two gentlemen who had lived there ſome years aſſured me, that the berries, when firſt gathered, were much better than thoſe which are kept any time. And a curious gentleman who reſided in Barbadoes two years alſo told me, that he never drank better Coffee in any part of the world, than what he made from the freſh berries which he gathered himſelf, and roaſted as he had occaſion for them. This account is confirmed by trials with berries produced in our Engliſh ſtoves, which make a better flavoured liquor, than the beſt Arabian Coffee berries that can be procured in England.

[The difficulties attending the keeping Coffee any length of time to the planter are alſo apparent. His profit is not ſufficient to enable him to keep it ſo long as is propoſed: and a tree in a rich ſoil producing almoſt twice as much as one in a light one, whereas the difference in price in the European markets between ſmall well-prepared Coffee, and that which is of the worſt kind is only from fifteen to twenty *per cent.* the planters find their account in making their Coffee-walks in the richeſt ſoil; where alſo the trees laſt a much longer time. The dampneſs of the climate in the iſlands is ſuch, that it is very difficult to dry the berries well; and the negroes being lazy, ignorant, and frequently ill-diſpoſed, will not attend properly to the gathering of them perfectly ripe: beſides the ſeaſon for this being near the winter, the rains, which are then very frequent, often make the berries fall before they are perfectly ripe[u].]

It appears however that the Jamaica planters, after a multitude of experiments, and the moſt laudable exertions, have diſcovered the art of cultivating, picking and curing the berries, ſo as to make their Coffee equal to the growth of Arabia. Some ſamples have been produced, which were pronounced by the London dealers even ſuperior to the beſt brought from the Eaſt. Two of them were equal to the beſt Mocha Coffee; and two more were ſuperior to any that could be had at the grocer's ſhops in London, unleſs the price of *picked* Coffee be paid, which is two ſhillings the pound more than what they call the beſt Coffee. The other ſamples were little, if at all inferior to what the grocers call beſt Coffee[x].

The Coffee-tree having been tranſported to Europe, and to the poſſeſſions of Europeans both in the Eaſt and Weſt Indies from Arabia, has been commonly ſuppoſed to be indigenous of that country. It ſeems however, according to Mr. Bruce, to have been brought originally from the kingdom of Caffa, the ſouth province of Narea in Africa. It is the wood of the country, produced ſpontaneouſly every where in great abundance, from Caffa to the banks of the Nile. The foot of the mountains, or edge of the marſhes neareſt Narea, is thick overgrown with Coffee-trees, which if not the only, is the largeſt tree known there[y].

Coffee is named by the Perſians *Cahwa* and *Coho*; by the Turks *Chaube* and *Cahvey*; by the Arabians *Cachua*, *Caoua*, and *Cahouah*. The Egyptians call it *Eleave*.

2. The Weſtern Coffee-tree is upright branching, and ſix feet high. Leaves lanceolate-ovate, ending in a blunt point, quite entire, ſhining, petioled, oppoſite, only on the young twigs, four inches long. Stipules alternate with the petioles, ſubulate, acuminate, upright and oppoſite. Racemes trichotomous, ſometimes panicled, uſually terminating, but ſometimes axillary. Corolla white, very ſweet-ſcented.

Native of St. Domingo, about Cape Francois, where it flowers in december[z].

It is alſo pretty common in the lower woods of Jamaica. *Browne* names it the *wild Jeſſamine*, the flowers having much of the ſhape and ſmell of our white Jaſmin.

3. This is a ſmall tree, only four feet high, with many diffuſed round branches. Leaves ovate-lanceolate, quite entire, beſet with many tubercles, oppoſite, on ſhort petioles. Flowers ſubterminating, in erect brachiate racemes: the common peduncle long, quadrangular; the partial ſhorter, round, op-

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[r] Hiſtory of Jamaica, p. 161, &c.

[s] Moſeley.

[t] Ellis, p. 29, &c. ſee alſo p. 44. and 49.

[u] Ellis. p. 42, &c.

[x] Fuller's letter to the Committee of Correſpondence in Jamaica, 1783.—Moſeley's treatiſe on Coffee, edit. 5. 1792.

[y] Abyſs. vol. 2. p. 226, 313.

[z] Jacquin.

poſite or ſtellate. Berry roundiſh, ſmall, red, watery, one-celled with two hemiſpherical ſeeds[a].

It agrees with C. occidentalis of Linneus, and paniculata of Aublet in the panicle being brachiate; but it differs in having irregular branches, rugged tubercled leaves, and round berries with two ſeeds in them.

Native of the iſland of Mozambique.

4. This is a ſmall upright tree, ſix feet high, with thick ſhort ſpreading branches. Leaves ovate-lanceolate, ſmooth, oppoſite. Flowers white, axillary, ſeveral together, on ſhort one-flowered peduncles; border ſix or ſeven-parted. Berries red, oblong-ovate, angular with longitudinal nerves, having two ſeeds.

Native of Africa on the coaſt of Zanguebar: and cultivated near Mozambique with the foregoing ſort[b].

5. Stem branching, from one to two feet in height; branchlets quadrangular, knotty. Leaves oppoſite, diſpoſed in form of a croſs, ſmooth, ſhining, entire, ovate-oblong, acute, on a very ſhort petiole. Stipule long, pointed, ſtiff: beneath which is a rib running down to the next joint. The largeſt leaves are two inches long, and nine lines wide. Flowers axillary, ſeveral together, ſmall and white. Calyx divided into four ſharp ſegments: corolla the ſame. Stamens four. Berry ſpherical, violet-coloured.

Native of Guiana, in the great foreſts of Orapu; flowering and fruiting in ſeptember.

6. Trunk ſeven or eight feet high, and five or ſix inches in diameter, covered with a gray, wrinkled, cloven bark. Boughs oppoſite, branched, knotty, quadrangular. Leaves oppoſite, diſpoſed in form of a croſs, entire, ſmooth, ſhining; the largeſt eight inches and a half long, three and a half broad; on a ſhort petiole. On each ſide between the two petioles at their baſe is a wide ſharp ſtipule, which is deciduous. Flowers terminating, panicled. Calyx four-toothed. Corolla white, four-parted, very ſweet-ſcented. Stamens four. Berry blueiſh, containing two ſeeds, one of which is frequently abortive.

Native of Guiana; flowering and fruiting in april[c].

7, 8, 9, 10. Theſe were found by our late circumnavigators in the iſlands of the South Seas. The 7th in the Friendly Iſlands; the 8th in New Caledonia; the 9th in Tanna and the Friendly Iſlands; and the 10th in Otaheite[d].]

PROPAGATION AND CULTURE.

As the Coffee-tree is an Evergreen, it makes a beautiful appearance at every ſeaſon in the ſtove, but particularly when it is in flower; and alſo when the berries are red, which is generally in the winter; as they continue a long time in that ſtate, there is ſcarce any plant that more deſerves a place in the ſtove than this.

It is propagated by the berries, which muſt be ſown ſoon after they are gathered from the trees, for if they are kept out of the ground a ſhort time they will not grow. I have frequently ſent the berries abroad by the poſt, but when they have been a fortnight in their journey they have all failed; and this has conſtantly happened every where, for the berries which were ſent from Holland to Paris did not grow, nor did thoſe which were ſent from Paris to England; ſo that wherever theſe trees are deſired, the young plants muſt be ſent, if it be at any diſtance from the place where they grow.

The berries ſhould be planted in ſmall pots, filled with light kitchen-garden earth, and plunged into a hot-bed of tanners-bark; they muſt be watered gently once or twice a week, but the earth muſt not be too moiſt, leſt it rot the berries. If the bed be of a proper temperature of warmth, the plants will appear in a month or five weeks time, and in about two months more will be fit to tranſplant. For as many of the berries will produce two plants, ſo the ſooner they are parted, the better their roots will be formed; for when they grow double till they have made large roots, they will be ſo intermixed and entangled, as to render it difficult to ſeparate them without tearing off their fibres, which will greatly prejudice the plants. When theſe are tranſplanted, they muſt be each put into a ſeparate ſmall pot, filled with the ſame earth as before, and plunged into the tan-bed again; which ſhould be ſtirred up to the bottom, and if required, ſome new tan ſhould be mixed with it, to renew the heat. Then the plants ſhould be gently watered, and the glaſſes of the hot-bed muſt be ſhaded every day till they have taken new root; after which the plants ſhould have free air admitted to them every day, in proportion to the warmth of the ſeaſon: during the ſummer they will require frequently to be refreſhed with water, but they muſt not have it in too great plenty: for if their roots are kept too moiſt, they are very ſubject to rot, then the leaves will ſoon decay and drop off, and the plants become naked; when this happens, they are ſeldom recovered again. The firſt ſign of theſe plants being diſordered, is, their leaves ſweating out a clammy juice, which attracts the ſmall inſects, that too frequently infeſt the plants in ſtoves; when they are not in health, theſe inſects cannot be deſtroyed, till the plants are recovered to vigour: for although the plants are ever ſo carefully waſhed and cleaned from them, yet they will be ſoon attacked by them again, if they are not recovered to health, for theſe inſects are never ſeen upon any of the plants while they are in perfect vigour; but when they are diſordered, they ſoon ſpread over all the leaves and tender parts of the plants, and multiply exceedingly; ſo that upon the firſt attack, the plants ſhould be ſhifted into freſh earth, and all poſſible care taken to recover them, without which all the waſhing and cleaning of the plants will be to little purpoſe. The diſorders attending the Coffee-trees, generally proceed from either being put into pots too large for them, nothing being of worſe conſequence than over potting them; or from the earth being too ſtiff, or from their being overhung by other plants, or being over watered. If theſe are properly taken care of, and the ſtove kept always in a proper temperature of heat, the plants will thrive, and produce plenty of fruit.

I have made trial of ſeveral compoſitions of earth for theſe plants, but have found none of them equal to that of a kitchen-garden, where the ſoil is naturally looſe, and not ſubject to bind; and if it has conſtantly been well wrought and properly dunged, this without any mixture is preferable to any other.

The plants ſhould not be too often tranſplanted, for that will greatly retard their growth. If they are new potted twice a year at moſt, it will be ſufficient; though unleſs the plants make great progreſs, they will not require to be removed oftener than once in a year, which ſhould be in ſummer, that they may have time to get good roots again before winter. During the warm weather in ſummer, theſe plants ſhould have a large ſhare of air, but they muſt not be wholly expoſed abroad at any ſeaſon; for although they may have the appearance of thriving in the open air during the heat of ſummer, yet when they are removed into the ſtove again, their leaves will fall off, and the plants will make but an indifferent appearance the following winter, if they ſhould ſurvive it: therefore it is the better method to keep them conſtantly in the ſtove, and admit a proportionable ſhare of air to them every day, according to the heat of the ſeaſon; they will require water two or three times a week in warm weather, but in the winter they muſt have it more ſparingly; and the ſtove in which they are placed, ſhould be kept to the heat aſſigned for the Ananas upon the botanical thermometers.

This tree has been propagated by cuttings, and alſo from layers; but theſe are long before they make roots, and the plants ſo raiſed, are never ſo ſtrong and thriving as thoſe which ariſe from berries;

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[a] Loureiro. [b] Ibid. [c] Aublet. [d] Forſter.

ries; therefore where the berries can be procured, it is much the beſt method to propagate the plants by ſeeds.

When they are tranſplanted, their roots ſhould not be too much cut or trimmed; the decayed or rotten fibres ſhould be pruned off, and thoſe which are cloſely matted to the ſide of the pots ſhould be trimmed, but not cut too near to the ſtem; for the old fibres do not put out new roots very kindly, eſpecially thoſe which are become tough, ſo that there ſhould always be a ſufficient number of young fibres left to ſupport the plants, till new ones are produced.

The plants raiſed from the berries, produce fruit in two years from planting, and in hot climates ſooner; plantations of theſe trees may therefore be ſoon made in any of thoſe countries, where the temperature of the air is proper for their production, but the trees will not grow in the open air any where if there is a winter; ſo that in all countries without the tropics, they cannot be expected to grow abroad.

[In Arabia Felix the Coffee-tree is raiſed from ſeed, ſown in nurſeries, and planted out as there is occaſion. The plantations are in a moiſt ſhady ſituation, on a ſmall eminence, at the foot of the mountains, whence little rills of water are conducted in ſmall channels to the roots of the trees, to ſecure the production and ripening of the fruit. When they remove or tranſplant a tree, they make a trench three feet wide and five feet deep, which they line or cover with ſtones, that the water may the more readily ſink deep into the earth, and thus be kept from evaporating. When the fruit is nearly ripe the water is turned off, leſt the fruit ſhould be too ſucculent.

In places much expoſed to the ſouth, the Coffee-trees are planted in regular lines, ſheltered by a kind of Poplar tree, which affords a thick ſhade. Without this precaution they ſuppoſe that the bloſſoms would be ſo parched by the exceſſive heat of the ſun, as not to be ſucceeded by fruit.

Coilantha. See *Gentiana*.

Coilophyllum. See *Sarracenia*.

Coilotapalus. See *Cecropia*.]

COIX. (Κοιξ *is a name of Theophraſtus, one of his* καλαμοφυλλοι, *or reed-leaved plants, and allied to the Palms.*)

Lin. gen. n. 1043. *Reich.* 1135. *Schreb.* 1405. *Juſſ.* 34. Lacryma Job. *Tourn.* 306. Lithagroſtis. *Gærtn. t.* 1.

Claſſ. 21. 3. Monoecia Triandria.

Nat. order of *Graſſes*.

GENERIC CHARACTER.

* *Male flowers* diſpoſed in a looſe ſpike.

Cal. *Glume* two-flowered, two-valved; *valves* oblong-ovate, obtuſe, awnleſs, the outer thicker.

Cor. two-valved; *valves* ovate-lanceolate, length of the calyx, very thin, awnleſs.

Stam. *Filaments* three, capillary. *Anthers* oblong, four-cornered.

* *Female flowers* fewer, at the baſe of the male ſpike, on the ſame plant.

Cal. *Glume* two-flowered, two-valved; *valves* rounded, thick, ſhining, hard; the outer larger; ſhining.

Cor. *Glume* two-valved, outer valve ovate, larger; inner narrower, ſmaller: both awnleſs.

Pist. *Germ* ovate, very ſmall. *Style* ſhort, two-parted. *Stigmas* two, horned, longer than the flower, pubeſcent on every ſide.

Per. none: the outward calycine glume grows cloſely (to the ſeed,) increaſes, grows ſhining, falls, does not gape.

Seed ſolitary, roundiſh, covered by the oſſified calyx.

ESSENTIAL CHARACTER.

Males in remote ſpikes. *Cal.* Glume two-flowered, awnleſs. *Cor.* Glume awnleſs.

Fem. *Cal.* Glume two-flowered. *Cor.* Glume awnleſs. *Style* two-parted. *Seed* covered by the calyx oſſified.

SPECIES.

1. Coix Lacryma. *Job's Tears.*
Lin. ſpec. 1378. *Reich.* 4. 97. *hort. cliff.* 457. *upſ.* 281. *fl. zeyl.* 330. *Gron. virg.* 143. *Lour. cochinch.* 551.
Lithagroſtis Lacryma Jobi. *Gærtn. fruct.* 7. *t.* 1.
Lithoſpermum arundinaceum. *Bauh. pin.* 258.
Lacryma Jobi. *Cluſ. hiſt.* 2. 216. *Beſl. eyſt. æſtiv.* 13. *t.* 6. *f.* 1.
Salee. *Rumph. amb.* 5. 193. *t.* 75. *f.* 2.
Catriconda. *Rheed. mal.* 12. 133. *t.* 70.
Seeds ovate.

2. Coix angulata.
Mill. dict. n. 2. *Lin. hort. cliff.* 438.
Lacryma Jobi americana altiſſima, arundinis fol. & facie. *Plum. cat.*
Seeds angular.

[3. Coix agreſtis.
Lour. cochinch. 551.
Salee Utan. *Rumph. amb.* 6. 22. *t.* 9. *f.* 1.
Lachryma Jobi paludoſa minor. *Burm. zeyl.* 138.
Culm entirely ſimple, leaves ſmooth and even, ſeeds roundiſh.

DESCRIPTIONS, *&c.*

1. Culm ſix feet high, perennial, ſubcylindric, ſolid, jointed, erect, branched. Leaves lanceolate, quite entire, long, wrinkled underneath, reflex, claſping. Flowers axillary, on a long, ſlender, ſuberect common peduncle: at the top many males in a ſubovate ſpikelet; and at the baſe a ſolitary female. The two ſtyles are capillary and entirely diſtinct, with long villoſe ſtigmas [a].

From the ſheaths of the upper leaves come out one or two peduncles, compreſſed, ſheathed at the baſe, ending at top in a coriaceous ovate involucre, hollow within, perforated at top, containing one (or two) covered ſeſſile female flowers, ſurrounded on one ſide with an exterior glumaceous valve, and having on the other a ſingle groove with two fiſtuloſe cloſed appendicles: a ſtipe is put forth from the bottom of the involucre between the appendicles, ending in a ſhort few-flowered male ſpike. The involucre is permanent, hard, ſhining, ſmooth [b].

There is only a ſingle ſeed produced in each involucre, the other being conſtantly abortive: it is large, ſubglobular, gibboſe on one ſide, with a broad deep groove on the other, beaked at top with the permanent ſtyle, and having at bottom a black umbilical hole: the female involucre, which covers it and does not quit it, is thick, ſtony, ovate-conical, perforated at top and bottom, ſmooth, ſhining, of a livid or purpliſh colour [c].

Gærtner objects to the name of *Coix*, becauſe that is a ſort of Palm, or a plant nearly allied to the Palms, mentioned both by Theophraſtus and Pliny; he therefore changes it to *Lithagroſtis*.

Native of the Eaſt Indies. Cultivated in 1596, by Gerarde [d].]

2. This will grow to the height of ſeven or eight feet, whereas the foregoing is ſeldom ſo high as three feet in Europe; the ſtems become hard, like the Reed, or Indian Corn, they branch out, and produce ſeveral ſpikes of flowers. [Linneus ſays, this is perennial, and the foregoing ſpecies annual.

Native of America.

3. Culms three feet high, ceſpitoſe, quite ſimple, round, ſolid, jointed, ſmooth, riſing from a perennial, creeping root. Leaves lanceolate-linear, acuminate, quite entire, ſuberect, alternate, claſping. Peduncles long, erect, axillary, many-flowered; males and female from the ſame axil. Seed roundiſh, brown, ſhining, ſmall [e].

Native of Amboina, Ceylon, Cochinchina.]

PROPAGATION AND CULTURE.

1. Thoſe who are deſirous to cultivate this plant in England, may procure the ſeeds from Portugal, theſe ſhould be ſown on a moderate hot-bed in the ſpring, to bring the plants forward, and afterward

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[a] Loureiro. [b] Juſſieu. [c] Gærtner. [d] Hort. kew. [e] Loureiro.

tranſplant them on a warm border, allowing each two feet room at leaſt, and when the plants have taken root, they will require no farther care, but to keep them clean from weeds. Theſe will flower about midſummer, and in warm ſeaſons, the ſeeds will ripen at michaelmas. There is a variety of this with much broader leaves, which I received from Smyrna ſome years paſt, which did not perfect ſeeds here, ſo I cannot ſay whether it is only a variety, or a different ſort from this.

2. This will not bear the open air in England, but muſt be plunged into the bark-bed, where it will flouriſh, and produce ripe ſeeds the ſecond year: it may be continued longer, if deſired.

COLCHICUM. *(So called from Colchis, a city of Armenia; where this plant is ſuppoſed to have been very common.)*

Lin. gen. n. 457. *Reich.* 492. *Schreb.* 621. *Gærtn. t.* 18. *Tourn.* 181. 182. *Juſſ.* 47.

Claſſ. 6. 3. Hexandria Trigynia.

Natural order of *Spathaceæ. Junci* Juſſ.

GENERIC CHARACTER.

CAL. none, (except ſcattered ſpathes.)

COR. ſix-parted. *Tube* angulated, rooted; *diviſions* of the border lance-ovate, concave, erect.

STAM. *Filaments* ſix, ſubulate, ſhorter than the corolla. *Anthers* oblong, four-valved, incumbent.

PIST. *Germ* buried within the root. *Styles* three, thread-form, length of the ſtamens. *Stigmas* reflex, channelled.

PER. *Capſule* three-lobed, connected internally by a ſuture, obtuſe, three-celled, ſutures gaping inwardly.

SEEDS many, nearly globular, wrinkled.

ESSENTIAL CHARACTER.

Spathe. Cor. ſix-parted, with a rooted tube. *Capſ.* three, connected, inflated.

SPECIES.

1. Colchicum autumnale. *Common Meadow Saffron.*

Lin. ſpec. 485. *Reich.* 2. 129. *hort. cliff.* 140. 1. *upſ.* 90. *mat. med.* 100. *Hudſ. angl.* 175. *With.* 379. *Lightf.* 192. *Fl. ruſt. t.* 60. *Sowerby, engl. bot.* 133. *Hall. helv. n.* 1255. *Scop. carn. n.* 448. *Pollich pal. n.* 366. *Leers herborn. n.* 271. *Allion. pedem. n.* 433. *Krock. ſileſ. n.* 577. *Villars dauph.* 2. 246. *Stork. monogr. Black. t.* 566. *Berg. phyt. t.* 177. *Plenck, ic. t.* 279. *Woodv. med. bot.* 483. *t.* 177.

C. commune. *Bauh. pin.* 67. *Fuchſ. hiſt.* 356, 357. *Dod.* 460. 2. *Camer. epit.* 845. *Ger.* 127. 1, 2. *emac.* 157. 1, 2. *Park. parad.* 153. *Pet.* 67. 2. *Mor. ſ.* 4. *t.* 3. *f.* 1. *Bauh. hiſt.* 2. 649. *Raii hiſt.* 1170. *ſyn.* 373.

Leaves flat lanceolate erect.

2. Colchicum montanum.

Lin. ſpec. 485. *Reich.* 2. 129. *Hall. helv. n.* 1256. *Allion. pedem. n.* 434. *t.* 74. *f.* 2. *Villars dauph.* 2. 246. *Cluſ. hiſp. t.* 267. *hiſt.* 1. 200. *Ger.* 128. *emac.* 159. *Park. parad.* 157. 11.

C. mont. anguſtifolium. *Bauh. pin.* 68. *Raii hiſt.* 1172. *Mor. f.* 7.

Leaves linear ſpreading very much.

3. Colchicum variegatum. *Variegated Meadow Saffron.*

Lin. ſpec. 485. *Reich.* 2. 130. *hort. cliff.* 140. 2.

C. chionenſe, flor. fritillariæ inſtar teſſulatis, fol. undulatis. *Mor.* 341. *n.* 4. *ſ.* 4. *t.* 3. *f.* 4. *Park. parad.* 156. *n.* 8. *t.* 155. *f.* 5. *Ger. emac.* 161. *Raii hiſt.* 1172. *n.* 8.

β. C. teſſulatum.

Mill. dict. n. 4.

C. flor. frit. inſt. teſſul., fol. planis. *Mor.* 340. *n.* 3. *f.* 3.

Leaves waved ſpreading.

DESCRIPTIONS, *&c.*

1. This has a bulbous root, about the ſize and ſhape of the Tulip, but not ſo ſharp-pointed at the top, the ſkin or cover is alſo of a darker colour. Theſe bulbs are renewed every year, for thoſe which produce the flowers decay, and new roots are formed above. The flowers come out in autumn; theſe ariſe with long ſlender tubes from the root, about four inches high, ſhaped like thoſe of the Saffron, but larger; the number of flowers is generally in proportion to the ſize of the roots, from two to ſeven or eight: in march the green leaves appear, theſe are commonly four to a full grown root; they are folded over each other below, but ſpread open above ground, ſtanding croſs-ways: they are of a deep green, and when fully grown, are five or ſix inches long, and one and a half broad. The ſeed-veſſel comes out from between the leaves in april, and the ſeeds ripen in may, ſoon after which the leaves decay.

[With the other leaves one or two generally ariſe, of the ſame length, but only one-fourth of the width, which are a kind of bracteal leaves to the ſeed-bud. The ſeed-veſſel, which ariſes with the leaves, is ſeſſile at their baſe, large, ſomewhat ovate, but with three very blunt angles[a].

The ſeeds lie buried all winter within the bulb, in ſpring they grow up on a fruit-ſtalk, and are ripe about the time of hay harveſt. May not the very great length of the ſtyles account in ſome meſure for the delay in the ripening of the ſeeds? As this plant bloſſoms late in the year; and probably would not have time to ripen its ſeeds before winter; providence has contrived its ſtructure ſuch, that it may be performed at a depth within the earth, out of the reach of the uſual effects of froſt: and as ſeeds buried at ſuch a depth are known not to vegetate, a no leſs admirable proviſion is made to raiſe them above the ſurface when they are perfected, and to ſow them at a proper ſeaſon[b].

Monſ. de Juſſieu entertains a ſingular opinion, that *Colchicum,* although it have the habit of *Crocus,* yet bears a nearer affinity to *Veratrum.* His accurate account however of its propagation by the root, may ſerve to explain that of bulbous plants in general, and alſo of the Orchideæ[c].

From the permanent ſtriated dilated tuber of the old root, ſinuated on one ſide, and cloathed with the coats of the preceding root-leaves, a new plant ſprings from the ſide from the ſame coats, which is tuberous at the baſe, throws out fibres at bottom like other bulbs, and is received into the boſom of the former tuber which embraces it half round. This has an outer radical ſpathe, which is cylindric and tubular, cloven at top on one ſide, and half under ground. From two to ſix flowers half emerge from this ſpathe without leaves. In the mean time the fruits, much later than the flowers, ſit on the ſtem riſing out of the ſpathe. As the plant advances the new tuber increaſes, the old one, deprived of its nutriment, periſhes, and at the ſame time the former puſhes forth from its baſe the gem of a ſucceeding plant. There are commonly two lateral gems from the ſame tuber; one lower juſt deſcribed bearing the flower and ſeed; the other ſuperior, cauleſcent like the former, but more ſlender and ſcarcely floriferous[d].

It is a native of moſt parts of Europe.] Mr. Miller obſerved it in England, in great plenty, in the meadows near Caſtle-Bromwich in Warwickſhire, the beginning of ſeptember; and ſays that the country people call the flowers Naked Ladies, becauſe they come up without any leaves. [They give the ſame name to the Hepatica, and indifferently to any plant, which has flowers on naked ſcapes, appearing at a different time from the leaves.

It is found alſo with us in many other places; as near Derby and Northampton; Bury in Suffolk. Orchards on the borders of Malvern-chace, and meadows under Malvern-hills in Worceſterſhire—Meadows bordering the Severn, Worceſterſhire—Wallington and Hales Owen, Shropſhire—About Bath, Briſtol, Warminſter, Shepton-Mallet—South-gate.—Near Comb in Oxfordſhire, with a double flower, and ſome varieties of colour.—In Scotland, but not common.]

[a] Woodw. Mſſ.

[b] Withering.

[c] Engl. bot.

[d] Gen. p. 47.

The varieties moſt commonly propagated by the floriſts are the following:

The Meadow Saffron with white flowers.
Meadow Saffron with ſtriped flowers.
Broad-leaved Meadow Saffron.
Striped-leaved Meadow Saffron.
Many flowered Meadow Saffron.
Meadow Saffron with double purpliſh flowers.
Meadow Saffron with double white flowers.
Meadow Saffron with many white flowers.

[No cattle eat it. In a paſture where there were ſeveral horſes, and which was eaten down pretty bare, the graſs was cloſely cropped even under the leaves, but not a leaf of the Meadow Saffron was bitten[e].

This is one of thoſe plants which upon the concurrent teſtimony of ages has been condemned as poiſonous: but Dr. Störck of Vienna has taught us that it is an uſeful medicine. The roots have much acrimony. An infuſion of them in vinegar, formed into a ſyrup, by the addition of ſugar or honey, is found to be a very uſeful pectoral and diuretic. It ſeems in its virtues very much to reſemble Squill, but it is leſs nauſeous and acrimonious, though more ſedative[f].

Allioni relates, that he has experienced the Squill to be more ſafe and efficacious than the Meadow Saffron.]

2. This has a ſmaller root, with a darker coat. The leaves come up ſoon after the flowers decay, and continue green all the winter, like the Saffron; they are long, narrow, and ſpread on the ground: they decay in june. The flowers are of a reddiſh purple colour, and appear in auguſt and ſeptember.

[This flowers earlier than the common ſort; the root is globular, and the ſheathing leaves burſt forth with the flower. Theſe are at firſt broadiſh and ovate, then almoſt linear and a little ſhorter than the flower. The ſegments of this are lanceolate, purple marked with lines. Stamens half the length of the ſegments. Style very deeply trifid. The whole plant is little more than a finger's height[g].

Native of Spain and Portugal, Italy, the South of France and Switzerland. Cultivated here in 1629.

3. Leaves ſmaller than thoſe of the common ſort, for the moſt part three in number, and of a paler and freſher green colour, lying cloſe upon the ground, broad at the bottom, a little pointed at the end, waved about the edges. Root not ſo large as that of the common ſort. Flowers ſmaller, but very beautiful, whitiſh, with deep blue or purple ſpots. It flowers late, frequently not till october or november, and is ſomewhat tender[h].

Native of the Greek iſlands.

Cultivated (1629) by Parkinſon, Tuggie, &c. Alſo among Queen Henrietta Maria's flowers at Edgecombe in Surry, in the garden of Sir John Tunſtall, gentleman uſher to her Majeſty[i].]

PROPAGATION AND CULTURE.

Theſe are all very pretty varieties for a flower-garden, producing their flowers in autumn, when few other plants are in beauty. The leaves begin to decay in may; ſoon after which time, is the proper ſeaſon to tranſplant their roots; for if they are ſuffered to remain in the ground till auguſt, they will ſend forth freſh fibres; and after that it will be too late to remove them. The roots may be kept above ground until the beginning of auguſt; at which time, if they are not planted, they will produce their flowers as they lie out of the ground, but this will greatly weaken their roots. For the manner of planting their roots, ſee Tulipa. And for ſowing the ſeeds, ſee Xiphium.

Thoſe who are deſirous of obtaining varieties in the flowers muſt propagate them from ſeeds.

Colchicum. See *Bulbocodium.*

COLDENIA. (*So named by Linneus, in honour of C. Colden, of North America; a very curious botaniſt who diſcovered ſeveral new plants: theſe are printed in the Upſal acts for 1743.*)

Lin. gen. n. 173. *Reich.* 185. *Schreb.* 233. *Gærtn.* 68. *Juſſ.* 130.

Claſſ. 4. 3. Tetrandria Tetragynia.

Nat. order of *Aſperifoliæ. Borragineæ* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* four-leaved (four-parted); *leaflets* lanceolate, erect, length of the corolla.

Cor. one-petalled, funnel-form (with the opening pervious); *border* patulous, obtuſe, (four-lobed).

Stam. *Filaments* four, inſerted into the tube. *Anthers* roundiſh.

Pist. *Germs* four ovate; (Germ four-lobed, *Juſſ.*) *Styles* as many, capillary, length of the ſtamens. *Stigmas* ſimple, permanent.

Per. none. *Fruit* ovate, compreſſed, ſcabrous, acuminate, terminated by four beaks; (four-capſuled, capſules approximating one-ſeeded, *Juſſ.*)

Seeds two, muricate, two-celled, (ſolitary, *G.*)

Obs. *Very nearly allied to the Aſperifoliæ. Adanſon; but differing in having fewer parts in the flower.*

ESSENTIAL CHARACTER.

Cal. four-leaved. *Cor.* funnel-form. *Styles* four. *Seeds* two, two-celled. (*Style* one, with a bifid *ſtigma. Nuts* four, with a fungous rind, *Gærtn.*)

SPECIES.

1. Coldenia procumbens.

Lin. ſpec. 182. *ſyſt.* 168. *Reich.* 355. *fl. zeyl. n.* 69. *Gærtn. fruct.* 329. *t.* 68.

Teucrii facie, &c. *Pluk. alm. t.* 64. *f.* 6. *Raii ſuppl.* 281. *Mor. hiſt.* 3. 423.

DESCRIPTION, &c.

1. This is an annual plant, whoſe branches trail on the ground, they extend near a foot from the root, and divide into many ſmaller branches. Leaves ſhort and ſeſſile, deeply crenate, have ſeveral longitudinal nerves, and are of a glaucous colour. Corolla cut into four ſegments at the top, of a pale blue colour, and very ſmall. The ſtigmas are hairy. Fruit compoſed of four cells, and wrapped up in the calyx; with a ſingle ſeed in each cell.

[Branches alternate. Leaves alternate, ſubpetioled, obovate, ſublunate on the upper ſide, plaited along the deep ſerratures, tomentoſe except in the plaits. Flowers axillary, few, ſeſſile. Seeds flat on the inner ſide, muricate and angular on the outer[k].

According to Gærtner, they conſiſt of four nuts, united into a rounded-four-cornered mucronate fruit: the rind fungous, very thick on the back, but becoming gradually thinner and almoſt membranaceous on the ſides: ſhells bony, hard, convex on one ſide, rounded; on the other ſide compreſſed into an acute angle; one-celled. Seeds ſolitary, ovate-acuminate, rufeſcent: they have only a ſingle, membranaceous, thin covering; the albumen is of the ſame form with the ſeed; the embryo is a little ſmaller and inverted; the cotyledons are doubled.

Native of the Eaſt Indies. Cultivated in 1759, by Mr. Miller.]

PROPAGATION AND CULTURE.

This plant is propagated by ſeeds, which muſt be ſown upon a hot-bed in the ſpring; and when the plants are fit to remove, they ſhould be each put into a ſeparate ſmall pot, plunged into a hot-bed of tanners-bark, obſerving to ſhade them till they have taken freſh root; after which they ſhould have air admitted to them every day in proportion to the warmth of the ſeaſon, and gently watered two or three times a week in warm weather, but they muſt not have too much moiſture. Theſe plants muſt remain in the hot-bed, where they will flower in june, and the ſeeds will ripen in ſeptember.

Coletta-Veetla. See *Barleria.*

Coleworts and Coleseed. See *Braſſica.*

Colliflower. See *Braſſica.*

COLLINSONIA. (*This plant is ſo named in honour of Peter Collinſon, F. R. S. a moſt diſtinguiſhed promoter*

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[e] Woodw. in With.
[f] Withering.
[g] Allioni.
[h] Park. parad.
[i] Ger. emac.

[k] Lin. ſyſt.

of botanical ſtudies, and the firſt who introduced this plant, among many others, to the Engliſh gardens. Miller.)

Lin. gen. 40. *Reich.* 43. *Schreb.* 51. *Gærtn.* 66. *Juſſ.* 112.

Claſſ. 2. 1. Diandria Monogynia.

Nat. order of *Perſonatæ?* *Labiatæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, tubular, two-lipped; *upper lip* three-cleft, reflex, wider; *lower lip* two-parted, more erect, ſubulate; permanent.

COR. one-petalled, unequal, (ringent, *G.*) *Tube* funnel-form, many times longer than the calyx. *Borders* five-cleft; *upper diviſions* obtuſe, very ſhort; the two upper ones reflex. *Lower lip* longer, many-cleft, capillary.

STAM. *Filaments* two, briſtle-form, erect, very long. *Anthers* ſimple, incumbent, compreſſed, obtuſe.

PIST. *Germ* four-cleft, obtuſe, with a larger glandule lying below the germ. (Germs four, *G.*) *Style* briſtle-form, length of the ſtamens, inclined to one ſide. *Stigma* bifid, acute.

PER. none. Calyx cheriſhes the ſeed in its bottom, and is ringent with an irregular mouth.

SEED ſingle, globoſe.

OBS. *The quaternary number of ſeeds ſeems to be the natural one from the germs, though one only grows to ripeneſs.*

ESSENTIAL CHARACTER.

Cor. unequal. *Cal.* of the fruit one-leafed, toothed—of the flower bifid. *Seed* one under the calyx of the flower.

SPECIES.

1. Collinſonia canadenſis. *Nettle-leaved Collinſonia.* *Lin. ſpec.* 39. *Reich.* 73. *hort. cliff.* 14. *t.* 5. *mat. med.* 40. *Cold. noveb.* 8. *Kalm. it.* 2. 317. *ed. angl.* 1. 197. *Ait. hort. kew.* 1. 47. *Gærtn. fruct.* 317. *t.* 66. *Plenck, ic. t.* 24.
Leaves ovate, both they and the ſtems ſmooth.

[2. Collinſonia ſcabriuſcula. *Rough-ſtalked Collinſonia.* *Ait. hort. kew.* 1. 47.
Leaves ovate ſubcordate ſomewhat hairy, ſtem ſomewhat hairy-ſcabrous.]

DESCRIPTIONS, &c.

1. This has a perennial root. In America it uſually riſes to the height of four or five feet, but in England it ſeldom grows above three feet high. The ſtalks decay in the autumn, and freſh ſhoots come out in the ſpring. The ſtalks are ſquare, with heart-ſhaped leaves, oppoſite, and ſerrate. The flowers are produced at the extremity of the ſtalks in looſe ſpikes; they are of a purpliſh yellow, and appear in july; the ſeeds ripen in autumn.

[One ſeed only generally comes to maturity, the others being almoſt always abortive; this is globoſe, aſh-coloured obſcurely reticulated with duſky veins [a].

Native of North America, in Penſylvania and that latitude, in little woods and among buſhes, in a rich ſoil; not farther to the ſouth, nor to the north above 43° 15′. Mr. Bartram was the firſt who diſcovered it, and ſent it to Europe. It has a peculiar ſcent, which is agreeable, but very ſtrong. It is reputed to be an excellent remedy againſt pains in the limbs and a cold, if the parts affected be rubbed with it: a decoction of it is alſo ſaid to have cured the bite of the rattle-ſnake. In New York, &c. they call it *Horſeweed,* becauſe the horſes eat it in the ſpring, before any other plant comes up [b].

Introduced 1735, by Peter Collinſon [c].

2. Native of Eaſt Florida. Found there by Mr. John Bartram. Cultivated 1776, by John Fothergill, M.D. Perennial [d].]

PROPAGATION AND CULTURE.

1. This plant may be eaſily propagated by parting the roots in october. Theſe roots ſhould be planted at three feet diſtance, for they require much nouriſhment, otherwiſe they will not thrive. It will live in the open ground, if it is planted in a ſheltered ſituation. But unleſs it is kept warm, and is duly watered, it rarely flowers well: therefore many perſons keep the plants in large pots: but theſe ſeldom produce good ſeeds; whereas thoſe which are planted in the full ground, and are conſtantly watered, will ripen ſeeds very well in good ſeaſons.

[2. This ſpecies is more tender, and requires the protection of the green-houſe. It may be increaſed in the ſame manner with the other.

COLLOCOCCA and COLLOCOCCUS. See *Cordia.*]

COLOCASIA. See *Arum.*

COLOCYNTHIS. See *Cucumis* and *Trichoſanthes.*

COLPOON. See *Euonymus.*

COLUMBINE. See *Aquilegia.*

COLUMNEA. (*This name was given by Plumier, in honour of Fabius Columna, as he is commonly called, or Fabio Colonna, of the noble family of Colonna in Italy.*)

Lin. gen. n. 792. *Reich.* 856. *Schreb.* 1064. *Juſſ.* 121. *Plum.* 33. Achimenes. *Brown.* 270. *t.* 30. *f.* 3.

Claſſ. 14. 2. Didynamia Angioſpermia.

Nat. order of *Perſonatæ.* *Scrophulariæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-parted, ſubventricoſe at the baſe: *diviſions* erect, equal, lanceolate, permanent.

COR. one-petalled, ringent, villoſe. *Tube* long, gibbous above at the baſe. *Border* two-lipped. *Upper lip* ſtraight, emarginate. *Lower lip* three-parted; lateral diviſions lanceolate, the intermediate longer and more deeply ſeparated, lanceolate.

STAM. *Filaments* four, of which the two longer are hid under the upper lip. *Anthers* ſimple, connected into a little crown.

PIST. *Germ* ovate. *Style* filiform, length of the upper lip. *Stigma* bifid, obtuſe.

PER. *Capſule* two-celled, (one-celled, *Sw.*) ovate.

SEEDS numerous, ſmall, lying on a very large receptacle.

ESSENTIAL CHARACTER.

Cal. five-parted. *Cor.* ringent, upper lip three-parted, the middle part vaulted, emarginate; gibbous above at the baſe. *Anthers* connected. *Capſ.* two-celled, (one-celled.) *Seeds* neſtling.

SPECIES.

1. Columnea ſcandens. *Climbing Columnea.* *Lin. ſpec.* 891. *Reich.* 3. 201. *Jacqu. hort.* 3. *p.* 27. *t.* 48. *amer. pict.* 88. *t.* 170. *Plum. gen.* 28. *ic.* 89. *f.* 1. *Swartz. obſ.* 249.
β. C. ſcandens, fl. luteſcente, fructu albo. *Plum. gen.* 28.
Leaves ovate acute entire ſubvilloſe, leaflets of the calyx entire, corollas and calyxes pubeſcent, upper lip undivided.

[2. Columnea longifolia. *Long-leaved Columnea.* *Lin. ſyſt.* 579. *Reich.* 3. 202. *mant.* 90.
Achimenes ſeſamoides. *Vahl. ſymb.* 2. 71.
Babel-Tſiuli. *Rheed. mal.* 9. *t.* 87.
Seſamum javanicum. *Burm. ind.* 133.
Leaves lanceolate very long ſubſerrate ſmooth.

3. Columnea hirſuta. *Hairy Columnea.* *Swartz prodr.* 94. *Ait. hort. kew.* 2. 366.
Achimenes. *Brown. jam.* 270. 1. *t.* 30. *f.* 3.
Rapunculus. *Sloan. jam.* 1. 157. *n.* 20. *t.* 100. *f.* 1.
Leaves ovate acuminate ſerrate roughly hairy on the upper ſurface, calycine leaflets toothletted lanceolate; they and the corollas hirſute, the upper lip bifid.

4. Columnea hiſpida. *Swartz prodr.* 94.
Leaves ovate obtuſe toothletted hiſpid-hirſute, leaflets of the calyx lanceolate entire hairy, ſtem hairy rugged.

5. Columnea rutilans. *Swartz prodr.* 94.
Leaves ovate-lanceolate villoſe toothletted, leaves of the calyx jagged, corollas villoſe, the upper lip two-parted.

6. Columnea ſtellata. *Lour. cochinch.* 384.
Leaves ſtellate, flowers ſolitary, ſtem creeping.

DESCRIPTIONS, &c.

1. Stem ſcandent, rooting, angular, ſubquadrangular, ſtriated, ſucculent, brittle, ſomewhat hirſute.

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[a] Gærtner. [b] Kalm. [c] Hort. kew. [d] Ibid.

Leaves petioled, oppoſite, ſmall, ſcarcely nerved. Flowers peduncled, ſolitary, axillary, blood-red, ſomewhat villoſe. Calyx ſubpentaphyllous. Tube of the corolla elongated, curved inwards: upper lip three-parted; the middle ſegment large, half-vaulted, entire; the two ſide ones broad-lanceolate, blunt, ſhorter, ſpreading: lower lip more deeply divided, lanceolate, obtuſe, ſpreading. Filaments the length of the corolla, two ſhorter: anthers ſquare, connected above the ſtigma. Capſule white, ſoftiſh, one-celled, reſembling a berry, but opening. Seeds neſtling.

Native of the Caribbee iſlands, Martinico, and Guiana, in moiſt parts of woods at the foot of the mountains. It is ſubparaſitical[a].]

Mr. Miller received ſeeds of this plant with ſcarlet flowers from Carthagena in New Spain.

β. The Columnea with a yellowiſh flower is only a ſeminal variation.

[2. Stem herbaceous. Leaves oppoſite, ſeſſile. Racemes terminating, elongated, ſtraight, with the flowers oppoſite. Calyx five-leaved, ovate. Corolla irregular; upper lip more oblong, lower three-cleft. Stamens twin; anthers parted at the baſe, with divaricated lobes, faſtened together ſo as to form a croſs. Style the length of the ſtamens. Capſules ovate, two-valved. Receptacle of the ſeeds globular, in which very many of the ſeeds are immerſed[b].

Stem erect, two feet high, four-cornered, the thickneſs of an eagle's quill, ſmooth. Branches axillary, quite ſimple, oppoſite. Leaves three inches long, ſubſeſſile, the upper ſurface rugged backwards, the under ſmooth and paler. Flowers in a raceme, all except the loweſt axillary ones oppoſite, ſolitary, ſpreading; the floral leaves lanceolate; quite entire[c].

Vahl has made this a ſeparate genus, adopting Browne's name of *Achimenes*. It differs from *Columnea* in having the corolla almoſt regular, not ringent: from *Seſamum* in having a two-celled capſule.

Native of the Eaſt Indies.

3. This beautiful vegetable is a native of the cooler mountains of Jamaica. It is very ſucculent, and grows luxuriantly in every rich and ſhady ſoil; throwing its branches frequently to the height of four or five feet, and higher, when ſupported. The ſtem is pretty thick: the leaves oppoſite and alternately larger. The flowers are large, beautifully variegated, and hairy on the outſide, like the other parts of the plant. The diviſions of the calyx are pinnated, ſomewhat like thoſe of the garden roſe. It has an uncommon appearance, and deſerves to be cultivated[d].

Introduced 1780, by the Marquis of Rockingham. It flowers in november[e].

4, 5. Natives of Jamaica[f].

6. Stem herbaceous, perennial, creeping, round, ſlender, whitiſh; branches ſuberect, four inches long, very tender. Leaves ovate, three lines long, ſerrate, ſtellate in threes, pale green, odoriferous, petioled. Flowers white ſtriped with red, hirſute, axillary, peduncled. Tube of the corolla ſcarcely gibbous; upper lip arched and trifid, lower bifid. Filaments curved inwards by pairs: anthers ovate, connected, ſeparable with difficulty. Capſule ſubulate, two-celled. The whole, except the capſule, hairy. It is an aquatic plant, of a very pleaſant appearance and ſmell, and being emollient and cooling, is uſed as a waſh by the women.

Native of Cochinchina, and cultivated there in pots and tubs filled with water, having earth at the bottom[g].]

PROPAGATION AND CULTURE.

All theſe plants being natives of hot countries, and moſt of them of the Weſt Indies, are too tender to live in England, out of a ſtove.

They are propagated by ſeeds ſown in a good hot-bed; and when the plants come up, they muſt be treated in the ſame way as other tender exotic plants which are kept in the bark-ſtove.

[Coluppa. See *Illecebrum.*]

COLUTEA. (κολουτέα, *Theophraſti: derivation uncertain.*)

Lin. gen. n. 880. *Reich.* 954. *Schreb.* 1196. *Gærtn. t.* 154. *Tourn.* 481. *Juſſ.* 359.

Claſſ. 17. 4. Diadelphia Decandria.

Nat. order of *Papilionaceæ*, or *Leguminoſæ.*

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, bell-ſhaped, five-cleft, erect, nearly equal, permanent.

Cor. Papilionaceous.

Standard, wings, and *keel* differ in figure and various proportion.

Wings preſſed cloſe together, lanceolate.

Stam. *Filaments* diadelphous, (ſingle and nine-cleft) aſcending. *Anthers* ſimple.

Pist. *Germ* oblong, compreſſed, attenuated to each end. *Style* aſcending. *Stigma* is a bearded line extended from the middle of the ſtyle to its tip, from the upper part.

Per. *Legume* very large, very broad, inflated, tranſparent and membranaceous, the upper future erect, the lower gibbous, one-celled, gaping on the upper future at the baſe.

Seeds ſeveral, kidney-ſhaped.

Obs. *The fruit conſtitutes the eſſence of the genus.*

C. frutescens *has the ſtandard ſhorter than the keel, and the wings far ſhorter than the ſtandard.*

ESSENTIAL CHARACTER.

Cal. five-cleft. *Legume* inflated, gaping on the upper future at the baſe.

SPECIES.

1. Colutea arboreſcens. *Common Bladder-Senna.*
Lin. ſpec. 1045. *Reich.* 3. 488. *hort. cliff.* 365. *upſ.* 228. *Ait. hort. kew.* 3. 55. *Hall. helv. n.* 400. *Scop. carn. n.* 881. *Curtis magaz. t.* 81. *Allion. pedem. n.* 1234. *Krock. ſileſ. n.* 1188. *Gærtn. fruct.* 2. 342. *Villars dauph.* 3. 434.
Colutea. *Dod. pempt.* 784. *Camer. epit.* 540. *Riv. tetr. t.* 20. *Ger.* 1116. *emac.* 1299.
C. veſicaria. *Bauh. pin.* 396. *Bauh. hiſt.* 1. 380. *Raii hiſt* 1720.—vulgaris. *Park. theat.* 227. *f.* 1. *parad.* 440. *Duham. arb.* 1. *t.* 72.
Leaflets oval-obcordate, ſtandard gibbous abbreviated.

2. Colutea cruenta. *Oriental Bladder-Senna.*
L'Herit. ſtirp. nov. 2. *t.* 41. *Ait. hort. kew.* 3. 55.
C. ſanguinea. *Pallaſ. roſſ.* 1. 88.
C. orientalis. *Mill. dict. n.* 3. *Lamarck encycl.* 1. 353.
C. humilis. *Scop. inſubr.* 2. 23. *t.* 12.
Shrubby; leaflets wedge-form obcordate; ſtandard gibbous obtuſe very ſmall.

3. Colutea Pocockii. *Pocock's Bladder-Senna.*
Ait. hort. kew. 3. 55.
C. procumbens. *L'Herit. ſtirp. nov.* 2. *t.* 42.
C. Iſtria. *Mill. dict. n.* 2. *fig. t.* 100.
C. halepica. *Lamarck encycl.* 1. 353.
Shrubby; leaflets ovate; ſtandard gibbous elongated, aſcending.

4. Colutea fruteſcens. *Scarlet Bladder-Senna.*
Lin. ſpec. 1045. *ſyſt.* 669. *Reich.* 3. 488. *hort. cliff.* 366. 2. *upſ.* 228. *Berg. cap.* 216. *Mill. fig. t.* 99. *Breyn. cent.* 70. *t.* 29. *Raii hiſt.* 1720. *n.* 3. *Curt. magaz. t.* 181. *Seba theſ.* 1. *t.* 17. *f.* 4.
Shrubby; leaflets ovate-oblong.

[5. Colutea perennans. *Perennial Bladder-Senna.*
Lin. ſyſt. 668. *Jacqu. hort.* 3. 5. *t.* 3. *Murr. in comm. gott. nov.* 5. 38. *t.* 7. *Ait. hort. kew.* 3. 56.
Herbaceous; leaflets ovate-oblong pubeſcent.]

6. Colutea herbacea. *Annual Bladder-Senna.*
Lin. ſpec. 1045. *Reich.* 3. 489. *hort. upſ.* 266. *Comm. hort.* 2. 87. *t.* 44. *Volk. norib. t.* 118. *Gærtn. fruct.* 342.
C. annua. *Murr. in comm. gott.* 5. 40. *t.* 7. *f.* 12, 13.
Herbaceous; leaflets linear ſmooth.

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[a] Swartz. [b] Linn. mant. [c] Vahl. [d] Browne. [e] Hort. kew. [f] Swartz. [g] Loureiro.

[7. Colutea fiſtuloſa.
Retz. obſ. 3. 40.
Herbaceous; *leaflets ovate complicate pubeſcent underneath.*]

8. Colutea americana.
Mill. dict. n. 5. *Houſt. mſs.*
C. Veræ Crucis veſicaria. *Pluk. alm.* 111. *t.* 165. *f.* 3.
Shrubby; *leaflets ovate, emarginate*; *legumes oblong compreſſed acuminate.*

9. Colutea procumbens.
Mill. dict. n. 7.
Stems trailing; *leaflets ovate-oblong tomentoſe*; *flowers axillary on very long peduncles.*

DESCRIPTIONS, *&c.*

[Moſt of the Coluteas are ſhrubs, with pinnate leaves, and ſtipules diſtinct from the petiole. Peduncles ſometimes two-flowered, but more frequently many-flowered in ſpikes, both axillary and terminating. They are in general eaſily diſtinguiſhed by their membranaceous inflated pod. Lamarck refers *Phaca auſtralis* and *alpina* of Linneus to this genus, both having the pod one-celled [a].]

1. This has ſeveral woody ſtems, which grow to the height of twelve or fourteen feet, ſending out many woody branches, with winged leaves, compoſed of four or five pairs of oval lobes, placed oppoſite, terminated by an odd one; theſe are indented at the top in form of a heart, and are of a grayiſh colour. The flowers come out from the wings of the leaves upon ſlender peduncles about two inches long, each ſuſtaining two or three yellow flowers, whoſe ſtandard is reflexed and large, with a dark-coloured mark on it. [Racemes ſhorter than the leaf: flowers from five to ſeven; calyx as thick as it is long; keel obtuſe longer than the wings; ſtyle bearded on the inſide; ſtigma bent down [b]. Legume membranaceous, ſubtranſparent, ſemiovate, inflated, ending at bottom in a longiſh peduncle, at top in a ſhort point. Seeds as far as twenty, or even more [c].

South of France, Italy, warmer parts of Switzerland, Carniola. Mr. Ray obſerved it about Montpellier, and in many parts of Italy, eſpecially on mount Veſuvius even in the aſcent to the crater, where there were ſcarcely any other plants. It flowers with us from june to auguſt.

The leaves are recommended as anſwering all the purpoſes of Senna, and Allioni has given particular directions for the preparation of them. A larger doſe ſeems to be required to produce the ſame effect. The ſeeds, in a quantity of a dram or two, excite vomiting. It is ſaid to afford food grateful to cattle [d].

Cultivated in 1570 [e].]

2. This has a woody ſtem, which ſends out many branches on every ſide, and do not riſe above ſeven or eight feet high; theſe are not ſo ſtrong as thoſe of the firſt ſort, and the leaves are compoſed of five or ſix pairs of ſmall heart-ſhaped leaflets, terminated by an odd one. The flowers proceed from the ſide of the branches, ſtanding upon peduncles, each ſuſtaining two or three flowers, ſhaped like thoſe of the firſt ſort, but ſmaller; they are of a dark red colour, marked with yellow; appear in june, and the ſeeds ripen in autumn.

[The Oriental Bladder-Senna, beſides that it is never arboreſcent, differs from the foregoing ſort in the ſhape, ſize, and number of the leaflets, which are quite ſmooth, glaucous, and more fleſhy; on very ſhort petioles or even ſubſeſſile: with ſcarcely conſpicuous ſtipules. The corolla is not only of a different colour and ſmaller, but the wings are perceptibly ſhorter than the keel, whereas in the common ſort they are nearly equal; the keel alſo is erect, and cut off at the end; and the marks on the ſtandard are very different. The legume opens below the tip into a wide oval hole. It was diſcovered by Tournefort in the Levant.—Cultivated 1731, by Mr. Miller [f].]

3. This ſhrub ſeldom grows more than ſix or ſeven feet high, in this country. The branches are very ſlender, and much more pliant than thoſe of the common ſort, and therefore it grows leſs erect. The leaves are compoſed of nine pairs of leaflets, and are much ſmaller. The flowers are of a brighter yellow, appear a month earlier than in the common ſort, and there is a ſucceſſion of them till late in the autumn, which renders this much more valuable; and the branches not ſhooting ſo luxuriantly, nor ſo upright, this is in leſs danger of being broken by ſtrong winds in ſummer.—Native of the Levant. The ſeeds were brought to England firſt by the Rev. Dr. Pocock, who gathered them in Turkey. Dr. Ruſſel, who reſided many years at Aleppo, reports that this ſhrub is very common about that city.

[Cultivated 1752, by Mr. Miller [g].

4. A hoary ſhrub, with tomentoſe leaflets, ſmooth on the upper ſurface. Standard of the corolla ſhorter than the keel; wings very minute [h].]

Height from two to four feet; in favourable ſeaſons and in a warm ſituation, plants of three years ſtanding will be ſix feet high, with large heads, and all the branches covered with flowers, making a very fine appearance. Thoſe plants however which are expoſed to the open air ſeldom are of longer duration than two years, and are generally deſtroyed in ſevere winters; but they make much ſtronger plants while they laſt, and produce a greater number of flowers than thoſe which are houſed; theſe being of a fine ſcarlet colour, intermixed with the ſilvery leaves, afford an agreeable variety.—The ſtem is weak; the ſide branches grow erect; and the leaves have ten or twelve pairs of leaflets. The peduncles are axillary, towards the upper part of the ſtem, and ſuſtain three or four flowers; theſe are very long, and not reflex. The legumes are very large. It flowers in june; but when the ſeeds are ſown forward in the ſpring, they will produce flowers in auguſt, and ſometimes perfect ſeeds in october [i].

[It is a native of the Cape of Good Hope, and was cultivated in 1683, by Mr. James Sutherland [k]. It was not however generally known in our gardens till the time of Miller.

5. The whole of this plant is ſlightly pubeſcent. Root perennial. Stems erect, round, ſtriated, pale green, annual, quite ſimple or with almoſt barren branchlets. Leaves alternate, frequent, ſpreading; leaflets from ſix to eight pairs, blunt, on very ſhort petioles, quite entire. Racemes axillary, ſolitary, ſimple, erect, longer than the leaves. Flowers ſmall and without ſcent. Calyx pubeſcent on the outſide. Corolla fleſh-coloured: ſtandard wide, roundiſh, emarginate, ſpreading very much, marked with deep purple ſtreaks; wings ſhorter than the keel, blunt and oblong; keel dark purple, aſcending at the end, almoſt as long as the ſtandard. Style ſmooth; ſtigma blunt, with white villoſe hairs, but bearded only at the tip. Legume ovate-roundiſh, acuminate at both ends, compreſſed-flat, little inflated, ſmooth, membranaceous-ſubpellucid, not opening of itſelf. Seeds very few, compreſſed and black [l].

Native of Africa. Introduced in 1776, by Joſ. Nich. de Jacquin, M. D.—It flowers in auguſt [m].

6. Annual, ſeldom perennial in the ſtem, ſmooth. Corollas dark blood red, with a ſtriated ſtandard, the length of the wings and keel. Legumes compreſſed [n], ſmall, membranaceous, very thin, ovate, pedicelled, obliquely mucronate. Seeds two or four, rather large, compreſſed, of a dirty cheſtnut colour [o].]

Stem a foot and half high and ſlender, dividing at top into three or four branches. Leaflets five or ſix pairs, very narrow, an inch long, a little hoary. Flowers ſmall, three together, on ſlender peduncles; appearing in july. The ſeeds ripen in autumn.

Native of the Cape of Good Hope.

[Cultivated 1731, by Mr. Miller [p].

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[a] Juſſieu.
[b] Scopoli.
[c] Gærtner.
[d] Haller and Ray.
[e] Hort. kew. from Lobel.
[f] Hort. kew.
[g] Ibid.
[h] Linn. ſpec.
[i] Mill. dict. and fig.
[k] Hort. kew.
[l] Jacquin.
[m] Hort. kew.
[n] Linn. ſpec.
[o] Gærtner.
[p] Hort. kew.

7. Stems angular, ſtriated, fiſtulous, flowering the ſecond year. Stipules narrow, acuminate, ſubfalcate. Leaflets from ſeven to ſeventeen, nearly oppoſite, ſcarcely emarginate, ending with a ſmall point, quite entire. Peduncles axillary, elongated, racemed, many-flowered, pubeſcent, with ſmall ſubulate bractes. Calyx pubeſcent: corollas ſmall, whitiſh or red, with blood-red ſtreaks. Style naked; ſtigma pubeſcent, toothletted. Legumes compreſſed, ovate[q]. It was ſent to Retzius under the title of *C. herbacea*, of which he affirms there are ſeveral ſpecies.]

8. The eighth ſort was ſent me from La Vera Cruz, in New Spain, in the year 1730, by Dr. Houſtoun. This has a ſhrubby ſtalk, which riſes to the height of twelve or fourteen feet, ſending out many branches; the leaves are compoſed of three pairs of oval leaflets, terminated by an odd one; theſe are indented at the top, and are of a light green. The flowers are of a bright yellow, and ſtand two or three upon each peduncle, and are ſucceeded by compreſſed winged pods near four inches long, which end in long points.

9. This has many ſlender woody ſtems, which trail on the ground, and are divided into many ſmaller branches; the leaves are compoſed of twelve or fourteen pairs of ſmall, narrow, oval leaflets, terminated by an odd one; theſe, and alſo the ſtalks, are covered with a whitiſh down. The flowers are very ſmall, of a purple colour, and ſtand upon very long ſlender peduncles, each ſuſtaining three or four flowers; theſe are ſucceeded by compreſſed pods little more than half an inch long, which are a little bent like a ſickle, each containing a ſingle row of ſmall kidney-ſhaped ſeeds. It flowers in june and july, and the ſeeds ripen in autumn. This is a perennial plant, which, if ſheltered in the winter, will continue ſeveral years; but the branches do not extend more than a foot in length; and unleſs they are ſupported, always trail upon the ground.

The ſeeds were ſent to Mr. Miller from the Cape of Good Hope in 1753.

PROPAGATION AND CULTURE.

1, 2, 3. The three firſt mentioned ſorts are very hardy ſhrubs, which thrive in the open air extremely well, and are generally propagated for ſale in the nurſery-gardens; but the firſt ſort having been longer in England, is more generally known and propagated than either of the other, which have been but few years in the Engliſh gardens, nor had the third ſort been long known in this country in Mr. Miller's time; but as the ſeeds ripen here very well, it is now in as great plenty as the firſt ſort.

Theſe are all propagated by ſowing their ſeeds any time in the ſpring, in a bed of common earth; and when the plants are come up, they muſt be kept clear from weeds; and the Michaelmas following they ſhould be tranſplanted either into nurſery rows, or in the places where they are deſigned to remain; for if they are let grow in the ſeed-bed too long, they are very ſubject to have downright tap-roots, which render them unfit for tranſplantation; nor ſhould theſe trees be ſuffered to remain too long in the nurſery before they are tranſplanted, where they are to remain for the ſame reaſon.

The firſt ſort growing to the height of twelve or fifteen feet, is very proper to intermix with trees of a middling growth in wilderneſs quarters; or in clumps of flowering trees, where the oddneſs of their flowers and pods will make a pretty variety, eſpecially as theſe trees continue a long time in flower; for they uſually begin flowering by the end of may, and from that time to ſeptember they are ſeldom deſtitute of flowers, but eſpecially the ſecond ſort.

Theſe ſhrubs make great ſhoots annually, which are frequently broken down by ſtrong winds in the ſummer; ſo that if they are not ſheltered by other trees, their branches ſhould be ſupported, otherwiſe they will be broken and ſplit off, whereby the trees will be rendered unſightly.

The third ſort does not grow ſo tall as the common, but makes a more regular ſhrub, and is leſs liable to ſplit. The flowers of this ſort being of a duſky red colour, ſpotted with yellow, it makes a very pretty variety, and is as hardy as the common ſort, therefore may be propagated by ſeeds in the ſame manner.

[Mr. Curtis has learned by experience, that a very wet ſoil proves fatal to the common Bladder-Senna.—The ear-wigs finding a commodious retreat within the bladders, are great deſtroyers of the ſeeds: Mr. Miller therefore recommends the hanging lobſter-claws, or bowls of tobacco pipes on the ſhrubs, to entice theſe inſects[r].

The third ſort ſends forth many ſuckers, by which alſo it may be propagated; but the plants thus raiſed never grow ſo ſtrong, and are ſubject to produce many ſuckers[s].

4. The fourth ſort is tender, and will not live through the winters, when they are ſevere, in the open air in England; but in mild winters, if it be planted in a dry ſoil, and a warm ſituation, it will thrive very well; and thoſe plants which live abroad will flower much ſtronger, and make a finer appearance than thoſe which are preſerved in the green-houſe; for theſe plants require a large ſhare of air, otherwiſe they are apt to draw up weak, and not to produce their flowers in plenty; therefore when any of the plants are ſheltered in winter, they muſt be placed as near the window as poſſible, that they may have all the advantages of air; and in the ſpring they muſt be hardened, to bear the open air as ſoon as poſſible.

This ſort is propagated by ſeeds as the former. If the ſeeds are ſown early in the ſpring upon a warm border of light earth, the plants will flower in auguſt; and, if the autumn proves favourable, they will ſometimes ripen their ſeeds very well; but there are ſome perſons who ſow the ſeeds upon a moderate hot-bed in the ſpring, whereby they bring their plants ſo forward as to flower in july, whereby the ſeeds are generally perfected from theſe plants. When the plants are tranſplanted, it ſhould always be done while they are young, for they do not bear removing when they are large. This ſort will ſometimes live in the open air for three or four years, when the plants ſtand in a well ſheltered ſituation; and theſe will grow to have large heads, and make a very fine appearance when they are in flower; they will alſo continue much longer in beauty than thoſe plants which are treated more tenderly.

6. The ſixth ſort is a low annual plant, which ſeldom grows more than a foot and a half in height; the flowers being ſmall, and having little beauty, it is ſeldom preſerved but in botanic gardens. The ſeeds of this ſort muſt be ſown upon a moderate hot-bed in the ſpring, and the plants muſt be put into ſmall pots, and brought forward in another hot-bed. In july they will flower, when they may be expoſed in the open air, in a warm ſituation, where the ſeeds will ripen in ſeptember, and the plants will ſoon after decay.

8. The eighth ſort growing naturally in hot countries, is too tender to thrive in the open air in England. It is propagated by ſeeds, which muſt be ſown on a hot-bed in the ſpring; and when the plants are two inches high, they ſhould be each tranſplanted into a ſeparate ſmall pot filled with light earth, and plunged into a hot-bed of tanners bark, obſerving to ſhade them till they have taken freſh root; after which they muſt be treated in the ſame way as other plants from the ſame climate, always keeping them in a ſtove, which ſhould be of a moderate temperature of heat.

9. The ninth ſort may be raiſed on a moderate hot-bed in the ſpring, and afterward expoſed to the open air in ſummer; but in winter the plants muſt be ſheltered under a frame, otherwiſe the froſt will deſtroy them.

[COLUTEA. See *Coronilla*, *Indigofera*, *Pſoralea*, *Sophora*.
COMA AUREA. See *Athanaſia*, *Chryſocoma*, *Gnaphalium*.
COMAROIDES. See *Potentilla*.]

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[q] Retzius.

[r] Mill. fig.

[s] Ibid.

COMARUM. (Κομαρος *of Theophraſtus, is an evergreen tree.*)

Lin. gen. n. 638. *Reich.* 694. *Schreb.* 869. *Gærtn.* 73. *Juſſ.* 338.

Claſſ. 12. 5. Icoſandria Polygynia.

Nat. order of *Senticoſæ*. *Roſaceæ* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, ten-cleft, very large, ſpreading, coloured: *alternate diviſions* ſmaller, inferior; permanent.

Cor. *Petals* five, oblong, acuminate, three times ſmaller than the calyx on which they are inſerted.

Stam. *Filaments* twenty, ſubulate, inſerted into the calyx, length of the corolla, permanent. *Anthers* lunular, deciduous.

Pist. *Germs* numerous, roundiſh, very ſmall, collected into a head. *Styles* ſimple, ſhort, from the ſide of the germ. *Stigmas* ſimple.

Per. none. *Common receptacle of the ſeeds* ovate, fleſhy, very large, permanent. (globular, villoſe. *Gærtn.*)

Seeds numerous, acuminate, covering the receptacle, (naked, ſmooth. *G.*)

ESSENTIAL CHARACTER.

Cal. ten-cleft. *Pet.* five, ſmaller than the calyx. *Recept.* of the ſeeds ovate, ſpongy, permanent.

SPECIES.

1. Comarum paluſtre. *Marſh Cinquefoil.*
Lin. ſpec. 718. *Reich.* 2. 554. *fl. lapp. n.* 214. *ſuec. n.* 463. *hort. cliff.* 195. *Hudſ. angl.* 227. *With.* 540. *Lightf.* 276. *Relh. cant. n.* 280. *Hall. helv. n.* 1128. (Fragaria.) *Scop. carn. n.* 617. (Potentilla.) *Pollich. pal. n.* 502. *Leers herborn. n.* 399. *Gærtn. fruct.* 349. *t.* 73. *Fl. dan. t.* 636. *Villars dauph.* 3. 579. *Krock. ſileſ. n.* 811. *t.* 14.
Quinquefolium paluſtre. *Beſl. eyſt. æſtiv.* 10. *t.* 9. *f.* 1.—rubrum. *Bauh. pin.* 326.—quartum. *Dod. pempt.* 117.
Pentaphyllum paluſtre. *Cord. hiſt.* 95.—rubrum. *Lob. ic.* 691. 1. *Ger.* 836. 4. *emac.* 987. 4. *Raii hiſt.* 611.
Pent. vel. potius heptaphyllum, fl. rubro. *Bauh. hiſt.* 2. 398. c. t. 2. *Mor.* 2. 19. 4.
β. *Pluk. alm. t.* 212. *f.* 2. *Pet. brit. t.* 41. *f.* 2.

DESCRIPTION, &c.

This plant has creeping woody roots, which ſend out many black fibres, penetrating deep into boggy ground. Stems many, herbaceous, about two feet high, generally inclining to the ground. At each joint is one leaf, compoſed of five, ſix, or ſeven leaflets. The petals are not more than a third part of the ſize of the calyx.

[Stems cylindric, branched, a little hairy.—Lower leaves on long petioles, with broad ſtipules embracing the ſtem, bluntly lanceolate, having five or ſeven leaflets on ſhort petioles, the odd one largeſt, the lower pair ſmalleſt, oval, deeply and acutely ſerrated, upper leaves on ſhort petioles, with oval-lanceolate ſtipules, and five or three leaflets; others ſingle, with lanceolate ſtipules; upper ſide of the leaves ſlightly hairy, under ſide and petioles downy. Peduncles numerous, each ſupporting a ſingle flower, with a pair of lanceolate bractes. Segments of the calyx and petals acute and dark purple. Stamens, anthers, ſtyle, and receptacle black[a].—Petals marone-coloured. Stamens twenty to thirty, mulberry-coloured; anthers heart-ſhaped, the pollen yellow: ſtyles marone-coloured; the ſtigma has ſometimes a drop of tranſparent liquor. Receptacle conical, a little woolly[b].

Native of moſt parts of Europe, in boggy ground.] A few plants are growing upon a bog at Hamſtead; but the neareſt place to London where it grows wild in plenty, is in the meadows near Guilford in Surry. [It is found alſo at Selburne in Hampſhire: near Bromſgrove Lickey, in Worceſterſhire: Gamlingay in Cambridgeſhire: in Norfolk: near Colcheſter, in Eſſex: Giggleſwick Tarn, near Settle: in Scotland and Ireland. June. The roots dye wool of a dirty red colour, and have aſtringency enough, with other plants of the ſame order, to tan leather. The Iriſh rub their milking pails with it, to make the milk appear thicker and richer. Goats eat it. Cows and ſheep are not fond of it. Horſes and ſwine refuſe it[c].]

β. There is a variety with thicker and more villoſe leaves, which grows plentifully in Ireland, and in the north of England; but after one year's growth in a garden it is not to be diſtinguiſhed from the common ſort.

PROPAGATION AND CULTURE.

This plant being a native of bogs, cannot well be preſerved in a garden, except it be planted in a ſoil congenial to its natural one. The roots may be removed from the place of their growth in october, and will be be in no danger of ſucceeding if they are planted in boggy ground.

[**COMBRETUM.** (*The name of a plant in Pliny, deſcribed by him as very like the* Bacchar, *but taller, with the leaves drawn out ſo finely as to reſemble threads.*)

Lin. gen. n. 475. *Reich.* 509. *Schreb.* 641. *Gærtn.* 36. *Juſſ.* 320. *Loeſl. it.* 308. 248.

Claſſ. 8. 1. Octandria Monogynia.

Nat. order of *Calycanthemæ*. *Onagræ* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, ſuperior, bell-ſhaped, four or five-toothed, deciduous.

Cor. *Petals* four or five, ovate, acute, inſerted into the calyx, and ſcarce longer than it.

Stam. *Filaments* eight or ten, briſtle-form, erect, very long; *Anthers* a little oblong.

Pist. *Germ* inferior, linear. *Style* briſtle-form, length of the ſtamens. *Stigma* acute.

Per. none, except the cruſt of the ſeed.

Seed ſingle, four or five-angled; angles membranaceous; acuminate.

ESSENTIAL CHARACTER.

Cal. four or five-toothed, bell-ſhaped, ſuperior. *Cor.* four or five-petalled, inſerted into the calyx. *Stam.* very long. *Seed* one, four or five-angled, the angles membranaceous.

SPECIES.

1. Combretum laxum.
Lin. ſpec. 496. *Reich.* 2. 154. *Loeſl. it.* 308. *Jacqu. amer.* 104. *pict.* 53. *Gærtn. fruct.* 176. *t.* 36? *Swartz obſ.* 143.
Spikes lax, leaves oppoſite.
2. Combretum ſecundum.
Lin. ſpec. 496. *Reich.* 2. 155. *Jacqu. amer.* 103. *t.* 176. *f.* 30. *pict.* 53. *t.* 260. *f.* 26.
C. laxum. *Aublet guian.* 351. *t.* 137. *Loeſl. itin.* 248. Gaura.
Spikes in one row, leaves oppoſite.
3. Combretum purpureum.
Vahl ſymb. 3. 51.
Leaves ovate-oblong, both they and the calyxes naked, ſpikes ſimple, directed one way.
4. Combretum decandrum.
Jacqu. amer. 104. *pict.* 53. *t.* 260. *f.* 27.
Criſtaria coccinea. *Sonnerat voy.* 2. 247. *t.* 140. *Gærtn. fruct.* 1. 177.
Leaves alternate, flowers ten-ſtamened.

DESCRIPTIONS, &c.

This genus is very imperfectly known, and being a very fine one, deſerves the attention of the cultivators of exotic plants. Probably ſome of the ſynonyms given above belong to different ſpecies, of which there are ſeveral known in Europe only from dried ſpecimens.

1. This is a ſhrub with round ſcandent branches, the younger ones brachiate. Leaves ovate, acuminate, ſometimes blunt, with or without a point, quite entire, ſmooth, petioled, three inches long. Spikes erect, three inches long, axillary and terminating. Flowers ſmall, whitiſh, on very ſhort pedicels[d].

Jacquin affirms, that the plant which Aublet has figured and deſcribed under the ſame name, is not his plant, although it have the ſame habit, for the flowers are totally different. He would unite

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[a] Woodward MSſ.

[b] Withering.

[c] Withering & Lightfoot.

[d] Jacquin.

Aublet's with Loefling's plant, and conſider them as a diſtinct ſpecies[e]. It ſeems indeed to agree better with our ſecond ſpecies, than with the firſt. The leaf and fruit in Aublet's figure agree well enough with Jacquin's of his *ſecundum*, but not with that of Gærtner, who refers to Aublet, and not to Jacquin.

This ſpecies is thus deſcribed by Swartz. Branches brachiate, the branches compreſſed a little at the tip, duſky ferruginous, pubeſcent. Leaves elliptic, large, entire, nerved. Flowers raceme-ſpiked. Common peduncle axillary on the terminating branches, erect, round, ferruginous-pubeſcent. Racemules oppoſite, ſpreading, many-flowered. Pedicels one-flowered. Calyx goblet-ſhaped, four-cornered, villoſe within, coloured. Petals four, with very ſhort claws, inſerted into the angles of the calyx, ovate, ſpreading, yellowiſh white. Filaments eight, twice as long as the calyx, ſpringing from the bottom of it: anthers ovate, minute. Germ roundiſh: ſtyle ſubulate-filiform. Capſule oblong, four-cornered, four-winged, one-celled. Seed four-cornered, the corners membranaceous and red, one-celled. It varies with narrower ovate-lanceolate leaves.

Native of the Weſt-Indies.

2. This is a ſmall tree, twelve feet high, ſupporting itſelf on other trees by its round and very long branches. Leaves ovate-oblong, acuminate, quite entire, ſmooth, veined, diſtich, petioled, four inches long, the upper ones on the flowering branchlets ſmaller. Spike pinnate, compoſed of ſeveral oppoſite ones in a double row uncertain in their number, and an odd one at the end, extended horizontally along with the extremity of the branch whence it ariſes: pedicels one-flowered, extremely ſhort, placed very cloſe to each other. Flowers very numerous, with ſcarcely any ſcent, yellowiſh green except the anthers, which are red, all turned upwards and erect, all together appearing like a creſt. The branches, when broken, and the leaves bruiſed, have a fetid and very unpleaſant ſmell.

Native of Carthagena in South America[f]; and alſo of Guiana.

3. This is a very ſmooth ſhrub, with round brachiate branches. Leaves petioled, oppoſite, three inches long, quite entire, ſomewhat coriaceous, a little attenuated at the tip, under the ſpikes an inch long, acute. Peduncles oppoſite, ſpreading very much, a ſhort ſpan in length, four-cornered. Flowers copious, ſcattered. A briſtle-ſhaped bracte at the baſe of each pedicel. Calyx very ſmooth. Corolla purple. Seed roundiſh, retuſe, very ſmooth, of a ſhining golden colour. Native of the Eaſt-Indies[g].

4. This is a weak branching ſhrub, climbing to twenty feet in height, with prickles on the older branches. Leaves oval-oblong, quite entire, ſhining, petioled, two or three inches long, ending in a blunt channelled cartilaginous point. Spikes looſe, half a foot long, about ten on one common peduncle, at the ends of the branchlets, which are frequently continued weak and leafleſs ſix feet beyond the flowers. Pedicels very ſhort. Flowers ſmall and very numerous, coming out uſually before the leaves. Fruits browniſh. Native of Carthagena, flowering in may and june, and fruiting in july and auguſt[h].

COMĒTES. (*From* Κομητης, *crinitus*; *the involucres being remarkably hiſpid.*)

Reich. gen. n. 167. *Schreb.* 211. *Juſſ.* 437.

Claſſ. 4. 1. Tetrandria Monogynia.

Nat. order of *Tricoccæ*.

GENERIC CHARACTER.

CAL. *Involucre* three-flowered, (flowers ſeſſile,) four-leaved; *leaflets* oblong, equal, ſpreading, ciliate-hiſpid.

Perianth four-leaved; *leaflets* oblong, equal, length of the involucre.

COR. none.

STAM. *Filaments* four, capillary, length of the perianth. *Anthers* roundiſh.

PIST. *Germ* roundiſh. *Style* filiform, length of the flower. *Stigma* three-cleft.

PER. *Capſule* tricoccous.

SEED ſolitary.

OBS. *It has an affinity with* Dalechampia.

ESSENTIAL CHARACTER.

Involucre four-leaved, three-flowered. *Cal.* four-leaved. *Capſ.* tricoccous.

SPECIES.

1. Cometes alterniflora.
Lin. ſyſt. 163. *Reich.* 342. *mant.* 39. *Burm. ind.* 39. *t.* 15. *f.* 5.
Clinopodium parvum ſinicum. *Pluk. amalth.* 61. *t.* 380. *f.* 4.

DESCRIPTION, *&c.*

Annual. Stem herbaceous. Leaves oppoſite, ſeſſile, obovate, acuminate, very entire, ſmooth. Peduncles axillary, alternate, ſolitary, one-flowered, patulous, the length of the leaves[i].

Stems a foot high, round. Peduncles in pairs, terminating and axillary, ſubalternate[k].

Native of Suratte.

COMFREY. See *Symphytum.*]

COMMELĪNA. (*This genus was ſo named by Plumier, from the two Commelins, John and Caſpar, brothers, and famous Dutch botaniſts.*)

Lin. gen. n. 62. *Reich.* 68. *Schreb.* 86. *Gærtn.* 15. *Juſſ.* 45. *Brown.* 125. *Plum.* 38. *Zanonia. Plum.* 38.

Claſſ. 3. 1. Triandria Monogynia.

Nat. order of *Enſatæ. Junci* Juſſ.

GENERIC CHARACTER.

CAL. *Spathe* cordate, converging, compreſſed, very large, permanent.

COR. *Petals* ſix, of which the three exterior are ſmall, ovate, concave, reſembling a perianth; the three inferior ones alternate, very large, roundiſh, coloured.

Nectaries three, reſembling *ſtamens*, ſeated on their proper filaments, cruciform, horizontal.

STAM. *Filaments* three, ſubulate, reclined, agreeing in figure and circuit with the filaments of the nectary, but inferior to them. *Anthers* ovate.

PIST. *Germ* ſuperior, roundiſh; *Style* ſubulate, revolute, length of the ſtamens. *Stigma* ſimple.

PER. *Capſule* naked, nearly globular, three-furrowed, three-celled, three-valved. (ſuperior two or three-celled. *Gærtn.*)

SEEDS two, angulated.

OBS. *The number is different; hence if the four ſmall petals are equal, then out of the number of the other parts, exclude one third, and add unity to the nectaries, and you will have the number required.*

In Zanonia, *the three exterior ſmall petals continue in the form of a perianth; the three interior ones are equal.*

Some are for removing all the Zanonias *to the genus* Tradeſcantia.

ESSENTIAL CHARACTER.

Cor. ſix-petalled. *Nect.* three, croſs-ſhaped, pedicelled.

SPECIES.

* *With two petals larger.*

1. Commelina communis. *Common American Commelina.*
Lin. ſpec. 60. *Reich.* 113. *hort. upſ.* 18. *cliff.* 21. *Gron. virg.* 130, 8. *Thunb. jap.* 35. *Lour. cochinch.* 38. *Dill. elth.* 93. *t.* 78. *f.* 89. *Gærtn. fruct.* 49. *t.* 15. *Mor. hiſt.* 15. *t.* 2. *f.* 3. *Herm. par.* 145, 146. *Raii hiſt.* 721. *n.* 14 & 1332.
Corollas unequal; leaves ovate-lanceolate, acute; ſtem creeping, ſmooth.

2. Commelina africana. *African Commelina.*
Lin. ſpec. 60. *Reich.* 113. *Willich. illuſtr. n.* 19. *Berg. cap.* 9. *Gærtn.* 50. *t.* 15. *Lour. cochinch.* 39.
Corollas unequal; leaves lanceolate, ſmooth; ſtem proſtrate.

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[e] Amer. pict.

[f] Jacquin.

[g] Vahl.

[h] Jacquin.

[i] Linn. mant.

[k] Burm. ind.

[3. Commelina benghalenſis. *Eaſt-Indian Commelina.*
Lin. ſpec. 60. *ſyſt.* 94. *Reich.* 113. *Lour. cochinch.* 39. *Murr. in comm. gott.* 2. (1779) *p.* 18. *t.* 5.
Ephemerum bengh., &c. *Pluk. alm. t.* 27. *f.* 3.
Corollas unequal; leaves ovate, obtuſe; ſtem creeping.]

4. Commelina erecta. *Upright Virginian Commelina.*
Lin. ſpec. 60. *Reich.* 114. *hort. upſ.* 18. *cliff.* 495. *Gron. virg.* 11, 8. *Dill. elth.* 91. *t.* 77. *f.* 88.
Corollas unequal; leaves ovate-lanceolate; ſtem erect, ſubhirſute, entirely ſimple.

** Zanonias, *with three petals larger.*

[5. Commelina virginica.
Lin. ſpec. 61. *Reich.* 114.
Ephem. phalangoides virginianum, &c. *Pluk. alm. t.* 174. *f.* 4.
Corollas nearly equal; leaves lanceolate, ſubpetioled, bearded on the edge; ſtems upright.]

6. Commelina tuberoſa. *Tuberous-rooted Commelina.*
Lin. ſpec. 61. *Reich.* 114. *hort. upſ.* 18. *cliff.* 21. *Willich illuſtr. n.* 18. *Gærtn.* 50. *t.* 15. *Dill. elth.* 94. *t.* 79. *f.* 90.
Corollas equal; leaves ſeſſile, oval-lanceolate, ſubciliate.

7. Commelina Zanonia. *Gentian-leaved Commelina.*
Lin. ſpec. 61. *Reich.* 114. *Gærtn.* 50. *t.* 15. *Brown. jam.* 125. 1.
Zanonia graminea, perfoliata. *Plum. gen.* 38.
Tradeſcantia Zanonia. *Swartz prodr.* 57. *obſ.* 28.
Corollas equal; peduncles thickened; leaves lanceolate; ſheaths ſwelling, hirſute about the edge; bractes in pairs.

[8. Commelina vaginata.
Lin. ſyſt. 94. *Reich.* 115. *mant.* 177.
Corollas equal; leaves linear; flowers two-ſtamened, ſheathed with an involucre.

9. Commelina nudiflora.
Lin. ſyſt. 94. *Reich.* 115. *mant.* 177. *fl. zeyl. n.* 31.
Ephem. phalang. maderaſpatenſe, &c. *Pluk. alm. t.* 27. *f.* 4.
Corollas equal; peduncles capillary; leaves linear; involucre none; flowers two-ſtamened.

10. Commelina ſpirata. *Spear-leaved Commelina.*
Lin. mant. 176. *Reich. ſyſt.* 116. *Ait. hort. kew.* 77.
Corollas equal; leaves lanceolate; flowers panicled.

11. Commelina cucullata.
Lin. mant. 176. *ſyſt. Reich.* 115. *Lour. cochinch.* 39.
Corolla unequal, two-petalled, leaves ovate, involucres cowled, turbinate.

12. Commelina japonica.
Thunb. in Linn. tranſ. 2. 332.
Leaves ovate-lanceolate, waved, ſtem erect, angular, hairy, flowers panicled.]

DESCRIPTIONS, *&c.*

1. This is an annual plant, having ſeveral trailing ſtalks, that put out roots at the joints. At each joint is one leaf, which is ſmooth, of a deep green, marked with ſeveral longitudinal nerves, and embracing the ſtalk. Flowers axillary, two or three together, on ſhort peduncles. Corolla compoſed of two large blue petals, and four ſmall green ones.

[Stems, according to the obſervation of Dillenius, from a foot to two feet in length and more, branching. Leaves reſembling thoſe of *Sopewort*, feeling roughiſh if ſtroked from the baſe upwards, but having no hairs except at the edges of the ſheaths.—Native of America, the Weſt Indian iſlands, and Africa. Cultivated 1732, by Dr. Sherard, at Eltham[a]] It flowers in june and july, and the ſeeds ripen in autumn.

2. Root fibrous. Stalks many, trailing, three feet long, putting out roots at every joint, ſo that where it has room to ſpread, it will cover a large ſurface. The leaves are very like thoſe of the firſt ſort, but the flowers are larger, and of a deep yellow colour: the ſeed-veſſels alſo are larger.

[It differs from the firſt in having larger kidney-form yellow petals, with a third ovate equal to them, but with longer filaments; the ſheaths of the leaves are ciliated, the involucre not netted: the ſheaths have another very ſmall ſheath within them[b].

Capſule ovate, two-valved, three-celled. Seeds in the upper cells, two, three or four, roundiſh, ſmooth, always barren; in the lower cell fertile, the whole covered with the valve growing to it, elliptic, flat above, and convex below[c]. Native of Africa.

Cultivated 1759, by Mr. Philip Miller[d].

It flowers in july, and the ſeeds ripen in autumn.

3. Root annual. (Loureiro ſays perennial.) Stems numerous, diffuſed, creeping at the baſe either by teats or fibres, then aſcending to a ſpan or foot in height, roundiſh, ſtriated, hirſute, jointed, the internodes two inches long, branches from the very baſe, alternate, the lower ones longeſt. Leaves before they open rolled in, from an inch to an inch and half in length, nerved, pubeſcent, waved. Petioles ciliate with brown hairs, at firſt linear, then ſheathing; ſheaths marked with lines, ſpotted with purple. Spathe terminal, cowled, compreſſed, ſubtriangular, the apex turned down, the two ſides united, marked with lines. Peduncle within the ſpathe double, one ſlender, longer, one-flowered, the other thicker, channelled, bearing from two to four flowers, on jointed round inflex pedicels. The two inner petals very large, blue, the four outer pale blue. Nectaries yellow[e]. Native of Bengal and Cochinchina.]

4. Root perennial. Stems a foot and half high, having a ſingle leaf at each joint, ſhaped like thoſe of the firſt ſort, and embracing the ſtem. Flowers axillary at the upper part of the ſtalk, on ſhort peduncles. Petals pale blue.

[Leaves ſubhirſute, but not hairy except at the ſheath. The flowers are larger than in the firſt ſort, plaited about the edge, and as it were crenated, finely ſtriated. Of the three coloured petals the two upper only are conſpicuous, the third is ſmall and very narrow, whitiſh and pellucid; the three outer petals are ſlender, the upper one ſmaller than the other two, which are blueiſh. Capſules roundiſh, obtuſely triangular, three-ſeeded[f]. Cultivated 1732, by James Sherard, M.D.[g].

5. Stems erect, ſimple, gloſſy, two feet high. Leaves ſcabrous on the upper ſurface, when rubbed from the baſe; ſheaths nerved, ſubpubeſcent, ciliated about the edge with ferruginous hairs. Spathes terminating, ſubcordate. Flowers blue, with the petals cordate, and very entire; the lower one on a ſhort pedicel[h]. The ſtructure and fruit like that of the firſt ſpecies; but the capſule a little larger, and whitiſh; the ſeeds more wrinkled, and bay inclining to aſh colour[i]. Native of Virginia. Perennial.]

6. This has a thick fleſhy root compoſed of ſeveral tubers, ſomewhat like thoſe of Ranunculus, ſeveral joining together at the top, where they form a head, and diminiſh gradually downwards: from this ariſe one or two inclining ſtalks, which put out ſide branches from their lower parts. Some of the leaves are on long petioles, others embrace the ſtalk; they have ſhort hairs on their under ſurface, and towards the ſtalk, but are ſmooth above, of a deep green colour, and cloſe every evening, or in cold weather. The flowers are axillary towards the upper part of the ſtalk, on ſlender peduncles. Corolla compoſed of three large, roundiſh, blue petals, and three ſmaller, which are green.

[Capſule ovate-acuminate, rather flatted, two-valved, three-celled; the upper valve divided longitudinally into two cells, but the lower one-celled, growing cloſe to the ſeed: in each of the upper cells two tubercled ferruginous ſeeds; in the lower one, elliptic, ſmooth, compreſſed like a lens, bay-coloured. *Gærtn.* Cultivated 1732, in the Eltham garden, from ſeeds ſent from Mexico, where it is ſaid to grow on the mountains. It is uſed there externally for diſcuſſing tumours, and internally in hot plethoric habits[k].] Mr. Miller had it from La Vera Cruz in New Spain, by Dr. Houſtoun.

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[a] Hort. kew.

[b] Linn. ſpec.

[c] Gærtner.

[d] Hort. kew.

[e] Murray.

[f] Dillenius.

[g] Hort. kew.

[h] Linn. ſpec.

[i] Gærtner.

7. This has trailing ſtalks like the firſt, with narrow graſſy leaves, embracing the ſtalks with their baſe. The flowers are produced at the ends of the ſtalks upon thick peduncles, three flowers generally on each. The corolla has three equal large petals of a ſky blue, and three ſmaller, which are green.

[The ſheaths of the leaves are very wide and diſtant from the ſtalk, hirſute on the edge. There are two lanceolate oppoſite bractes[l]. Fruits berried, ſeſſile, in an ovate terminating raceme. Berries ſpurious, dark purple, formed of the corolla tranſmuted into a fleſhy, ſucculent, three-lobed galea, drawn over the capſule, and covering it totally. Capſule cylindric-ovate, cruſtaceous, dotted in rows, teſtaceous, three-celled, and opening into three parts at top. Seeds two, (ſometimes one) in each cell; one angular, a little wrinkled, aſh-coloured, having a little pap covering the embryo on the ſide; the other elliptic, plano-convex, a little wrinkled about the edge, bearing the embryo on the middle of the back[m].]

Native of the Weſt Indies; Mr. Miller had the ſeeds from the iſland of Barbuda. Cultivated 1759, by him.

It flowers from june to auguſt, but does not perfect ſeeds in England.

[8. Annual. Stems aſcending, numerous, ſomewhat ſcabrous. Leaves ſeſſile, acute, ſheathing. Peduncles terminating and axillary, elongated, ending in a ſtriated, lanceolate involucre, convoluted ſo as to be almoſt cylindric. Four filaments of the nectary, half the length of the ſtamens. Two filaments of the ſtamens, bearded, a little bent back, the length of the corolla: anthers yellow, ſpotted with black. Found by Koenig in the Eaſt-Indies[n].

9. Annual. Stem ſomewhat erect, decumbent at the baſe, ſomewhat ſcabrous, a ſpan in height. Leaves ſeſſile, acute, ſheathing. Peduncles terminating, two, a greater and a ſmaller. Flowers from four to ſix, pedicelled (without any involucre) nodding. Three filaments of the nectary, half the length of the ſtamens, naked. Two filaments of the ſtamens, bearded in the middle, declining where the corolla gapes. Found by Koenig in dry paſtures of the Eaſt-Indies[o].

10. Annual. Stem creeping, aſcending, ſomewhat ſcabrous. Leaves ſheathing, moſt minutely ſerrate; the upper leaf cordate-lanceolate; ſheaths ciliated on the edge. Panicle terminating, divaricate, with little ſheathing bractes. Three filaments of the nectary, a little ciliate on the ſides. Three filaments of the ſtamens, bearded, but naked above the middle: anthers blue. The ſtyle and ſtigmas are ſpirally convolved and evolved variouſly.—Obſerved by Koenig, in the Eaſt-Indies, in moiſt places near brooks[p].

Introduced 1783, by John Earl of Bute. It flowers in july and auguſt[q].

11. Stem erect, a ſpan high, creeping at the baſe with filiform roots. Leaves nerved, petioled, with ſheaths wider than the ſtem, ciliate at the edge, with diſtant, ſpreading briſtles. Involucres terminating, truncate, many-flowered, entirely coaleſcent by the ſide. Flowers peduncled, minute[r].

According to Loureiro, it is a foot and half high, and red. Leaves five-nerved, waved. The two large petals of the corolla bright blue; the four others he attributes to the calyx, and affirms that it certainly has no more than two large petals; though Linneus, on the authority of Burmann, (Ind. 18. t. 7. f. 3.) puts it among the tripetalous ſpecies. Murray ſuppoſes it not to be different from C. benghalenſis. Probably Linneus was of the ſame opinion. Native of the Eaſt-Indies, and Cochinchina, where it is a weed in their gardens.

12. Stem grooved, erect, hairy, panicled at top, a foot high. Leaves alternate, ſheathing, oblong, acute, ſmooth, the lower ones a finger's length, the upper ones an inch. Flowers on the panicled branches in racemes. Native of Japan[s].]

PROPAGATION AND CULTURE.

All the ſorts are propagated by ſeeds; the firſt will grow if ſown in the full ground; but if the ſeeds are ſown upon a warm border of light earth in autumn, the plants will riſe early in the ſpring; ſo from theſe good ſeeds may be expected, if the ſeaſon proves favourable; whereas thoſe which are ſown in the ſpring, often lie long in the ground, and rarely ripen their ſeed. Theſe plants have but little beauty, ſo that two or three of each ſort is as many as moſt people chooſe to have; therefore if the ſeeds are ſown in autumn where the plants are deſigned to remain, or the ſeeds permitted to ſcatter, the plants will require no farther care, but to keep them clear from weeds. The ſecond ſeldom ripens ſeeds in England, but the roots ſend out offſets, by which the plant is eaſily propagated. But it is too tender to live in the full ground in winter, unleſs it has a warm ſheltered ſituation; therefore ſhould be planted in pots, and ſheltered under a common frame in winter, and expoſed abroad in ſummer; the beſt time to tranſplant and part theſe roots is about the end of march.

The other ſorts are tender, their ſeeds therefore muſt be ſown on a moderate hot-bed in the ſpring, and when the plants are two inches high, they ſhould be tranſplanted to a freſh hot-bed to bring the plants forward; when they have taken freſh root, they ſhould have a large ſhare of freſh air admitted to them every day in warm weather, to prevent their growing weak; and in june theſe may be carefully taken up, and tranſplanted on a warm border of light earth, obſerving to ſhade them till they have taken freſh root; after which they will require no other care, but to keep them clean from weeds. With this management the plants will flower and produce good ſeeds.

The ſecond and ſixth ſorts may be continued, if they are planted in pots, and in autumn placed in the bark-ſtove; or if the roots of the ſixth ſort are taken out of the ground in autumn, and kept in a warm place in winter, they may be planted again in the ſpring, placing them on a hot-bed to forward their ſhooting, and theſe will produce ſtronger plants than thoſe which riſe from ſeeds.

[Commelina axillaris and criſtata. See *Tradeſcantia.*

COMMERSONA. See *Barringtonia.*

COMMERSONIA. (*This name was given by Forſter in memory of M. Commerſon, the French traveller.*)

Forſt. gen. n. 22. *Lin. ſuppl.* 26. *Schreb.* 535. *Juſſ.* 428. *Gærtn. t.* 94.

Claſſ. 5. 5. Pentandria Pentagynia.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-parted, corolliferous. *Diviſions* ovate, acute.

COR. five-petalled. *Petals* linear, dilated at the baſe on both ſides with an inflected lobe, ſpreading.—*Nectary* five-parted, within the ſtamens: *diviſions* lanceolate, erect, ſhorter than the petals: *corpuſcles* filiform, five, villoſe, from the diviſions of the nectary.

STAM. *Filaments* five, very ſhort at the baſes of the petals. *Anthers* roundiſh, twin.

PIST. *Germ* globular, villoſe, with five ſwellings. *Styles* five, filiform, approximating, ſhort. *Stigmas* globular.

PER. *Capſule* globular, five-celled, echinate, with long, hairy briſtles: *cells* two-ſeeded.

SEEDS ovate.

ESSENTIAL CHARACTER.

Cal. one-leafed, bearing the corolla. *Pet.* five. *Nect.* five-parted. *Capſ.* five-celled, echinate.

SPECIES.

1. Commerſonia echinata.

Lin. ſyſt. 300. *ſuppl.* 187. *Forſt. fl. auſtr. n.* 144. *Gærtn. fruct.* 2. 79.

Reſtiaria alba. *Rumph. amb.* 3. 187. *t.* 119.

Daſypogon. *Soland. mſs.*

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[k] Dillenius.
[l] Linn. ſpec.
[m] Gærtner.
[n] Linn. mant.
[o] Ibid.
[p] Ibid.
[q] Hort. kew.
[r] Linn. mant.

[s] Thunb. in Linn. tranſ.

DESCRIPTION, &c.

A tree, with alternate, obliquely ovate, acuminate, ſerrate leaves, hoary underneath. Flowers minute, panicled, hoary. The fruit very much reſembles that of Sparrmannia, both in form and ſurface. It is thus deſcribed by Gærtner.—Capſule ſuperior, ſubgloboſe, five-grained, five-valved. Rind coriaceous, echinated all over with ſoft villoſe briſtles, opening into five parts at the top. Grains (cocculi) five, obovate, narrowed downwards, bony, gibbous on one ſide, angular on the other, ſemibilocular from the back, two-valved, the valves of the contiguous grains united and forming the proper partitions of the capſule. In each cell two ſeeds, ovate-oblong, a little thicker above, very ſlightly compreſſed, of a red-ferruginous colour, but blackiſh at the top; incompletely covered with an arill, which is membranaceous, very thin, whitiſh, lacerated, fixed to the navel of the ſeed, and covering the whole ventral, but not the dorſal part.—Native of Otaheite and the other Society iſles[a]. Diſcovered april the 30th 1774.]

COMOCLĀDIA. (*From* κομοω, *comatus ſum; and* κλαδος, *ramus: the boughs forming a buſh or head.*

Lin. gen. n. 49. *Reich.* 53. *Schreb.* 66. *Juſſ.* 370. *Brown.* & *Jacqu.*

Claſſ. 3. 1. Triandria Monogynia.

Nat. order of *Terebintaceæ.* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, three-parted, ſpreading, coloured, diviſions roundiſh.

Cor. *Petals* three, (three-parted, *Browne.*) ovate, acute, flat, very ſpreading.

Stam. *Filaments* three, ſubulate, ſhorter than the corolla: *anthers* roundiſh, incumbent.

Pist. *Germ* ovate, *ſtyle* none, *ſtigma* obtuſe, ſimple.

Per. *Drupe* oblong, crooked, marked above with three dots.

Seed. *Nut* membranaceous, the figure of the drupe.

ESSENTIAL CHARACTER.

Cal. three-parted. *Cor.* three-parted. *Drupe* oblong; with a two-lobed nucleus.

SPECIES.

1. Comocladia integrifolia.
   Lin. ſpec. 49. *ſyſt.* 82. *Reich.* 93. *Jacqu. amer.* 12. *Brown. jam.* 124. *Swartz obſ.* 26.
   Prunus racemoſa, &c. *Sloan. jam.* 2. 131. *t.* 222. *f.* 1. *Raii dendr.* 44.
   Leaflets entire.
2. Comocladia dentata.
   Lin. ſpec. 49. *ſyſt.* 82. *Reich.* 93. *Jacqu. amer.* 13. *t.* 173. *f.* 4. *pict.* 12. *t.* 259. *f.* 2.
   Leaflets ſpiny-toothed.

[3. Comocladia ilicifolia.
   Swartz prodr. 17.
   Ilex dodonæa. *Lin. ſpec.* 182. *Plum. gen.* 20. *ic.* 118. *f.* 1.
   Leaflets angular-ſpiny.

DESCRIPTIONS, &c.

1. Seldom more than twenty feet in height (12 or 16. *Brown.* 10 to 30. *Swartz.*) Trunk erect (ſeldom growing to any conſiderable thickneſs. *Br.*), dividing into few branches, adorned at the end with pinnated ſmooth leaves like a frond, having at moſt eight leaflets on each ſide of a round rib two feet in length, with an odd one at the end; theſe are ovate-lanceolate, acuminate, ſlightly wrinkled by the tranſverſe veins, the edges a little revolute, petioled, four inches long: from the axillas hang looſe panicled racemes, a foot and half in length, divided into about twenty-four partial lateral alternate racemes; and theſe more or leſs compounded, the whole forming an ample panicle. Flowers very numerous, ſmall, ſeſſile, without ſcent, of a deep red colour: many of them have the calyx and corolla four-parted, with four ſtamens. Drupes red and ſhining: (black and ſucculent. *Swartz.*) The whole tree abounds in a watery ſap, ſlightly glutinous, which grows black in the air, and dies the hands a deep black that can ſcarcely be waſhed out. Native of Domingo and Jamaica, flowering in december, january and february[b].

The fruit is eatable, but not inviting; and the wood is hard, of a fine grain, and reddiſh colour[c].

Introduced 1778, by Mr. William Forſyth[d].

2. It is very like the foregoing ſpecies. Leaflets from ſix to ten, oblong, acuminate, ſpiny-toothed, veined at the back, and ſubtomentoſe. Juice milky, glutinous, turning very black; not to be waſhed from the ſkin or cloth. If the tree be ever ſo ſlightly wounded, it has a ſtrong ſmell of dung. The natives have a notion that it is dangerous to ſleep under it. Native of Cuba[e].

3. Leaves pinnate, with twenty-one leaflets, which are ſeſſile, rigid, ovate, acuminate, angular in the middle on both ſides, with a toothlet. Flowers racemed[f].

Native of the Weſt-Indies, as Antigua, &c.]

PROPAGATION AND CULTURE.

Theſe plants are propagated by ſeeds, when they can be obtained from the places of their growth, which ſhould be ſown in pots, and plunged into a hot-bed; the plants, when fit to remove, ſhould be each planted in a ſmall pot, and plunged into a tan-bed, and in the autumn ſhould be plunged into the bark-bed in the ſtove, and treated as other tender plants.

Composts. See *Manures.*

[**COMPTONIA.** (*So named by Dr. Solander in honour of the right reverend Henry Compton, Lord Biſhop of London, who cultivated many curious exotic trees in his garden at Fulham.*)

L'Herit. ſtirp. nov. ined. Linn. gen. Schreb. n. 1764. *p.* 811. *Gærtn. t.* 90.

Claſſ. 21. 3. Monoecia Triandria.

GENERIC CHARACTER.

* *Male flowers.*

Cal. *Ament* cylindric, looſely imbricate all round with concave, kidney-form, acuminate, caducous, one-flowered ſcales.

Perianth two-leaved: *leaflets* equal, boat-ſhaped, ſhorter than the ſcale of the ament.

Cor. none.

Stam. *Filaments* three, ſhorter than the calyx, forked: *Anthers* ſix, two-valved.

* *Female flowers.*

Cal. *Ament* ovate, cloſely imbricate all round with one-flowered ſcales, as in the male.

Perianth ſix-leaved: *leaflets* oppoſite in pairs, filiform, membranaceous at the baſe, many times longer than the ſcale of the ament.

Cor. none.

Pist. *Germ* roundiſh. *Styles* two, capillary.

Per. none.

Seed. *Nut* oval, one-celled, valveleſs.

ESSENTIAL CHARACTER.

Male. Ament. *Cal.* two-leaved. *Cor.* none. *Anthers* two-parted.

Fem. Ament. *Cal.* ſix-leaved. *Cor.* none. *Styles* two. *Nut* ovate.

SPECIES.

1. Comptonia aſplenifolia. *Fern-leaved Comptonia.*
   Ait. hort. kew. 3. 334. *L'Herit. ſtirp. nov. ined. Gærtn. fruct.* 2. 58.
   Liquidambar aſplenifolium. *Lin. ſpec.* 1418. *Duham. arb.* 1. 366.
   L. peregrinum. *Lin. ſyſt.* 860. *Reich.* 4. 171.]
   Myrica. *Linn. hort. cliff.* 456. 4. *Gron. virg.* 155. 2. *Cold. noveb.* 224.—aſplenifolia. *Mill. dict. n.* 4.
   Gale mariana, aſplenii folio. *Pet. muſ.* 773.
   Myrti brabanticæ affinis, &c. *Pluk. phyt. t.* 100. *f.* 6, 7.

DESCRIPTION, &c.

This riſes with ſlender ſhrubby ſtalks, near three feet high; they are hairy, and divide into ſeveral ſlender branches. Leaves from three to four inches long, and half an inch broad, alternately indented (or ſinuated) almoſt to the midrib, and have a great reſemblance to thoſe of Spleenwort; they are of a dark green, hairy on their under ſide, and ſit cloſe to the ſtalks. The aments of male flowers come out on the ſide of the branches between the leaves; they are oval, and ſtand erect. [The fruit is a bony nut, elliptic, turgidly lenticular, naked, ſmooth, ſhining, obſcurely ſtriated, bay-coloured, the ſize of a haſel nut. Incloſed is a ſingle, ovate-globular, ſmooth, pale ſeed[g].

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[a] Linn. ſuppl.

[b] Jacquin.

[c] Browne.

[d] Hort. kew.

[e] Jacquin.

[f] Linn. ſpec.

Native of North America; as in the county of Lancaſter, and on the banks of Northampton river among the firs[h]. It flowers here from march to may. Cultivated in 1714, by the Dutcheſs of Beaufort[i].] Mr. Miller ſays, that many of the plants have been brought to England from Philadelphia.

PROPAGATION AND CULTURE.

Planted here on a looſe moiſt ſoil it thrives very well, ſometimes creeping at the roots, and ſending up ſuckers plentifully, as in its native country. By theſe ſuckers it may be propagated. It will endure our cold very well.

[CONFERVA. *River-weed.*
Lin. gen. n. 1207. *Reich.* 1323. *Schreb.* 1672.
Dill. muſc. 11.
Claſſ. 24. 3. Cryptogamia.—Algæ.

GENERIC CHARACTER.

Simple uniform hair-like thread-ſhaped fibres.
Obſ. theſe fibres are either continuous or jointed.

ESSENTIAL CHARACTER.

Unequal tubercles, in very long capillary filaments.

Twenty-one ſpecies are recited in Linneus's ſyſtem of vegetables, edit. Murr. Theſe are all inhabitants of the water, ſome in freſh, but more in ſalt water.

Withering has forty-nine ſpecies, natives of England, in his third volume of the botanical arrangement of Britiſh plants, publiſhed in 1792. Moſt of them are figured by Dillenius; ſome by Micheli, Moriſon, Petiver, Ellis, in Flora Danica, &c.

A ſingular inſtance of irritability has been obſerved by Major Velley in the *Conferva corallina*, upon its being immerſed when quite freſh, into freſh water. After it had been in the water a few minutes, ſeveral fibres were obſerved to move in an horizontal direction with a quick convulſive twitch, and then to ſtop ſuddenly: this they continued to do for ſome length of time; and the ſame effect may be produced ſeveral times, provided the plant be freſh. The experiment does not ſucceed in ſalt water.]

CONIUM. (Κωνειον *of Theophraſtus and Dioſcorides. From* κονια, *duſt, according to Linneus; but that cannot be right. Why is it not rather from* κωναω, *circumago, on account of its inebriating poiſonous quality.*)
Lin. gen. n. 336. *Reich.* 367. *Schreb.* 469.
Cicuta. Tourn. 160. *Gærtn.* 22. *Juſſ.* 223.
Claſſ. 5. 2. Pentandria Monogynia.
Nat. order of *Umbellatæ*, or *Umbelliferæ*.

GENERIC CHARACTER.

CAL. *Umbel* univerſal, with many ſpreading rays.
Partial ſimilar.
Involucre univerſal many-leaved, very ſhort, unequal; *Partial* halved, three-leaved.
Perianth proper, ſcarcely obſervable.
COR. *Univerſal*, uniform.
Proper of five petals, inflex heart-ſhaped, unequal.
STAM. *Filaments* five, ſimple; *Anthers* roundiſh.
PIST. *Germ* inferior. *Styles* two, reflex. *Stigmas* obtuſe.
PER. none. *Fruit* nearly globoſe, five-ſtreaked, the ſtreaks notched, bipartile.
SEEDS two, convex on one ſide, almoſt hemiſpherical, ſtriated; flat on the other ſide.

ESSENTIAL CHARACTER.

Partial involucre halved, three-leaved. *Fruit* nearly globular, five-ſtreaked, notched on each ſide.

SPECIES:

1. Conium maculatum. *Common Hemlock.*
Lin. ſpec. 349. *Reich.* 672. *hort. cliff.* 92. *fl. ſuec. n.* 238. *Hudſ. angl.* 115. *With.* 277. *Curt. lond.* 1. 17. *Lightf.* 157. *Relh. cant. n.* 217. *Scop. carn. n.* 340. *Jacqu. auſtr.* 2. *t.* 156. *Leers herborn. n.* 198. *Pollich pal. n.* 275. *Allion. pedem. n.* 1325. *Villars dauph.* 2. 595. *Storck monogr. fig. Woodv. med. bot.* 62. *t.* 22. *Plenck, ic. t.* 183.
Cicuta. *Hall. helv. n.* 766. *Riv. pent. t.* 75. *Blackw. t.* 451. *Lob. ic.* 1. 732. 1. *Fuchſ.* 406. *Dod. pempt.* 461. *Ger.* 903. 1. *emac.* 1061. *Bauh. hiſt.* 3. 6. 175. 3. *Raii hiſt.* 451.
C. domeſtica. *Mor. umb.* 18. *c. b. ſ.* 9. *t.* 6. *f.* 1. *row* 3.
C. maculata. *Gærtn. fruct.* 100. *t.* 22.
C. major. *Bauh. pin.* 160.—vulgaris. *Cluſ. hiſt.* 2. 200. *Park. theat.* 933. 1.
β. Con. tenuifolium. *Mill. dict. n.* 2. Cic. major. fol. tenuioribus. *Bauh. pin.* 160.
Seeds ſtriated.

[2. Conium rigens. *Fine-leaved Hemlock.*
Lin. ſyſt. 278. *Reich.* 672. *mant.* 352. 512.
Seeds ſomewhat muricated; peduncles grooved; leaflets channelled, obtuſe.]

3. Conium africanum. *Rue-leaved Hemlock.*
Lin. ſpec. 350. *ſyſt.* 278. *Reich.* 672. *mant.* 352. *hort. cliff.* 92. *Jacqu. hort.* 2. 91. *t.* 194.
Caucalis africana, fol. minore Rutæ. *Boerh. lugdb.* 63. *fig.*
Seeds muricated; petioles and peduncles gloſſy.

[4. Conium Royeni.
Lin. ſpec. 350. *ſyſt.* 278. *Reich.* 673.
Caucalis orientalis, &c. *Buxb. cent.* 3. 16. *t.* 28.
Seeds radiate-ſpiny.

5. Conium tenuifolium.
Vahl ſymb. 3. 49.
Root and ſtem-leaves ſimple, linear.

DESCRIPTIONS, &c.

1. Root biennial, reſembling that of a ſmall Parſnep. Stem from four to ſix feet in height and upwards, hollow, round, ſhining, ſmooth, covered with a blueiſh powder, which eaſily wipes off, ſpotted and ſtreaked with livid purple, towards the top branched and ſtriated. Bottom leaves very large, even two feet in length, of a dark green colour, but paler underneath, ſhining, ſuper-decompound, or ſeveral times pinnate: pinnules oblong, gaſhed and ſerrate: petiole ſpotted, ſmooth, fiſtulous, ſucculent, round, being ſcarcely flatted at top: ſheath grooved. Rays of the umbel ten to twelve; of the umbellule fifteen or ſixteen. Univerſal involucre of three or five leaflets (ſometimes ſeven), lanceolate, turned back and whitiſh at the edges: partial of three (or four) leaflets, on one ſide only, ſpreading outwards. Calyx entire. Corolla white; outer petals largeſt. Fruit ovate, gibbous, with compreſſed ribs, waved before it is ripe, but becoming almoſt ſtraight. Seeds browniſh, reſembling thoſe of Aniſeed, with five notched elevated ridges, three on the back, and two on the ſide.

Hemlock is obviouſly diſtinguiſhed by its large and ſpotted ſtalk; by the dark and ſhining green colour of its bottom leaves, and particularly by their diſagreeable ſmell when bruiſed[a].

It is frequent by road and hedge ſides, in cultivated ground, among rubbiſh, and on dunghills. Flowering in june and july.

According to Linneus, ſheep eat the leaves. Horſes, cows and goats refuſe them. Ray informs us, that the thruſh will feed upon the ſeeds, even when corn is to be had. Mr. Curtis remarks, that it appears to be eaten by very few or no inſects. The dried fiſtulous ſtalks of this and ſeveral other umbellate plants, are called by the country people *Kexes* or *Keckſies*. Gerarde applies the name to this ſpecies.

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[g] Gærtner.
[h] Clayton in Gron. virg.
[i] Hort. kew.

[a] Curtis, Withering, Leers, Gærtner.

This plant which was ſtigmatiſed as one of the moſt noxious of vegetable poiſons, has of late years been conſidered as a highly uſeful and powerful article of the Materia Medica; and it has been proved by indiſputable experiments that though highly deleterious when imprudently uſed, yet in ſmall doſes it has been productive of conſiderable benefit in caſes which have reſiſted the uſual methods. It has been particularly celebrated in cancerous caſes.

The firſt phyſician who endeavoured to bring Hemlock into repute as a medicine was Baron Stoerck of Vienna, who announced its extraordinary effects in the year 1760. To enumerate all the diſeaſes in which he ſets forth its powerful effects, would be to give a catalogue of moſt of the chronic diſorders that affect mankind. To eſtimate with preciſion however the virtues of Hemlock ſeems no eaſy taſk: had Dr. Stoerck's publication contained fewer and leſs extraordinary inſtances of ſucceſs, its virtues might have been held in higher eſteem than they at preſent are; while thoſe authors who have condemned it as entirely uſeleſs and highly dangerous ſeem to have done it equal injuſtice: for though in our own country we cannot adduce inſtances, like thoſe mentioned by Dr. Stoerck, of its curing inveterate cancers, ulcers, *&c.* we have ſtill the teſtimonies of eminent practitioners in favour of its good effects in ſome caſes which had reſiſted the uſual applications, and that even ſome caſes, which if not really cancerous, were at leaſt ſuſpected to be of a cancerous tendency, were greatly benefited by it. In chronic rheumatiſms, alſo, and in ſome glandular ſwellings, as well as in various periodical pains, the Hemlock is frequently employed. Externally the leaves have been applied with advantage to ulcers, indurated tumours, *&c. &c.*

Much has been ſaid reſpecting the variable nature of the plant; the time of collecting and preparing it, *&c.* according to which its efficacy muſt undoubtedly be greater or leſs. The principal point however ſhould ſeem to be the due regulation of the doſe, which requires the conduct of a ſkilful practitioner, beginning with a few grains perhaps of the extract or powder, and gradually increaſing it till a ſlight tendency to vertigo or other ſymptoms manifeſt the full ſufficiency of the quantity. The extract from the ſeeds is ſaid to produce giddineſs ſooner than that from the leaves.

According to Dr. Withering, the powder of the dried leaves ſeems to act with more certainty than the extract. He recommends the following method.

Let the leaves be gathered about the end of june when the plant is in flower. Pick off the little leaves and throw away the ſtalks. Dry the abovementioned little leaves in a hot ſunſhine, or in a tin dripping-pan or other convenient veſſel before the fire. Preſerve them in bags of ſtrong brown paper, or powder them and keep them in glaſs phials, and put them in a drawer or any place where the light does not come; for it is obſerved that the light has the power not only of taking away their fine green colour, but alſo their virtue. From fifteen to twenty grains of this powder may be taken twice or thrice a day. It is found to be particularly ſerviceable in chronic rheumatiſms.

Dr. Stoerk's method of making the Extract of Hemlock (extractum cicutæ of the ſhops) is to take the freſh juice of the leaves, and inſpiſſate it gently over the fire, till it has acquired the conſiſtence of a thick extract: this is to be mixed with ſo much of the powdered leaves as will be ſufficient for making the maſs into pills.]

β. This variety, which Mr. Miller would have to be a diſtinct ſpecies, differs according to him, in having taller ſtalks not ſo much ſpotted as our common ſort. The leaves are alſo much narrower, and of a paler green. It is a native of Germany, whence the ſeeds were ſent to Mr. Miller, who cultivated the plant in the botanic garden at Chelſea above twenty years without its varying.

[2. Stem ſhrubby, ſhort, ſtiff; branches longer, ſpreading very much, remote. Leaves bipinnate, doubled, obtuſe, crenulate, hard, the colour of Rue. Umbel rigid, ſhort, crowded. Involucre five-leaved, ſhorter than the umbellules, with one or two foliaceous, divided leaflets. Partial involucres ſeven-leaved, with few crenate leaflets. All the flowers fertile, white; petals lanceolate, involute, equal. Styles white, filiform.—Native of the Cape of Good Hope, on the coaſt[b].

Introduced 1787, by Mr. Fr. Maſſon. It flowers in june[c].

3. Leaflets flattiſh, not channelled, ſmelling like Smallage or Celeri. Peduncles oppoſite to the leaves, not furrowed as in the foregoing. Many of the flowers barren. The central fruit ſeſſile[d]. Seeds longer than in the common ſort. Annual.—Native of the Cape of Good Hope.

Cultivated 1759, by Mr. Miller[e], who received the ſeeds from the famous Boerhaave.

4. David van Royen received this from Egypt. Monſ. Lamarck regards it rather as a ſpecies of Caucalis.

5. Stem herbaceous, upright, a foot high, ſcarcely branched, ſlender, round, ſmooth, ſlightly ſtreaked. Leaves very narrow, a little wider at the baſe and ſomewhat ſheathing, very ſmooth; the lower ones four inches long or a little more; ſtem-leaves remote. Peduncles lateral and terminating, few, remote. Involucre five-leaved; leaflets ſubulate, ſomewhat rigid, ſhorter than the umbel. Involucels the length of the umbellule. Umbel ſmall, five-rayed. About eight or ten flowers in the umbellule. Seeds oblong, ſtriated, ſmall, ſmooth. Styles permanent, divaricating.—Native of the Cape of Good Hope[f].

PROPAGATION AND CULTURE.

1. Common Hemlock growing wild in moſt parts of England, is ſeldom allowed a place in gardens; it may however eaſily be propagated from ſeeds; and if theſe be permitted to ſcatter, plants will come up plentifully, and only require to be thinned for medical uſe.]

2, 3. The ſeeds of the Cape ſorts ſhould be ſown in pots in autumn ſoon after they are ripe, and placed under a common frame in winter, where they may be expoſed to the open air at all times when the weather is mild, and only covered in bad weather. The plants will come up early in the ſpring, and muſt then be expoſed to the open air conſtantly when the weather will permit, otherwiſe they will draw up very weak. As they do not bear tranſplanting well, they ſhould be thinned to four or five in a pot; and then require only to be kept clean, and to be watered in very dry weather.

[The ſecond ſort may alſo be increaſed by cuttings.

CONNA. See *Caſſia Fiſtula.*]

CONNARUS. (Κοννaρος, *is the name of a tree deſcribed at length in Athenæus.*)

Lin. gen. n. 830. *Reich.* 895. *Schreb.* 1116. *Juſſ.* 369.

Claſſ. 16. 5. Monadelphia Decandria.

Nat. order of *Dumoſæ. Terebintaceæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-parted, erect, tomentoſe, permanent.

COR. *Petals* five, lanceolate, erect, equal.

STAM. *Filaments* ten, ſubulate, erect, connected at the baſe; alternately of the length of the flower, and alternately very ſhort. *Anthers* roundiſh.

PIST. *Germ* roundiſh. *Style* cylindric. *Stigma* obtuſe.

PER. *Capſule* oblong, gibbous, one-celled, two-valved.

SEED ſingle, ovate, large.

ESSENTIAL CHARACTER.

Style one: *ſtigma* ſimple. *Capſ.* two-valved, one-celled, one-ſeeded.

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[b] Linn. mant.

[c] Hort. kew.

[d] Linn. ſyſt. and mant.

[e] Hort. kew.

[f] Vahl.

SPECIES.

1. Connarus monocarpos. *Ceylon Sumach.*
Lin. ſpec. 944. *Reich.* 3. 306. *fl. zeyl. n.* 248.
Rhus zeylanicus, &c. *Burm. zeyl.* 199. *t.* 89.
Phaſeolus arboreſcens zeyl. monocarpos. *Raii ſuppl.* 438.

[2. Connarus africanus.
Vahl. ſymb. 3. 86. *Lamarck encycl.* 2. 95. *Cavan. diſſ.* 7. *t.* 221.
Leaves ternate lanceolate-elliptic, veins protuberant underneath.

3. Connarus Santaloides.
Vahl. ſymb. 3. 87.
Santaloides. *Linn. zeyl. n.* 408.
Leaves pinnate, leaflets ovate-acuminate, peduncles axillary aggregate, flowers racemed.

4. Connarus mimuſoides.
Vahl. ſymb. 3. 87.
Leaves pinnate, with about ten pairs of oval-oblong emarginate leaflets, racemes axillary.]

DESCRIPTIONS, *&c.*

1. It riſes with a woody ſtalk eight or ten feet high, hard, rigid, covered with a blackiſh bark, dividing at top into two or three branches. Leaves alternate, trifoliate, on long petioles: leaflets ovate, ſmooth, entire, thick, each on ſhort petiolules, and remaining green the whole year. Flowers in large upright racemes at the ends of the branches: they are ſmall, hairy, of a greeniſh yellow colour, and rarely produce ſeeds in Europe.

Native of the iſland of Ceylon. [Cultivated by Mr. Miller in 1768.

2. Branches round ſmooth. Leaves petioled, alternate: leaflets petioled, quite entire, ending in a long point, very ſmooth, the upper ſurface even, the nerves and veins, which are tranſverſe abundant and almoſt ſimple, being immerſed, but underneath they are protuberant. Partial petioles wrinkled, thickened next the leaflet, the middle one longer than the other two. Flowers in a terminating ſpreading panicle.

Native of the mountains of Sierra Leone.

3. Branches round, ſmooth, with a purpliſh brown bark. Leaves petioled, ſcattered, remote, unequally pinnate, with from two to four pairs of leaflets, which are almoſt oppoſite, ſometimes an inch and half long, equal, quite entire, ending in a blunt point, very ſmooth, netted-veined on both ſides, with the veins a little protuberant, the upper ſurface ſhining. Partial petioles very ſhort, channelled above. Peduncles axillary (four to ſix), half the length of the leaf, ſmooth; partial ones ſcattered, having towards the top three or four pedicelled flowers. Calyx ovate, the five ſegments lanceolate, acute; when in fruit bell-ſhaped. Petals twice as long as the calyx. Filaments unequal, the length of the corolla, ſcarcely united at the baſe. Capſule ſmooth.

Native of the Eaſt Indies.

4. Branches round, villoſe towards the top. Leaves towards the ends of the branches, petioled, alternate, approximating, unequally pinnate, with from nine to eleven pairs of leaflets, which are on very ſhort petioles, oppoſite or alternate, the inner ones ſmaller, ſmooth, very finely veined on the upper ſurface, blunt, deeply emarginate, paler underneath. Petioles very ſlightly villoſe. Peduncles axillary, uſually three together, the length of the leaves, ſlightly hoary. Pedicels ſcattered, filiform, the loweſt commonly two-flowered at the end. The flowers are ſmall, and there is a minute bracte at the baſe of each pedicel. The parts of the flower as in the foregoing ſpecies.

Native of the iſlands of Nicobar[*].]

PROPAGATION AND CULTURE.

1. This plant is uſually propagated in the gardens by laying down the young branches, which, if tongued, (in the manner practiſed for Carnations) and duly watered, will put out roots in twelve months, when they may be cut off from the old plants, and each planted in a ſeparate ſmall pot, filled with freſh light earth, plunging them into a moderate hot-bed, to forward their taking new root, obſerving to ſhade them from the ſun every day, and to water them as they may require it; after this the plants ſhould be treated in the ſame way as other exotic plants which are not too tender, placing them in a dry ſtove in winter, and for about three months in the ſummer they may be removed into the open air, in a warm ſheltered ſituation.

The cuttings of this plant will ſometimes take root, if they are planted in pots, plunged into a moderate hot-bed of tanners bark, and cloſely covered with hand-glaſſes, or ſmall bell-glaſſes; but unleſs they are carefully managed they ſeldom ſucceed.

If freſh ſeeds can be procured from abroad, they ſhould be ſown in ſmall pots, plunged into a moderate hot-bed, and when the plants are fit to remove they ſhould be ſeparated, planting each into a ſeparate pot, and plunged into a moderate hot-bed, treating them in the ſame manner as the layers.

CONOBEA. See *Conopea.*

CONOCARPODENDRON. See *Protea.*

CONOCARPUS. (From κῶνος and καρπός, *Cone-fruited.*)
Lin. gen. n. 236. *Reich.* 253. *Schreb.* 321. *Gærtn. t.* 177. *Juſſ.* 77. *Jacqu. amer.* 78. *Rudbeckia Houſt.* A. A.
Claſſ. 5. 1. Pentandria Monogynia.
Nat. order of *Aggregatæ. Elæagni* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, ſuperior, very ſmall, five-parted, acute, erect: *diviſions* ſubulate.
COR. *Petals* five, converging, or none.
STAM. *Filaments* either five or ten, ſubulate, erect. *Anthers* globoſe.
PIST. *Germ* large, compreſſed, obtuſe, inferior. *Style* ſingle, ſhort. *Stigma* obtuſe.
PER. none diſtinct from the ſeed.
SEED ſingle, obovate; with a membranaceous, thick *margin,* projecting on each ſide.
OBS. *Many germs are collected in an imbricate form into a globoſe cone, and reſemble reflex ſcales.*
C. erecta *is pentandrous, and apetalous.* Jacqu.
C. racemoſa *is decandrous and pentapetalous.* Jacqu.

ESSENTIAL CHARACTER.

Pet. five or none. *Cal.* bell-form. *Seeds* naked, ſolitary, inferior. *Flowers* aggregate (*except in* C. racemoſa.)

SPECIES.

1. Conocarpus erecta. *Jamaica Button-tree.*
Lin. ſpec. 250. *ſyſt.* 217. *Reich.* 486. *hort. cliff.* 485. *Gærtn. fruct.* 2. 470. *Jacqu. amer.* 78. *t.* 52. *f.* 1. *pict.* 42. *t.* 78. *Cateſb. car.* 2. *t.* 33. *Brown. jam.* 159. 2. *Plum. ic. t.* 144. *f.* 2. *Macgr. braſ. l.* 2. *c.* 13. *p.* 76.
Alnus. *Pluk. phyt. t.* 240. *f.* 3. *Sloan. jam.* 2. 18. *n.* 3. *t.* 161. *f.* 2. *Raii dendr.* 11. *n.* 7.
Rudbeckia laurifolia maritima. *Amm. herb.* 581.
Erect: leaves lanceolate.

2. Conocarpus procumbens.
Lin. ſpec. 251. 3. *ſyſt.* 217. *Reich.* 487. *Jacqu. amer.* 79. *t.* 52. *f.* 2. *pict.* 42. *t.* 260. *f.* 22.
Rudbeckia ſupina, fol. ſubrotundis. *Amm. herb.* 581.—maritima procumbens rotundifolia. *Houſt. mſs.*
Procumbent: leaves obovate.

[3. Conocarpus racemoſa.
Lin. ſpec. 251. *ſyſt.* 217. *Reich.* 487. *Lin. ſuppl.* 146. *Jacqu. amer.* 80. *t.* 53. *pict.* 42. *t.* 79. *Brown. jam.* 159. *n.* 1.
Mangle. *Sloan. jam.* 2. 66. *n.* 52. *t.* 187. *f.* 1. *Raii dendr.* 115.
Leaves lanceolate-ovate bluntiſh; fruits ſegregate.

DESCRIPTIONS, *&c.*

1. This is an upright, branching tree, frequently exceeding thirty feet in height. The younger branches are angular. Leaves acute, quite entire, greaſy to the touch, alternate, on very ſhort broad petioles, numerous. Racemes ſimple, lax, often leafy, terminating and axillary; the peduncles bear-

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[*] Vahl.

ing a receptacle, which collects the germs into a roundiſh head. The flowers are ſmall, and of a yellowiſh colour: in the iſland of Martinico they have ten ſtamens, twice as long as the calyx; in other places they have five ſtamens only, not longer than the calyx; but the ſtyle is twice as long. Perhaps this may be a different ſpecies. The head of flowers is globular, but of fruits rather ovate[b].—Native of the Weſt Indies, and all the coaſts of America between the tropics in great plenty, near the ſea and in ſalt water. For burning it is eſteemed the beſt wood in thoſe latitudes, but being ſmall it is of little other uſe. The Engliſh call it Button-tree and Button-wood; the Spaniards Mangle Saragoza.

2. This is a very branching ſhrub, almoſt the whole of it procumbent. Leaves obovate, but ſometimes approaching a little to a roundiſh form, blunt with a point, ſhining, quite entire, alternate, petioled, an inch or an inch and half in length, with an oblong gland on the edge next the baſe on both ſides. Flowers with five (ſometimes ſix) ſtamens, in other reſpects like the foregoing, only ſmaller in all their parts.

Native of Cuba, on rocks near the coaſt.

This may perhaps be only a variety of the foregoing. The farther it is removed from the coaſt, the more the leaves approach in their form to thoſe of *C. erecta*, and the more upright ſome of the branches become[c].]

Mr. Miller ſays, it has ſhort crooked branches, covered with a grayiſh bark, and having thick leaves on their upper parts, a little larger than thoſe of the dwarf Box, on ſhort petioles and placed on every ſide without order. The flowers are in ſmall round heads, coming out ſingly from the ſide of the branches, and in looſe ſpikes at the end; they are ſmall and of an herbaceous colour; the ſcales are rough, and the cones are of a looſer texture than thoſe of the former ſort. It was diſcovered by Dr. Houſtoun growing plentifully in the marſhy grounds near the ſea, at the Havanna, whence he ſent the ſeeds to England in 1730.

[3. This is a lofty and branching tree, ſometimes dividing into three or four trunks cloſe to the ground. The younger branches are ſhining, red and oppoſite. Leaves quite entire, ſhining, thickiſh, greaſy to the touch, deep green, oppoſite, three inches long, on a red petiole with two glands at the top of it. Racemes ſimple, terminating, commonly by threes: or, as is frequently the caſe in dwarf ſhrubs, compoſed of three oppoſite ones on each ſide, which are either ſimple or trifid, and of one ſimple terminating one in the middle; but in theſe ſhrubs the flowers are much ſmaller, and moſt of them, having little or no germ, are abortive. The flowers are ſmall and ſeſſile, and have a ſlight not unpleaſant ſmell. The petals are whitiſh. Stamens ten, five alternately ſhorter, probably ſometimes overlooked; (hence Browne attributes only five ſtamens to the flower). The ſeed, incloſed within a coriaceous pericarp, is compoſed of two greeniſh ovate lamellæ, wrapped up into a round body, and involved in a very thin membrane. The lamellæ in the baſe of the pericarp become a round obtuſe ſhining body, forming the axis of the ſeed, deſtined to put forth the roots: for when the capſule falls to the ground, it penetrates the crowned apex, and when the fibres take poſſeſſion of the ſoil, it conſtitutes the rudiment of the future trunk: then the lamellæ increaſing in bulk burſt the capſule, and become the radical leaves. Sometimes there are two ſeeds incloſed in the ſame pericarp. From the above deſcription it appears that this tree, although it agrees in many reſpects, yet differs very much from the two former ſpecies.

Native of the Caribbee iſlands and the neighbouring continent, on ſandy and muddy ſhores.

The Spaniards call it *Mangle bobo*, or fooliſh Mangle; the Engliſh *White Mangrove*.

The natives employ the bark for tanning leather: theſe trees ſeem to be otherwiſe of little uſe[d].]

PROPAGATION AND CULTURE.

1, 2. Both theſe ſorts are preſerved in ſome curious gardens for the ſake of variety, but they are plants of no great beauty: they are propagated from ſeeds, which muſt be obtained from the places of their natural growth, for they never produce any good ſeeds in Europe: theſe ſeeds, if they are freſh, will come up very ſoon, if they are ſown upon a good hot-bed; and if the plants are potted, and preſerved in the bark-ſtove, they will make great progreſs; but they are too tender to live in this country, unleſs they are conſtantly kept in the ſtove, and treated in the ſame manner with other exotic plants; obſerving, as they are natives of ſwamps, to ſupply them often with water; but in winter they muſt have it very ſparingly. The plants are Evergreen, caſting off their old leaves when the new come out.

[Conocrambe. See *Theligonum.*

Conophoros. See *Protea.*]

Consolida. See *Ajugo, Bellis, Delphinium, Symphytum.*

Contrajerva. See *Dorſtenia.*

[**CONOPĒA.** (Κωνωπειον, *is a veil or net for keeping off gnats.*)

Lin. gen. Schreb. n. 1042. Conobea. *Aubl. t.* 256. *Juſſ.* 97.

Claſſ. 14. 2. Didynamia Angioſpermia.

Nat. order of *Lyſimachiæ* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, five-cornered, permanent, five-cleft: *ſegments* ſubovate, acuminate, erect.

Cor. one-petalled, ringent: *tube* oblong, gradually widening: *border* two-lipped: *upper lip* erect, emarginate; *lower* trifid, the middle ſegment larger, concave.

Stam. *Filaments* four, two longer, faſtened at bottom to the tube of the corolla. *Anthers* ſagittate.

Pist. *Germ* roundiſh. *Style* filiform, hairy. *Stigma* two-lobed.

Per. *Capſule* roundiſh, one-celled, four-valved.

Seeds very many, ſmall, oblong, ſtriated, fixed to a roundiſh receptacle.

ESSENTIAL CHARACTER.

Cal. five-cleft. *Cor.* ringent, two-lipped, lower lip trifid. *Stigma* two-lobed. *Capſ.* one-celled, four-valved, many-ſeeded.

SPECIES.

1. Conopea aquatica.

Conobea aquatica. *Aubl. guian.* 2. 639. *t.* 257.

DESCRIPTION, &c.

This is a creeping plant, with parcels of ſmall fibrous roots at the joints. It ſpreads over the neighbouring graſs, and on the ſurface of the water, by the ſide of which it naturally grows. The ſtems and branches are ſquare, and each angle is bordered its whole length by a very thin ſharp leaf or wing. Leaves oppoſite, at each joint, claſping, diſtant three quarters of an inch from each other, kidney-form, plaited at the nerves, and waving on the edge. Flowers either ſolitary or in pairs oppoſite from the axil of the leaves, on a ſlender peduncle an inch in length. The calyx has two long narrow pointed leaflets at the baſe. Corolla blue. Capſule marked with four grooves, partly wrapped up in the calyx, opening into four parts to the baſe. Seeds faſtened to a receptacle which riſes up in the centre at the bottom of the capſule.

Native of Guiana, flowering in June[e].

Conservatory. See *Greenhouſe.*]

CONVALLARIA. (*Has its name from growing in vallies.*)

Lin. gen. n. 425. *Reich.* 459. *Schreb.* 575. *Gærtn.* 16. *Juſſ.* 42. Lilium convallium. *Tourn.* 14. *Ray* 73. Polygonatum. *Tourn.* 14. Unifolium. *Dill. gen.* 7. Monophyllum. *Ray* 73.

Claſſ. 6. 1. Hexandria Monogynia.

Nat. order of *Sarmentaceæ. Aſparagi* Juſſ.

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[b] Jacquin.

[c] Ibid.

[d] Jacquin.

[e] Aublet.

GENERIC

GENERIC CHARACTER.

CAL. none.

COR. monopetalous, bell-ſhaped, ſmooth: *border* ſix-cleft, obtuſe, open-reflected.

STAM. *Filaments* ſix, ſubulate, inſerted into the petal, ſhorter than the corolla. *Anthers* oblong, erect.

PIST. *Germ* globoſe. *Style* filiform, longer than the ſtamens. *Stigma* obtuſe, three-cornered.

PER. *Berry* globoſe, three-celled, before maturity ſpotted.

SEEDS ſolitary or in pairs; roundiſh.

OBS. *The unripe ſpotted berry affords a mark common to all.*

α. *When the globoſe-bell-ſhaped corolla is open.* 1.
β. *When the corolla is tubular-bell-ſhaped.* 2, 3, 4.
γ. *When one-third part of the number in the parts of fructification is wanting.* 8.
δ. *When the corolla being open and ſix-parted is very acute.* 5, 6, 7.

ESSENTIAL CHARACTER.

Cor. ſix-cleft. *Berry* ſpotted, three-celled.

SPECIES.

* *Corollas bell-ſhaped.*

1. Convallaria maialis. *Sweet-ſcented Lily of the Valley.*
Lin. ſpec. 451. *Reich.* 2. 73. *fl. lapp. n.* 112. *ſuec. n.* 292. *mat. med.* 95. *hort. cliff.* 124. *Hudſ. angl.* 146. *With.* 353. *Curt. lond.* 5. *t.* 24. *Relh. cant. n.* 266. *Scop. carn. n.* 418. *Pollich pal. n.* 337. *Neck. gallob.* 165. *Villars dauph.* 2. 260. *Krock. ſileſ. n.* 532. *Fl. dan. t.* 854. *Sabb. hort.* 1. *t.* 5. *Berg. phyt. t.* 179. *Black. t.* 70. *Gærtn. fruct.* 59. *t.* 16. *Plenck, ic. t.* 263.
Polygonatum. *Hall. helv. n.* 1241.
P. majale. *Allion. pedem. n.* 478.
Lilium convallium. *Cam. epit.* 618. *Beſl. eyſt. vern.* 9. *t.* 6. *f.* 2, 3. *Ger.* 331. 1, 2. *emac.* 410. 1, 2. *Bauh. hiſt.* 3. 531. *f.* 3. *Raii hiſt.* 667. *ſyn.* 264. *Petiv. brit. t.* 44. *f.* 7. *Dod. pempt.* 205.—album. *Bauh. pin.* 304. *Park. par.* 349. *f.* 351. 1. *Mor. f.* 13. *t.* 4. *f.* 1.
β. C. latifolia. *Mill. dict. n.* 2. *Broad-leaved Lily of the Valley.*
L. C. latifolium. *Bauh. pin.* 304. *prodr.* 136. *Raii hiſt.* 668.
Flowers on a ſcape.

[2. Covallaria japonica. *Graſs-leaved Lily of the Valley.*
Lin. ſyſt. 334. *ſuppl.* 204. *Thunb. jap.* 139.
Scape ancipital, raceme drooping.

3. Convallaria ſpicata. *Spiked Lily of the Valley.*
Lin. ſyſt. 334. *Thunb. jap.* 141.
Scape ſtriated; raceme ſpiked; flowers aggregate.]

** *Corollas funnel-ſhaped.*

4. Convallaria verticillata. *Narrow-leaved Solomon's Seal.*
Lin. ſpec. 451. *Reich.* 2. 73. *fl. lapp. n.* 114. *ſuec. n.* 293. *hort. cliff.* 125. *Sowerby engl. bot. t.* 128. *Scop. carn. n.* 419. *Pollich. pal. n.* 338. *Villars dauph.* 2. 261. *Krock. ſileſ. n.* 533. *Fl. dan. t.* 86. (bad). *Berg. phyt. t.* 183.
Polygonatum. *Hall. helv. n.* 1244.—anguſtis foliis. *Beſl. eyſt. æſt.* 4. *f.* 7. *f.* 8. 2. (good).
P. anguſtifolium non ramoſum. *Bauh. pin.* 303. *Mor.* 13. 4. 14.
P. alterum. *Dod. pempt.* 345.
P. minus. *Lob. obſ.* 468. *Ger.* 756. 6. *emac.* 903. 2. *Raii hiſt.* 666.
β. P. anguſtif. ramoſum. *Bauh. pin.* 304. *Bauh. hiſt.* 3. 531. *f.* 2. *Ger.* 757. 6. *emac.* 905. 5. *Raii hiſt.* 666. *Mor.* 13. 4. 15.
Leaves verticillate.

5. Convallaria Polygonatum. *Single-flowered Solomon's Seal.*
Lin. ſpec. 451. *Reich.* 2. 74. *mat. med.* 95. *fl. ſuec. n.* 294. *hort. cliff.* 124. *Hudſ. angl.* 146. *With.* 354. *Scop. carn. n.* 420. *Pollich pal. n.* 339. *Neck. gallob.* 166. *Krock. ſileſ. n.* 534. *Villars dauph.* 2. 261. *Berg. phyt. t.* 139. *Fl. dan. t.* 377. *Sabb. hort.* 1. *t.* 7. *Blackw.* 251. 2. *Woodv. med. bot.* 123. *t.* 44. *Plenck, ic. t.* 264.
Polygonatum. *Hall. helv. n.* 1242.
P. officinale. *Allion. pedem. n.* 480.
P. fl. odoro. *Cluſ. pann.* 263. 264. *hiſt.* 1. 276. 1.
P. fl. ex ſingularibus pediculis. *Bauh. hiſt.* 3. 529. 2. *Raii hiſt.* 665. *ſyn.* 263. 2.
P. latifolium fl. majore odoro. *Bauh. pin.* 303. *Park. theat.* 696. 3. *f.* 1. *Barrel. ic.* 711. *Mor.* 13. 1. 4. *row.* 3. *Pet. brit. t.* 44. *f.* 6.
P. lat. 2 Cluſii. *Ger.* 756. 1. *emac.* 904. 3.
Leaves alternate ſtem-claſping; ſtem ancipital; peduncles axillary, generally one-flowered.

[6. Convallaria latifolia. *Broad-leaved Solomon's Seal.*
Lin. ſyſt. 334. *Jacqu. auſtr.* 3. *t.* 232.
Polygonatum latifolium. *Dod. pempt.* 346. 1.——Ellebori albi foliis. *Bauh. pin.* 303. *Mor. hiſt. f.* 13. *t.* 1. *f.* 6. *row.* 3.——tertium latiore folio. *Cluſ. hiſt.* 276.
Leaves alternate ſtem-claſping acuminate; ſtem angular; peduncles axillary many-flowered.

7. Convallaria multiflora. *Many-flowered Solomon's Seal.*
Lin. ſpec. 452. *Reich.* 2. 74. *fl. ſuec. n.* 295. *Hudſ. angl.* 147. *With.* 355. *Scop. carn. n.* 421. *Pollich pal. n.* 340. *Neck. gallob.* 165. *Villars dauph.* 2. 262. *Krock. ſileſ. n.* 535. *Mill. fig. t.* 101. *f.* 1. *Fl. dan. t.* 152. *Plenck, ic. t.* 265. *Blackw. t.* 251. *Sabb. hort.* 1. *t.* 6. *Berg. phyt. t.* 89.
Polygonatum. *Hall. helv. n.* 1243. *Dod. pempt.* 345. 1.——1 Cluſii. *Ger.* 756. 3. *emac.* 903. 1. *Bauh. hiſt.* 3. 529. 1. *Raii hiſt.* 664. *ſyn.* 263. 1.
P. vulgare. *Park. theat.* 696. 1. *f.* 2. *Mor.* 13. 1. 1. *row.* 3. *Pet. brit. t.* 44. *f.* 5.
P. latifolium 1. *Cluſ. hiſt.* 1. 275. 2.—maximum. *Bauh. pin.* 303.
β. P. humile anglicum. *Raii ſyn.* 263.
Leaves alternate ſtem-claſping; ſtem round; peduncles axillary many-flowered.

*** *Corollas wheel-ſhaped.*

8. Convallaria racemoſa. *Cluſter-flowered Solomon's Seal.*
Lin. ſpec. 452. *Reich.* 2. 75. *hort. cliff.* 125. *Gron. virg.* 38. 52.
Polygonatum racemoſum. *Corn. canad.* 36. *t.* 37. *Mor. hiſt. f.* 13. *t.* 4. *f.* 9. *Pluk. alm. t.* 311. *f.* 2. *Raii hiſt.* 666. *Park. theat.* 697. *f.* 8.
Leaves ſeſſile; raceme terminating compound.

9. Convallaria ſtellata. *Star-flowered Solomon's Seal.*
Lin. ſpec. 452. *Reich.* 2. 75.
Polygonatum virginianum. *Ger. emac.* 305. 6. *Park. theat.* 697. *f.* 7. *Mor. hiſt.* 3. 537. *f.* 13. *t.* 4. *f.* 7. *Raii hiſt.* 666.
P. ſpicatum fertile. *Corn. canad. t.* 34.
Leaves ſtem-claſping very many.

[10. Convallaria trifolia.
Lin. ſpec. 452. *Reich.* 2. 75. *Gmel. ſib.* 1. 36. *t.* 6.
Phalangium Veratri foliis. *Amm. ruth.* 137.
Leaves ſtem-claſping in threes; racemes terminating ſimple.]

11. Convallaria bifolia. *Leaſt Solomon's Seal,* or *One-blade.*
Lin. ſpec. 452. *ſyſt.* 335. *Reich.* 2. 75. *fl. lapp. n.* 113. *ſuec. n.* 296. *hort. cliff.* 125. *Scop. carn. n.* 422. *Pollich pal. n.* 341. *Neck. gallob.* 164. *Villars dauph.* 2. 263. *Krock. ſileſ. n.* 536. *Mill. fig. t.* 101. *f.* 2. *Fl. dan. t.* 291. *Berg. phyt. t.* 181. *Retz. obſ.* 1. 16.
Maianthemum Convallaria. *Wigg. prim.* 15.
Lilium convallium minus. *Bauh. pin.* 304. *Barrel. ic.* 1212. *Mor.* 13. 4. 7. *row.* 3.
Unifolium. *Hall. helv. n.* 1240. *Bauh. hiſt.* 3. 354. *f.* 1.
Monophyllon. *Ger.* 330. *f.* 2. *emac.* 409. *Park. theat.* 505. *Raii hiſt.* 668.
Gramen parnaſſi. *Camer. epit.* 744.
Leaves cordate; flowers four-ſtamened.

DESCRIPTIONS, &c.

1. [Root perennial, with numerous round fibres tranſverſely wrinkled, creeping horizontally juſt below the ſurface to a conſiderable diſtance. The whole plant is ſmooth. Four or five alternate, oblong, blunt, ſlightly nerved, purpliſh ſcales, ſurround and bind together the baſe of the leaves and

ſtalk. Leaves two, petioled, elliptic or lanceolate, pointed at each end, from four to five inches long, and near an inch and half broad in the middle, quite entire, upright, ſmooth, nerved, one uſually larger, of a bright green colour; petioles claſping, round, the outer dotted with red, and tubular, to receive the inner, which is ſolid. Scape lateral, the length of the leaves, upright, ſmooth, ſemicylindrical. Bracte lanceolate, membranous, white, under each peduncle, and about half its length. Flowers ſix to eight, in a raceme, nodding, white, fragrant. Peduncles bending, one-flowered, round, filiform. Corolla contracted at the mouth. At the baſe of each filament a purple ſpot[a]. Berry red ſuperior, ſphæroid, ſmooth, one or two of the three cells often obliterated; two ſeeds in each cell, but one uſually abortive, almoſt globular, obſcurely angular.

Authors differ extremely reſpecting the number of ſeeds in this fruit.

Native of Europe, from Lapland to Italy, in woods. In Britain, near London on Hampſtead heath, but now ſparingly, ſince the trees have been deſtroyed; in Lord Mansfield's wood near the Spaniard; between Shooter's-hill and Woolwich; Norwood abundantly, where I have frequently ſeen large patches with very few flowers and no berries; Buſhy-heath, Caſhioberry in Hertfordſhire; near Chiſelhurſt in Kent; near Lee in Eſſex; Woburn in Bedfordſhire, whence the markets in London (as Mr. Miller ſays) are generally ſupplied with the flowers. Whichwood foreſt in Oxfordſhire, and in Beechwood, near Stokenchurch. White-wood near Gamlingay in Cambridgeſhire; Norfolk; Buddon and Okely woods in Leiceſterſhire; King's Cliff in Northamptonſhire; Kendal in Weſtmoreland; County of Durham; Ingleborough in Yorkſhire. Scotland.

It flowers in may, whence it is named May-Lily. Gerarde calls it Convall Lillie; and ſays that in ſome places it is called Liriconfancie.

The Lily of the Valley claims our notice both as an ornamental and a medicinal plant. As an ornamental one, few are held in greater eſtimation; indeed few flowers can boaſt ſuch delicacy with ſo much fragrance[b]. When dried they have a narcotic ſcent; and if reduced to powder excite ſneezing. An extract prepared from the flowers, or from the roots, partakes of the bitterneſs, as well as of the purgative properties of Aloes. The doſe is from twenty to thirty grains[c]. A beautiful and durable green colour may be prepared from the leaves, with lime[d].

There are ſeveral varieties of the Lily of the Valley: as one with narrower leaves mentioned to be found in Weſtmoreland by Mr. Lawſon; but upon being removed into Dr. Richardſon's garden, it became in all reſpects like the common ſort[e].] Another with broader leaves, from the Alps, which Mr. Miller ſays retained its difference in the garden, in the ſame ſoil and ſituation with the common ſort, and therefore he has no doubt of its being a diſtinct ſpecies.—A third, with a double variegated flower, ſuppoſed to be only a variety of this, though the flowers are much larger, and beautifully variegated with purple. It came from the royal garden at Paris, and flowered ſeveral years in the Chelſea garden; but the roots do not increaſe ſo much as the common ſort.—A fourth, with reddiſh or red flowers; this Mr. Miller affirms continued the ſame above forty years: the flowers are ſmaller, the ſtalks redder, and the leaves of a darker green than in the common ſort. [Both this, and the white, vary with double flowers.

2. Root-leaves ten or more, linear, drawn to a point at bottom, three-cornered, flat on one ſide, entire, ſtriated, bent back, two feet long and upwards. Scape finely ſtriated, ſmooth, a ſhort ſpan in height, flowering at the end, four-cornered. Flowers ſtanding on one ſide; peduncles aggregate (two to ſix) uſually one-flowered (one to four). Bracte lanceolate, white, ſhorter than the peduncle. Corolla white; diviſions lanceolate, patulous, a line in length. Filaments hardly any: anthers linear, acute, brown. Style the length of the corolla: Berry ovate, obtuſe, ſmooth, blue, the ſize of a pea, one-celled, adorned with the permanent calyx. Seed one, white, filling the whole berry.—There are two varieties, a larger and a ſmaller. They are found near Nagaſaki in Japan. Both there and in China, the tubers of the roots preſerved with ſugar, are uſed in ſome diſorders[f].

Introduced 1784, by Mr. John Græfer[g].

3. Root fibrous. Root-leaves linear, drawn to a point at bottom, bluntiſh, many-ſtriated, ſmooth, longer than the ſcape, which is angular, ſimple, erect, ſmooth, from four inches to a foot in height. Raceme a finger's length, with the flowers ſcatteringly aggregate. Peduncles round, ſpreading, ſmooth, one-flowered, a line in length. Corolla ſix-petalled, almoſt globular, violet; petals ovate. Filaments inſerted into the germ, very ſhort, erect: anthers ovate, twin. Germ with ſix ſtreaks: ſtyle ſhorter than the ſtamens. Fruit obſcure, but ſeems to be a globular berry: in another ſpecimen it appeared to be a three-celled capſule, with two ſeeds in each cell.—Japan, flowering in ſeptember[h].

4. Root perennial, toothed. Stem ſimple, angular, ſtriated, erect, eighteen inches high. Leaves narrower than the reſt, lanceolate, entire, ſmooth, three or four in a whorl, three or four inches long, and from half an inch to an inch in breadth, bright green, glaucous beneath. Peduncles axillary, ſolitary, branched, pendulous, from two to ſix-flowered. Corollas oblong, greeniſh white, ſtriated at the ends, and divided into ſix bluntiſh ſegments, bearded within at the tip; three or four lines in length. Berries violet or deep red. It flowers in june[i], and was cultivated in 1656, by John Tradeſcant, junior[k]. Native of the North of Europe, Germany, Switzerland, Carniola. Ray obſerved it near Spa, and on mount Saleve near Geneva.

It was found by Arthur Bruce, Eſq. july the firſt, 1792, in the Den Rechip, four miles N. E. of Dunkeld in Perthſhire[l].

β. The ſtalk is ſometimes branched. In this ſtate it is deſcribed by Cluſius and others as a diſtinct ſpecies.]

5. Root twiſted and full of knots, on a tranſverſe ſection of it characters appear that give it the reſemblance of a ſeal, whence its name of Solomon's Seal.

[Stem from a ſpan to near a foot in height, of a harder texture than the *multiflora*: ſimple, inclined, angular, twiſted, ſometimes three-edged, four inches long and one broad, oval-lanceolate, half embracing the ſtem, glaucous underneath, frequently bending down on one ſide. Flowers ſweet-ſcented generally ſolitary, but ſometimes two, on long axillary peduncles, much larger than in the *multiflora*; (eight lines long, and more than two lines broad) white, with a green line running down each ſegment: ſegments rather inflexed. Berries black.—Diſtinguiſhed from the *multiflora*, by the ſtem being angular, firm, lower, from a foot to near eighteen inches; leaves firmer, ſhorter, ſcarcely ſtem-claſping; the flowers uſually ſolitary, larger though on a ſmaller plant, hardly reflexed, the three outer ſegments larger. Fruit round, black, containing ſix ſeeds, at leaſt that ſeems to be the natural number[m].

Native of the north of Europe, Holland, Germany, Hungary, Switzerland, Carniola, Piedmont. In England, in fiſſures of rocks near Wherf, Settle, and Skipton; Syke's wood near Ingleton, Yorkſhire. Alſo in Virginia.

This varies with a double flower.

β. The variety with leaves like white Hellebore, and a purpliſh ſtalk, was found in woods on the north ſide of Mendip hills by Mr. Bobart.

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[a] Curtis, Lyons, Woodw. mſs. [b] Curtis. [c] Withering. [d] Haller. [e] Ray's ſyn.

[f] Thunberg. [g] Hort. kew. [h] Thunberg. [i] Krocker, Pollich, Haller. [k] Hort. kew. [l] Engl. Botany. [m] Haller, Linn. ſuec. Pollich, Villars, With. Woodw. mſs.

6. This agrees with C. Polygonatum and multiflora in root and habit, but the root is rather more ſlender, has at firſt a ſweet and then an acrid taſte, and is glutinous. Stem from half a foot to two feet in height, round at bottom and thence angular the whole length, the angles being more remarkable below the middle of the back of the leaf; it has a ſhort pile of hairs towards the top. Leaves ovate narrowing into a point, ſeſſile, many-nerved, with hairs on the nerves underneath, viſible only with a magnifier; quite entire, ſhining on both, eſpecially the upper ſurface, paler green on the lower, but not at all hoary. Peduncles ſomewhat hirſute, ſuſtaining one, two, and three flowers on the ſame plant, and on large plants four at bottom, each on its proper pedicel, pendulous and ſweet-ſcented. Corolla three times as large as in C. multiflora, tubular, white with obſcure lines more of a yellowiſh green, the border greeniſh, patulous, obtuſe, not funnel-ſhaped. Stamens inſerted below the middle of the tube. Style riſing above the origin of the border. Berry globular, very dark blue, three-celled, with three or four, ſometimes five ſeeds in each cell. Native of Auſtria [n].

7. Stem round, from eighteen inches to two or three feet high, erect, unbranched. Leaves uſually bent upwards and to one ſide, underneath glaucous, five inches long and two broad; the lower ones oval, the upper oval-lanceolate, half embracing the ſtem. Flowers ſeveral together (from two or three to ſeven or eight), axillary, on branched compreſſed peduncles: they are ſeven lines long and three in diameter, ſlightly five-cornered; the ſegments ovate, obtuſe, ſomewhat reflex. Filaments hirſute. Berries round, of a blackiſh blue colour, varying to purple and red, and containing three or four ſeeds.

It is a larger plant than the fifth ſort. The ſtem is leſs furrowed; the leaves are larger; the flowers ſeveral together, ſmaller with the ſegments more pointed, the colour white tipped with green, the tube longer and narrower, on ſhorter and more ſlender peduncles [o].

Native of the north of Europe, Germany, Switzerland, Carniola. England, at Newberry and other places in Berkſhire, Bramdean in Hampſhire, Roehill in Kent, High Wycomb in Bucks, Gorleſtone in Suffolk.

The roots are recommended externally as vulneraries, reſtringents, and diſcutients; internally as incraſſants and mild corroborants. They have little or no ſmell; to the taſte they diſcover a conſiderable ſweetneſs, which is followed by a very ſlight impreſſion of bitteriſhneſs and acrimony. Their virtues do not appear to be very great [p].

According to Haller the berries excite vomiting, and even the leaves a nauſea. The young ſhoots are eaten by the Turks as we do Aſparagus; and the roots both of this and of the fifth ſort have been made into bread in times of ſcarcity.

This varies with a double flower.

β. The dwarf Engliſh Solomon's Seal occurs in the woods of Wiltſhire. Being found there by Mr. Philip More, gardener of Gray's Inn [q].]

8. Stems two feet high, unbranched, with many oblong leaves embracing them at the baſe, reſembling the leaves of Plantain. The flowers are ſmall and white, and are produced in ſingle ſpikes at the top, and are ſucceeded by ſmall red berries, about the ſame ſize as in the firſt ſort, and contain two hard ſhining ſeeds. It flowers the beginning of June, and the berries ripen in autumn. Native of Virginia and Canada.

[Cultivated 1656, by Mr. John Tradeſcant, Junior [r].]

9. Stem upright, about two feet high. Leaves long and narrow in whorls, generally five at each joint; they are four inches long, and half an inch broad, ſmooth, and of a light green. The flowers come out from the ſame joints on ſhort peduncles, each ſupporting five or ſix flowers; ſmall and with ſhort tubes, of a dirty white tipped with green, and ſlightly cut into ſix parts at top. Native of Canada.

[Cultivated 1640, by Mr. John Parkinſon [s].

10. Root creeping, jointed. Stem-leaves two, three, or four, often ovate-oblong, but not ſeldom lanceolate. Flowers five to eight or nine thinly diſpoſed on a ſcape, on peduncles about a third of an inch in length, cloven almoſt to the bottom. Berries round, red, containing two or three large, yellowiſh, compreſſed, roundiſh ſeeds, with a ſmall point at the end.—Native of Siberia, in woods [t].

11. This plant ſeldom grows more than four or five inches high; riſing with a ſingle ſtalk from the root, with one or two heart-ſhaped leaves, which cloſely embrace it. The top of the ſtalk is terminated by a looſe raceme of white flowers, which have ſhort tubes, and ſpread open at the top, where they are divided into four obtuſe ſegments. The fruit is a ſoft berry, incloſing a ſingle hard ſeed [u].

Stem erect, angular, with purple dots. Petioles furrowed underneath, ſmooth, three lines in length. Leaves acuminate, two inches long and one broad. Raceme ovate, obtuſe, above half an inch long, containing as far as ſixteen flowers. Two peduncles, each ſuſtaining one flower, come out together. Bractes very ſmall, toothletted, whitiſh. Berries round, at firſt whitiſh, with red dots, afterwards becoming red: incloſing two or three ſeeds, which are nearly round, obtuſe and ſmooth [x]. One or two of them are frequently abortive.

In the ſpring it produces a ſingle leaf on a long erect petiole; after that a ſecond, and ſometimes a third [y].

As this pretty plant excludes a third part in the diviſions of the corolla and number of the ſtamens, ſo it does alſo in the piſtil; for the ſtigma is ſlightly bifid, and the berry is two-celled [z].

Native of the North of Europe, Holland, Germany, Switzerland, Carniola. Mr. Miller gathered it near Haerlem and the Hague, where Mr. Ray had gathered it before on the 28th of may in flower. Linneus obſerves, that this plant ſo common in Sweden, does not occur in England.

It was cultivated 1739, by Mr. Miller [a].]

PROPAGATION AND CULTURE.

1. The Lily of the Valley requires a looſe ſandy ſoil, and a ſhady ſituation. It is propagated by parting the roots in autumn, placing the ſets a foot aſunder. In a rich ſoil they ſpread and multiply greatly, but are not ſo productive of flowers. The only culture they require, is to keep them clean from weeds, and to tranſplant and ſeparate the roots every third or fourth year: if this be not done the flowers will be ſmall and few in number.

[The Lily of the Valley forces very well, and thus theſe elegant flowers may be enjoyed above two months [b].]

4, *&c.* All the ſorts of Solomon's Seal are very hardy plants. They prefer a light ſoil and a ſhady ſituation, and are therefore very proper for plantations, where if they are not crowded by ſhrubs, they will thrive and multiply exceedingly, making an agreeable variety during the ſummer ſeaſon, the appearance of theſe plants being very ſingular.

They multiply very faſt by their creeping roots, eſpecially in a proper ſoil and ſituation. The beſt time to tranſplant and part the roots is in autumn, ſoon after the ſtalks decay; but it may be ſafely done at any time till they begin to ſhoot in the ſpring. They ſhould have room to ſpread, and muſt not be removed oftener than every third or fourth year. Dig the ground about them every ſpring, and keep them clean from weeds.

11. [As this plant propagates very faſt by its creeping roots, they will ſoon ſpread over a large piece of ground, unleſs they are confined in pots. Where they have room to ſpread the plants ſeldom produce berries: this is the caſe with many other creeping-rooted plants [c].]

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[n] Jacquin. [o] Woodw. mſs. Pollich, Haller, Krocker. [p] Lewis. [q] Ray's ſyn. [r] Hort. kew.

[s] Hort. kew. [t] Gmelin. [u] Mill. fig. [x] Pollich. [y] Haller. [z] Retz. [a] Hort. kew. [b] Curtis. [c] Mill. fig.

CONVOLVŬLUS. (*A convolvendo: becauſe the ſtem of ſome ſpecies rolls round, or twines about other bodies.*)

Lin. gen. n. 215. *Reich.* 231. *Schreb.* 287. *Gærln. t.* 134. *Tourn.* 57. *Juſſ.* 133.

Claſſ. 5. 1. Pentandria Monogynia.

Natural order of *Campanaceæ*, or bell-form flowers. *Convolvuli* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* five-parted, converging, ovate, obtuſe, very ſmall, permanent.

Cor. one-petalled, bell-ſhaped, ſpreading, large, plaited, obſcurely five-lobed.

Stam. *Filaments* five, ſubulate, ſhorter by half than the corolla. *Anthers* ovate, compreſſed.

Pist. *Germ* ſuperior, roundiſh. *Style* filiform, length of the ſtamens. *Stigmas* two, oblong, broadiſh. (Stigma bifid, *G.*)

Per. *Capſule* enwrapped by the calyx, roundiſh, two-celled, one, two, or three-valved (commonly three-celled, ſeldom two or four-celled, *J.* partition alternate with the valves.)

Seeds in pairs, roundiſh, (one or two ſeeds in each cell, ſometimes abortive, *J.* few with a twiſted embryo, *G.*)

Obs. *The corolla is commonly marked with ten notches, but there are inſtances in which it has five clefts. Some ſpecies have a funnel-form corolla.*

ESSENTIAL CHARACTER.

Cor. bell-ſhaped, plaited. *Stigmas* two. *Capſ.* two-celled, with two ſeeds in each cell.

SPECIES.

* *With a twining ſtem.*

1. Convolvulus arvenſis. *Small or Field Bindweed.*

Lin. ſpec. 218. *Reich.* 434. *fl. ſuec. n:* 181. *hort. cliff.* 66. *Hudſ. angl.* 88. *With.* 213. *Curt. lond.* 2. 13. *Relh. cant. n.* 166. *Hall. helv. n.* 664. *Scop. carn. n.* 219. *Pollich pal. n:* 204. *Neck. gallob.* 111. *Leers herborn. n.* 145. *Krock. ſileſ. n.* 307. *Fl. dan. t.* 459. *Plenck, ic. t.* 104. *Fl. ruſt. t.* 89.

C. minor. *Bauh. hiſt.* 2. 157. *Cluſ. hiſt.* 2. 50. *f.* 1.—arvenſis. *Baub. pin.* 294. *Mor.* 1. 3. 9.—min. vulgaris. *Park. theat.* 171. 2. *Raii hiſt.* 725. 7. *ſyn.* 275. 2.—purpureus. *Lob. obſ.* 340. *f.* 2.

Smilax lævis minor. *Dod. purg.* 213. *pempt.* 393. *Ger.* 712. 2. *emac.* 861. 2.

Helxine. *Matth.* 1011. *Dalech.* 1424. *Fuchſ.* 258.

β. C. arv. minimus. *Raii hiſt.* 725. *ſyn.* 276. *Leaſt Bindweed.*

C. min. anguſto auriculato fol. *Bocc. muſ. t.* 33.

γ. C. fl. min. ad unguem fere ſecto. *Raii ſyn.* 276.

Leaves ſagittate ſharp on each ſide, peduncles generally one-flowered: bractes ſubulate, at a diſtance from the flower.

2. Convolvulus ſepium. *Great,* or *Hedge Bindweed.*

Lin. ſpec. 218. *Reich.* 434. *fl. ſuec. n.* 182. *hort. cliff.* 66. *vir. cliff.* 18. *Hudſ. angl.* 88. *With.* 213. *Curt. lond.* 1. 13. *abr. t.* 5. *Relh. cant. n.* 167. *Hall. helv. n.* 663. *Scop. carn. n.* 220. *Pollich pal. n.* 205. *Neck. gallob.* 112. *Leers herborn. n.* 146. *Gmel. ſib.* 4. 96. *n.* 54. *t.* 48. *Allion. pedem. n.* 389. *Krock. ſileſ. n.* 308. *Blackw. t.* 38. *Fl. dan. t.* 458. *Plenck, ic. t.* 91. *Fl. ruſt. t.* 88.

C. major. *Bauh. hiſt.* 2. 154. *Raii hiſt.* 725. 6. *ſyn.* 275. 1.—albus. *Baub. pin.* 294. *Park. theat.* 163. 3. *Mor.* 1. 3. 6.

Smilax lævis. *Fuchſ.* 720.—major. *Dod. purg.* 210. *pempt.* 392. *Dalech.* 1423. *Ger.* 712. 1. *emac.* 861. 1. *Lob. obſ.* 340. *f.* 1.

Leaves ſagittate, truncate behind; peduncles four-cornered, one-flowered: with heart-ſhaped bractes, cloſe to the flower.

3. Convolvulus Scammonia. *Syrian Bindweed,* or *Scammony.*

Lin. ſpec. 218. *Reich.* 435. *mat. med.* 60. *Woodv. med. bot.* 13. *t.* 5. *Mill. fig. t.* 102. *Plenck, ic. t.* 92. *Lour. cochinch.* 106.

C. ſyriacus ſ. Scammonia ſyriaca. *Mor. ſ.* 1. *t.* 3. *f.* 5.

Scammonium. *Bont. jav. l.* 6. *c.* 57. *p.* 154. *Lob. obſ.* 340. *f.* 3.

Scammonia ſyriaca. *Bauh. pin.* 294. *Lob. ic.* 620. 1. *Raii hiſt.* 722. *Bauh. hiſt.* 2. 163. *Ger.* 716. 1. *emac.* 866. 1. *Park. theat.* 163. 1.

Leaves ſagittate, truncate behind; peduncles round, bearing about three flowers.

[4. Convolvulus ſibiricus. *Siberian Bindweed.*

Lin. ſyſt. 200. *Reich.* 435. *mant.* 203.

Leaves cordate, acuminate, even; peduncles one-flowered.

5. Convolvulus farinoſus. *Mealy-ſtalked Bindweed.*

Lin. ſyſt. 200. *Reich.* 435. *mant.* 203. *Jacqu. hort.* 1. *t.* 35.

Leaves cordate, acuminate, repand; peduncles three-flowered; ſtem mealy.

6. Convolvulus Medium. *Arrow-headed Bindweed.*

Lin. ſpec. 218. *Reich.* 436. *Rheed. mal.* 11. 113. *t.* 55. *Lour. cochinch.* 106.

Leaves linear haſtate-acuminate; ears toothed; peduncles one-flowered; calyxes ſagittate.

7. Convolvulus japonicus.

Lin. ſyſt. 200. *Thunb. jap.* 85.

Leaves haſtate lanceolate, the ſide leaves one-toothed; peduncles one-flowered.

8. Convolvulus panduratus. *Virginian Bindweed.*

Lin. ſpec. 219. *Reich.* 436. *Gron. virg.* 141. *Dill. elth.* 101. *t.* 85. *f.* 99. *Lour. cochinch.* 107.

Leaves cordate entire panduriform; calyxes even.

9. Convolvulus carolinus. *Carolina Bindweed.*

Lin. ſpec. 219. *Reich.* 436. *Dill. elth.* 100. *t.* 84. *f.* 98.

Leaves cordate, entire and three-lobed, villoſe; calyxes even; capſules hirſute; peduncles one or two-flowered.

10. Convolvulus hederaceus. *Ivy-leaved Bindweed.*

Lin. ſpec. 219. *Reich.* 436. *hort. cliff.* 67 *Gærtn. fruct.* 2. 247. *Dill. elth.* [99. *t.* 83. *f.* 96.] 97. *t.* 81. *f.* 93.

Leaves cordate, entire and three-lobed; corollas undivided; fruits erect.]

11. Convolvulus Nil. *Blue* or *Azure Bindweed.*

Lin. ſpec. 219. *Reich.* 437. *Curt. magaz. t:* 188.

C. cæruleus. *Ger.* 715. *fig. emac.* 864. *f.* 1.——hederaceo anguloſo folio. *Bauh. pin.* 295. *Bauh. hiſt.* 2. 164. *Dill. elth.* 96. *t.* 80. *f.* 91, 92. *Park. parad.* 358. 2. *t.* 361. *f.* 2. *Mor.* 1. 3. 8.

Leaves cordate three-lobed; corollas half-five-cleft; peduncles ſhorter than the petiole.

12. Convolvulus purpureus. *Purple Bindweed.*

Lin. ſpec. 219. *Reich.* 437. *vir. cliff.* 18. *hort. upſ.* 38. *Gron. virg.* 141. *Curt. magaz.* 113.

C. purp. fol. ſubrotundo. *Bauh. pin.* 295. *Ehret. pict.* 7. *f.* 2. *Ger. emac.* 864. *f.* 2. *Park. parad.* 358. 1. *t.* 361. *f.* 1. *Raii hiſt.* 727. *Mor.* 1. 3. 7.

β. C. indicus. *Mill. dict. n.* 5.

C. major, fol. ſubrotundo, fl. amplo purpureo. *Sloan. jam.* 1. 154. *t.* 98. *f.* 1.

γ. C. cæruleus minor, fol. ſubrotundo. *Dill. elth.* 97. *t.* 82. *f.* 94.

δ. C. fol. cordato glabro. *Dill. elth.* 100. *t.* 84. *f.* 97.

Leaves cordate undivided; fruits drooping; pedicels thickened.

[13. Convolvulus angularis.

Lin. ſyſt. 200. *Reich.* 437. *mant.* 203. *Burm. ind.* 46. *t.* 19. *f.* 2.

Leaves cordate five-cornered quite entire villoſe; peduncles many-flowered.

14. Convolvulus obſcurus. *Hairy Bindweed.*

Lin. ſpec. 220. *Reich.* 437. *Dill. elth.* 98. *t.* 83. *f.* 95. *Lour. cochinch.* 107. *Vahl. ſymb.* 3. 27.

Leaves cordate undivided; ſtem ſomewhat pubeſcent; peduncles thickened one-flowered; calyxes ſmooth.]

15. Convolvulus Batatas. *Tuberous-rooted Bindweed;* or *Spaniſh Potatoes.*

Lin. ſpec. 220. *Reich.* 438. *hort. cliff.* 67. *Cateſb. car. t.* 60. *Mor. ſ.* 1. *t.* 3. *f.* 4. *Raii hiſt.* 728. *Sloan. jam.* 1. 150. 3. *Plenck, ic. t.* 106. *Lour. cochinch.* 107. *Mor.* 1. 3. 4.

Batatas. *Bauh. pin.* 91. *Rumph. amb.* 5. 367. *t.* 130. *Kalm itin.* 2. 300. *Park. par.* 516. *t.* 517. *f.* 2. *Ger.* 780. *emac.* 925. *Cluſ. hiſt.* 2. 78.
Kappa-kelengu. *Rheed. mal.* 7. 95. *t.* 50.
Leaves cordate haſtate five-nerved, ſtem creeping tuber-bearing, hiſpid.

[16. Convolvulus biflorus.
Lin. ſpec. 1668. *Reich.* 438.
Leaves cordate pubeſcent, peduncles in pairs; lobes of the corolla trifid.

17. Convolvulus verticillatus.
Lin. ſpec. 220. *Reich.* 438. *Brown. jam.* 153. 6.
Ipomæa verticillata. *Amæn. acad.* 5. 394.
Quamoclit. *Plum. ic.* 94. *f.* 2.
Leaves cordate oblong, naked; peduncles umbellate bifid many-flowered.

18. Convolvulus umbellatus. *Umbelled Bindweed.*
Lin. ſpec. 221. *Reich.* 439. *Pluk. alm. t.* 167. *f.* 1. *Plum. amer.* 88. *t.* 102. *Sloan. jam.* 1. 154. 10. *Swartz obſ.* 62.
Leaves cordate; peduncles umbellate.

19. Convolvulus malabaricus.
Lin. ſpec. 221. *Reich.* 439. *Lour. cochinch.* 108.
Kattu-kelengu. *Rheed. mal.* 11. 105. *t.* 51. *Raii ſuppl.* 376.
Leaves cordate ſmooth, ſtem perennial villoſe.]

20. Convolvulus canarienſis. *Canary Bindweed.*
Lin. ſpec. 221. *Reich.* 439. *vir. cliff.* 18. *hort. cliff.* 67. *Comm. hort.* 2. 101. *t.* 51. *Pluk. alm. t.* 325. *f.* 1. *Lour. cochinch.* 108.
Leaves cordate pubeſcent; ſtem perennial villoſe; peduncles many-flowered.

[21. Convolvulus muricatus. *Rough-ſtalked Bindweed.*
Lin. ſyſt. 201. *Reich.* 439. *mant.* 44.
Leaves cordate; peduncles thickened, they and the calyxes even; ſtem muricate.

22. Convolvulus anceps.
Lin. ſyſt. 201. *Reich.* 439. *mant.* 43. *Vahl ſymb.* 3. 31.
Leaves cordate; ſtem keeled on both ſides.]

23. Convolvulus Turpethum. *Square-ſtalked Bindweed,* or *Turbith.*
Lin. ſpec. 221. *Reich.* 440. *fl. zeyl. n.* 74. *mat. med.* 61. *Blackw. t.* 397. *Plenck, ic. t.* 105. *Herm. lugdb.* 177. *t.* 178, 179. *Burm. zeyl.* 71. *Raii hiſt.* 1882.
Turpethum repens, fol. althææ vel indicum. *Bauh. pin.* 149.
Leaves cordate angular; ſtem membranaceous quadrangular; peduncles many-flowered.

[24. Convolvulus grandiflorus.
Lin. ſyſt. 201. *ſuppl.* 136. *Jacqu. hort.* 3. *t.* 69.
Munda-valli. *Rheed. mal.* 11. 103. *t.* 50.
Leaves cordate ovate bluntiſh quite entire peduncled, bearing about two flowers, calyxes coriaceous; ſtem and petioles pubeſcent.

25. Convolvulus maximus.
Lin. ſyſt. 201. *ſuppl.* 137. *Vahl ſymb.* 3. 26.
Tiru-tali. *Rheed. mal.* 11. 109. *t.* 53.
Leaves cordate ovate acuminate quite entire very ſmooth; ſtem and petioles very ſmooth.

26. Convolvulus ſpecioſus. *Broad-leaved Bindweed.*
Lin. ſyſt. 201. *ſuppl.* 137. *Ait. hort. kew.* 1. 211.
C. nervoſus. *Burm. ind.* 48. *t.* 20. *f.* 1.
Leaves cordate, tomentoſe-ſilky on the lower ſurface; peduncles longer than the petiole, umbellate; calyxes acute.

27. Convolvulus trinervius.
Lin. ſyſt. 201. *Thunb. jap.* 85.
Leaves cordate oblong ſmooth three-nerved, ſtem round; peduncles one-flowered.

28. Convolvulus peltatus.
Lin. ſpec. 221. *Reich.* 440. *Rumph. amb.* 5. *t.* 157.
Leaves peltate; peduncles many-flowered.]

29. Convolvulus Jalapa. *Jalap Bindweed.*
Lin. ſyſt. 201. *Reich.* 440. *mant.* 43. *mat. med.* 60. *Raii hiſt.* 724. *Ait. hort. kew.* 1. 211. *Woodv. med. bot.* 59. *t.* 21. *Plenck, ic. t.* 94.
Bryonia mechoacana nigricans. *Bauh. pin.* 298. *prodr.* 135. *Bauh. hiſt.* 2. 151. *Park. theat.* 179. 7.
Leaves ovate ſubcordate obtuſe obſcurely repand villoſe underneath; peduncles one-flowered.

[30. Convolvulus ſericeus.
Lin. ſyſt. 201. *Reich.* 440. *mant.* 43.
C. mollis. *Burm. ind.* 44. *t.* 17. *f.* 1.
Leaves lanceolate-elliptic, tomentoſe-ſilky underneath; peduncles ſubumbellate; calyxes hairy.

31. Convolvulus tomentoſus.
Lin. ſpec. 222. *Reich.* 441. *Sloan. jam.* 1. 154. 12. *t.* 98. *f.* 2. *Raii ſuppl.* 381. 90. *Pluk. alm. t.* 167. *f.* 4. *Lour. cochinch.* 108.
Leaves three-lobed, tomentoſe; ſtem lanuginoſe.]

32. Convolvulus althæoides. *Mallow-leaved Bindweed.*
Lin. ſpec. 222. *ſyſt.* 202. *Reich.* 441. *vir. cliff.* 18. *hort. cliff.* 97.
C. argenteus, althææ fol. *Bauh. pin.* 295. *Mor.* 1. 3. 10.
C. betonicæ althææque fol., repens argenteus. *Barr. rar.* 5. *t.* 312.
β. C. argenteus elegantiſſimus, fol. tenuiter inciſis. *Tournef. inſt.* 85. *Silky-leaved Bindweed.*
C. elegantiſſimus. *Mill. dict. n.* 22.
C. ſericeus. *Vahl ſymb.* 1. 15. *Forſk. ægypt.* 204.
Leaves cordate ſinuate, ſilky, lobes repand; peduncles two-flowered.

[33. Convolvulus cairicus. *Jagged-leaved Bindweed.*
Lin. ſpec. 222. *ſyſt.* 202. *Reich.* 441. *Vahl ſymb.* 1. 15. *Mor.* 1. 7. 6. *Barr. ic.* 30.
C. ægyptius. *Veſl. ægypt.* 73. *t.* 74.
Ipomæa palmata. *Forſk. ægypt.* 43.
Leaves palmate ſmooth ſerrulate; ſtipules leaf-ſhaped, palmate, axils tomentoſe; calyxes panicled, even.

34. Convolvulus copticus.
Lin. ſyſt. 202. *Reich.* 441. *mant.* 559. *Retz. obſ.* 2. 11. *n.* 16.
C. quinquefolius. *Bauh. pin.* 295. 8. *prodr.* 134. 3. *fig.*
Leaves pedate, ſerrate; peduncles enſiform, two-flowered; calyxes muricate.

35. Convolvulus vitifolius. *Vine-leaved Bindweed.*
Lin. ſyſt. 202. *Reich.* 442. *mant.* 203. *Burm. ind.* 45. *t.* 18. *f.* 1. *Pluk. alm. t.* 25. *f.* 3.
Leaves palmate five-lobed, ſmooth toothed; ſtem hairy; peduncles many-flowered.

36. Convolvulus diſſectus.
Lin. ſyſt. 202. *Reich.* 442. *mant.* 204. *Jacqu. obſ.* 2. *p.* 4. *t.* 28. *hort.* 2. *t.* 159.
Leaves palmate ſeven-parted tooth-ſinuate ſmooth; ſtem hairy; peduncles one-flowered.]

37. Convolvulus macrocarpus. *Long-fruited Bindweed.*
Lin. ſpec. 222. *Reich.* 442. *Plum. ſpec.* 1. *ic.* 91. *f.* 1.
Leaves palmate-pedate five-parted; peduncles one-flowered.

38. Convolvulus paniculatus. *Panicled Bindweed.*
Lin. ſpec. 223. *ſyſt.* 202. *Reich.* 442.
Pal-modecca. *Rheed. mal.* 11. 101. *t.* 49. *Raii ſuppl.* 374.
β. Modecca. *Rheed. mal.* 8. 39. *t.* 20.
Leaves palmate, lobes ſeven ovate acute quite entire, peduncles panicled.

39. Convolvulus macrorhizos.
Lin. ſpec. 223. *Reich.* 443. *Plum. ſpec.* 1. *ic.* 90. *f.* 1.
Leaves digitate in ſevens quite entire; ſtem ſmooth; peduncles three-flowered.

40. Convolvulus quinquefolius. *Smooth five-leaved Bindweed.*
Lin. ſpec. 223. *Reich.* 443. *Swartz obſ.* 63. *Pluk. alm. t.* 167. *f.* 6.
Leaves digitate ſmooth toothed; peduncles even.]

41. Convolvulus pentaphyllus. *Hairy five-leaved Bindweed.*
Lin. ſpec. 223. *Reich.* 443. *hort. upſ.* 39. *Herm. lugdb.* 183. *t.* 185. *Raii hiſt.* 1881. *Sloan. jam.* 1. 153.
β. C. pentaphyllos, &c. *Plum. amer.* 1. *ic.* 91. *f.* 2.
Leaves digitate in fives hairy quite entire; ſtem hairy.

[42. Convolvulus martinicenſis.
Lin. ſyſt. 202. *Reich.* 448. *Jacqu. amer.* 26. *t.* 17. *pict.* 19. *t.* 24. *Loefl. it.* 231.
Leaves elliptic; ſtem creeping ſomewhat twining.

*** Stem not twining.*

43. Convolvulus ſpinoſus.
Lin. ſyſt. 202. *ſuppl.* 137.
C. fruticoſus. *Pall. it.* 2. 734. *t.* M.
Shrubby erect; leaves lanceolate ſilky; flower-bearing branchlets thorny.]

44. Convolvulus ſiculus. *Small-flowered Bindweed.*
Lin. ſpec. 223. *Reich.* 443. *hort. cliff.* 67. *Bocc. ſic.* 89. *t.* 48. *Mor. ſ.* 1. *t.* 7. *f.* 4, 5.
Leaves cordate-ovate; peduncles one-flowered; bractes lanceolate; flowers ſeſſile.

[45. Convolvulus pentapetaloides.
Lin. ſyſt. 202. *Reich.* 444. *Vahl ſymb.* 2. 36.
C. proſtratus. *Forſk. ægypt.* 203.
Leaves lanceolate, obtuſe, naked, marked with lines; branches declining; flowers ſolitary, half-five-cleft.]

46. Convolvulus lineatus. *Dwarf Bind weed.*
Lin. ſpec. 224. *Reich.* 444. *D'Aſſo aragon. n.* 174. *Mor. ſ.* 1. *t.* 4. *f.* 2. (*bad*). *Barr. rar.* 31. *t.* 1132. *Triumf. obſ. t.* 91. *f.* 2.
Leaves lanceolate, ſilky, marked with lines petiolate; peduncles two-flowered; calyxes ſilky, ſomewhat leafy.

47. Convolvulus Cneorum. *Silvery-leaved Bindweed.*
Lin. ſpec. 224. *ſyſt.* 203. *Reich.* 444. *Mor.* 1. 3. 1. *Barr. rar.* 4. *t.* 470. *Bocc. muſ.* 2. *t.* 70.
Dorycnium. *Cluſ. hiſt.* 2. 254.
Cneorum album, fol. oleæ argenteo molli. *Bauh. pin.* 463.
Leaves lanceolate, tomentoſe; flowers umbelled; calyxes hirſute; ſtem erect.

48. Convolvulus Cantabrica. *Flax-leaved Bindweed.*
Lin. ſpec. 225. *ſyſt.* 203. *Reich.* 445. *hort. cliff.* 68. *Jacqu. auſt.* 3. *t.* 296. *Scop. carn. n.* 221. *D'Aſſo aragon. n.* 175. *Ger. prov.* 318. 5. *Villars dauph.* 2. 485. *Mor.* 1. 4. 3. *Bauh. pin.* 295. 10. *Munting. phyt.* 29. *f.* 140. *Dalech.* 1426.
Cantabrica. *Cluſ. hiſt.* 2. 49. *With decumbent ſtems.*
β. C. Cantabrica. *Lin. ſpec. edit.* 1. 158.—terreſtris. *edit.* 2. 224. *mant.* 336. *With upright ſtems.*
Volvulus terreſtris. *Dalech.* 1425. *Bauh. hiſt.* 2. 160.
Leaves linear-lanceolate, acute, hairy; lower peduncles longer than the leaves, bearing about two flowers; calyxes oblong-lanceolate, hirſute.

[49. Convolvulus Dorycnium.
Lin. ſpec. 224. *Reich.* 445.
Leaves ſublinear, ſilky; ſtem ſhrubbyiſh, panicled; calyxes almoſt naked, obtuſe.]

50. Convolvulus ſcoparius. *Broom Bindweed.*
Lin. ſyſt. 203. *ſuppl.* 135. *Ait. hort. kew.* 1. 213.
C. linarifolius. *Mill. dict. n.* 28.
Leaves linear, ſomewhat hairy; peduncles bearing about three flowers; calyxes ſilky, ovate, acute; ſtem ſhrubby; branches wand-like.

[51. Convolvulus Oenotheroides.
Lin. ſyſt. 203. *ſuppl.* 137.
Shrubby, erect; leaves linear, becoming hoary; peduncles axillary, ſolitary, erect, one-flowered, bracted; calyxes lanceolate, ſmooth.

52. Convolvulus floridus. *Many-flowered Bindweed.*
Lin. ſyſt. 203. *ſuppl.* 136. *Jacqu. ic. collect.* 1. 62. *Ait. hort. kew.* 214.
Leaves oblong-lanceolate, drawn to a point at the baſe, ſomewhat hairy; flowering branches and peduncles panicled.

53. Convolvulus corymboſus.
Lin. ſpec. 225. *Reich.* 445. *Plum. ſpec.* 1. *ic.* 89. *f.* 2.
Leaves cordate; peduncles umbellate; ſtem creeping.

54. Convolvulus ſpithamæus.
Lin. ſpec. 225. *Reich.* 446. *Gron. virg.* 141.
Leaves cordate, pubeſcent; ſtem ſtraight; peduncles one-flowered.

55. Convolvulus perſicus.
Lin. ſpec. 225. *ſyſt.* 203. *Reich.* 446. *amœn.* 2. 341. *Gmel. it.* 3. 36. *t.* 7.
Leaves oval, tomentoſe; peduncles one-flowered.]

56. Convolvulus tricolor. *Trailing Bindweed.*
Lin. ſpec. 225. *Reich.* 446. *vir. cliff.* 19. *hort. cliff.* 68. *hort. upſ.* 38. *Curt. magaz.* 27. *Bauh. pin.* 295. 7. *Mor.* 1. 4. 4. *Park. parad.* 358. *n.* 4. 361. *f.* 3.
Leaves lanceolate-ovate, ſmooth; ſtem declining; flowers ſolitary.

57. Convolvulus repens.
Lin. ſpec. 225. *Reich.* 446. *Gron. virg.* 141. *Plum. amer.* 89. *t.* 105? *Vahl ſymb.* 1. 17. *Swartz obſ.* 64.
Ipomæa aquatica. *Forſk. ægypt.* 44.
Ballel. *Rheed. mal.* 11. 107. *t.* 52.
Leaves ſagittate, obtuſe behind; ſtem creeping; peduncles one-flowered, (or two-flowered.)

[58. Convolvulus reptans.
Lin. ſpec. 225. *Reich.* 446. *Lour. cochinch.* 109.
Olus vagum. *Rumph. amb.* 5. 419. *t.* 155. *f.* 1.
Leaves haſtate-lanceolate, ears rounded; ſtem creeping; peduncles one-flowered.

59. Convolvulus edulis.
Lin. ſyſt. 203. *Thunb. jap.* 84.
Leaves cordate, entire and three-lobed, ſmooth; ſtem creeping, angular.]

60. Convolvulus hirtus.
Lin. ſpec. 226. *Reich.* 447.
Leaves cordate and ſubhaſtate, villoſe; ſtem and petioles hairy; peduncles many-flowered.

61. Convolvulus Soldanella. *Sea Bindweed.*
Lin. ſpec. 226. *Reich.* 447. *hort. cliff.* 67. *mat. med.* 61. *Hudſ. angl.* 89. *With.* 214. *Lightf.* 140. *Scop. carn. n.* 222. *Mor.* 1. 3. 2. *Plenck, ic. t.* 93.
Soldanella maritima minor. *Bauh. pin.* 295. *Ger.* 690. *emac.* 838. 1. *Park. theat.* 168. 2. *Raii hiſt.* 726.
Braſſica marina, ſ. Soldanella. *Bauh. hiſt.* 2. 166. *Cord. hiſt.* 205.
Leaves kidney-ſhaped; peduncles one-flowered.

[62. Convolvulus Pes capræ. *Thick-leaved Bindweed.*
Lin. ſpec. 226. *Reich.* 447. *fl. zeyl.* 75. *Herm. lugdb.* 174. *t.* 175. *Rumph. amb.* 5. 433. *t.* 159. *f.* 1. *Rheed. mal.* 11. 117. *t.* 57. *Lour. cochinch.* 109.
Leaves two-lobed; peduncles one-flowered.]

63. Convolvulus braſilienſis. *Braſilian Bindweed.*
Lin. ſpec. 226. *Reich.* 447. *Brown. jam.* 153. 5. *Plum. amer.* 89. *t.* 104. *Marcgr. braſ.* 51. *Piſ. braſ.* 258.
Leaves emarginate with two glands at the baſe; peduncles three-flowered.

[64. Convolvulus ſublobatus.
Lin. ſyſt. 204. *ſuppl.* 135.
Upper leaves tooth-repand at the end; ſtem procumbent; flowers in a head.

65. Convolvulus littoralis.
Lin. ſpec. 227. *Reich.* 448. *Plum. ſpec.* 1. *ic.* 90. *f.* 2.
Leaves oblong lobe-palmate; peduncles one-flowered; ſtem creeping.]

Species from other Authors.

66. Convolvulus palmatus.
Mill. dict. n. 8.
C. pentaphyllos, fol. glabro dentato, viticulis hirſutis. *Plum. cat.*
Leaves palmate, lobes ſeven, ſinuate pointed; peduncles one-flowered; calyxes very large ſpreading; ſtem twining.

67. Convolvulus ariſtolochifolius.
Mill. dict. n. 9.
C. americanus, Ariſtolochiæ fol. longiore, flor. plurimis in uno pedunculo. *Houſt. Mſs.*
Leaves haſtate-lanceolate, with rounded ears; peduncles many-flowered; ſtem twining.

68. Convolvulus glaber.
Mill. dict. n. 11.

C. fol. oblongis glabris; flor. amplis purpureis. *Houſt. Mſs.*

Leaves ovate-oblong, ſmooth; peduncles one-flowered; calyxes ten-parted; ſtem twining.

69. Convolvulus multiflorus.

Mill. dict. n. 15.

C. americanus, vulgaris folio, capſulis triquetris numeroſis, ex uno puncto, longis petiolis propendentibus, ſemine lanugine ferruginea villoſa. *Pluk. phyt. t.* 167. *f.* 1.

Leaves cordate, ſmooth; peduncles many-flowered; ſeed villoſe, ferruginous; ſtem twining.

70. Convolvulus hederaceus.

Mill. dict. n. 17. See n. 10.

C. fol. hederaceo anguloſo lanuginoſo, flore magno cæruleo patulo. *Sloan. cat. jam.* 56.

Leaves triangular, acute; flowers many ſeſſile ſpreading; calyxes acute, many-cleft; ſtem twining.

71. Convolvulus roſeus.

Mill. dict. n. 18.

C. americanus hirſutus, fol. acuminato, fl. amplo roſeo. *Houſt. Mſs.*

Leaves cordate, acuminate; peduncles two-flowered; ſtem twining.

72. Convolvulus betonicifolius. (Conf. n. 8.)

Mill. dict. n. 20.

C. exoticus, Betonicæ fol., flore magno albo, fundo purpureo. *Cat. hort. R. Par.*

Leaves cordate-ſagittate; peduncles one-flowered; ſtem twining.

[73. Convolvulus tuguriorum.

Forſt. fl. auſtr. n. 74.

Leaves cordate-ſagittate, acute; ſtem angular, twining; peduncles four-cornered, one-flowered.

74. Convolvulus cæleſtis.

Forſt. fl. auſtr. n. 77.

Leaves cordate, extremely acuminate, pubeſcent; peduncles elongated umbellate-trifid; ſtem twining.

75. Convolvulus mucronatus.

Forſt. fl. auſtr. n. 79.

Leaves palmate-pedate, lobes ciliate mucronate; peduncles one-flowered; ſtem twining.

76. Convolvulus tridentatus. *Trifid Bindweed.*

Lin. ſpec. ed. 1. 157. *Ait. hort. kew.* 208. *Pluk. alm. t.* 276. *f.* 5. *Rheed. mal.* 11. 133. *t.* 65.

Evolvulus tridentatus. *Lin. ſpec. ed.* 2. 392. *Reich.* 751. *Burm. ind.* 77. *t.* 16. *f.* 3.

Leaves wedge-ſhaped three-cuſped, dilated at the baſe, and toothed; peduncles one-flowered; ſtem twining.

77. Convolvulus bufalinus.

Lour. cochinch. 109.

Stem ſhrubby ſcandent, leaves cordate-ſagittate, ſmooth, peduncles many-flowered, anthers ſpiral.

78. Convolvulus aggregatus.

Lour. cochinch. 109.

Leaves palmate ſeven-lobed hairy, flowers aggregate.

79. Convolvulus haſtatus.

Vahl ſymb. 1. 15. *Forſk. ægypt.* 203.

Leaves lanceolate haſtate, peduncles axillary, in pairs, two-flowered.

80. Convolvulus lanatus.

Vahl ſymb. 1. 16.

C. Cneorum. *Forſk. ægypt.* 63. *n.* 124. *catal. arab.* 106. *n.* 120.

C. orientalis humilis argenteus latifolius erectus & villoſus. *Tournef. cor.* 1.

Leaves lanceolate linear tomentoſe, older branches ſpiny, flowers in involucred heads.

81. Convolvulus Hyſtrix.

Vahl ſymb. 1. 16.

C. ſpinoſus. *Forſk. arab.* 106. *n.* 121.

Shrubby, leaves oblong, flowers ſeſſile ſubſolitary, branches ſpineſcent.

82. Convolvulus Imperati.

Vahl ſymb. 1. 17.

C. ſtoloniferus. *Cyrill. rar. neap.* 14. *t.* 5.

Convolvulo marino. *Imper.* 671. (*l.* 28. *p.* 754. *fig.* 767.)

C. marinus Soldanellæ affinis. *Baub. hiſt.* 2. 168. —major italicus, ſinuato & auriculato folio. *Mor. hiſt.* 2. 37.

Soldanella vel Braſſica maritima major. *Baub. pin.* 295. *Barrel. ic.* 856.

Leaves panduriform or entire, emarginate cordate at the baſe, peduncles one-flowered, ſtem creeping.

83. Convolvulus arenarius.

Vahl ſymb. 1. 18. & 3. 32.

Leaves oblong emarginate lobed at the baſe or entire, peduncles one-flowered, corollas tubular, ſtem twining.

84. Convolvulus Wheleri.

Vahl ſymb. 2. 36.

C. ſagittariæ foliis, flore purpureo Wheleri. *Pluk. phyt. t.* 85. *f.* 3.

Ipomæa ſagittata. *Poir. it.* 2. 160. *t.* 3.

Leaves ſagittate roundiſh behind and entire, peduncles round, one-flowered.

85. Convolvulus lanuginoſus.

Vahl ſymb. 3. 23.

Leaves cordate-oblong ſubhaſtate ſilky-tomentoſe, ears toothed, peduncles three-flowered, ſtem hairy.

86. Convolvulus incanus.

Vahl ſymb. 3. 23.

Silky-tomentoſe, leaves lanceolate ſagittate blunt, ſomewhat toothed at the baſe, peduncles two-flowered.

87. Convolvulus emarginatus.

Vahl ſymb. 3. 23.

C. uniflorus. *Burm. ind.* 47. *t.* 21. *f.* 2.

Leaves lanceolate, the lower ones emarginate mucronate, peduncles one-flowered, outer calycine leaflets ſemiovate, large.

88. Convolvulus filicaulis.

Vahl ſymb. 3. 24.

Leaves linear-lanceolate obtuſe mucronate dilated and toothed at the baſe, calycine leaflets oblong.

89. Convolvulus anguſtifolius.

Vahl ſymb. 3. 24.

Leaves linear haſtate obtuſe mucronate ſmooth, ears almoſt quite entire, peduncles one-flowered.

90. Convolvulus dentatus.

Vahl ſymb. 3. 25.

Leaves haſtate, ſmooth, ears toothed, peduncles many-flowered, muricate.

91. Convolvulus bracteatus.

Vahl ſymb. 3. 25.

Leaves cordate almoſt entire, and three-lobed, haſtate attenuated, peduncles one-flowered, outer calycine leaflets bracte-ſhaped.

92. Convolvulus bicolor.

Vahl ſymb. 3. 25.

Leaves cordate villoſe, angular-ſublobate at the baſe, peduncles one-flowered, outer calycine leaflets bracte-ſhaped.

93. Convolvulus platanifolius.

Vahl ſymb. 3. 26. *Pluk. phyt. t.* 167. *f.* 3. *Feuill. peruv.* 3. 16. *t.* 11.

Leaves cordate three-lobed, ſide-lobes tooth-angular, peduncles ſubtriflorous, and calyxes almoſt equal, ſmooth.

94. Convolvulus acuminatus.

Vahl ſymb. 3. 26.

Leaves cordate and three-lobed, attenuated, peduncles elongated many-flowered and calyxes ſmooth.

95. Convolvulus gemellus.

Vahl ſymb. 3. 27. *Burm. ind.* 46. *t.* 41. *f.* 1.

Leaves cordate, ſomewhat villoſe underneath, peduncles two-flowered.

96. Convolvulus ſtriatus.

Vahl ſymb. 3. 28.

Leaves cordate attenuated ſmooth, peduncles longer than the leaf, having three or four flowers, corollas ſmooth, ſtriated on the outſide.

97. Convolvulus guianenſis.

Vahl ſymb. 3. 28. *Aubl. guian.* 136. *t.* 52.

Leaves cordate-ovate underneath, with the calyxes tomentoſe, peduncles elongated, flowers corymbed in a ſort of head.

98. Convolvulus capitatus.

Vahl ſymb. 3. 28.

Hiſpid, leaves cordate-ovate, flowers in a head.

99. Convolvulus hiſpidus.

Vahl ſymb. 3. 29.

Extremely hirſute, leaves cordate-ovate, flowers umbelled, peduncles very ſhort.

100. Convolvulus parviflorus.

Vahl ſymb. 3. 29.

Ipomæa paniculata. *Burm. ind.* 50. *t.* 21. *f.* 3.

Leaves cordate acuminate ſmooth, peduncles many-flowered, and calyxes acuminate villoſe.

101. Convolvulus violaceus.

Vahl ſymb. 3. 29.

Leaves and the two outer leaflets of the calyx cordate-ovate, acute, peduncles elongated bifid many-flowered.

102. Convolvulus triflorus.

Vahl ſymb. 3. 30.

Leaves cordate-lanceolate attenuated ſmooth obtuſe, peduncles three-flowered.

103. Convolvulus bifidus.

Vahl ſymb. 3. 30.

C. lævis mas. *Rumph. amb.* 5. 431.

β. C. lævis minor. *Rumph. amb.* 5. 431. *t.* 158.

Leaves cordate-oblong acuminate very ſoft underneath, peduncles bifid many-flowered.—in β, *lanceolate-oblong, ſmooth.*

104. Convolvulus triqueter.

Vahl ſymb. 3. 30.

Leaves cordate acute ſubvilloſe, peduncles many-flowered, ſtem three-keeled.

105. Convolvulus quinqueflorus.

Vahl ſymb. 3. 31.

Leaves ſagittate-ovate attenuated ſmooth crenate ſubrepand, peduncles moſtly five-flowered.

106. Convolvulus crenatus.

Vahl ſymb. 3. 31.

Tomentoſe-ſilky, leaves cordate-oblong extremely blunt crenulate, peduncles one-flowered.

107. Convolvulus quinquelobus.

Vahl ſymb. 3. 32.

Leaves palmate-five-lobed ſerrulate blunt ſmooth, axils tomentoſe, peduncles one-flowered, ſtem ſmooth.

108. Convolvulus venoſus.

Vahl ſymb. 3. 32.

Very ſmooth, leaves digitate-quinate, leaflets petioled acuminate quite entire, peduncles many-flowered.

109. Convolvulus tenuifolius.

Vahl ſymb. 3. 33.

Leaves digittate in fives, leaflets linear, peduncles four or five-flowered.

110. Convolvulus ſaxatilis.

Vahl ſymb. 3. 33. *Bocc. muſ.* 138. *t.* 96. & *part* 2. 79. *t.* 70. *Barrel. ic.* 470.

Campanula Lychnidea. *Bauh. hiſt.* 2. 803.

Lychnis ſylveſtris. *Dalech. hiſt.* 817.

Extremely hirſute, leaves linear, flowers in heads, calyxes acuminate.

DESCRIPTIONS, &c.

Stems herbaceous, milky, in the greater part twining, in a very few ſhrubby. Leaves alternate. Peduncles axillary or terminating, one-flowered, with two bractes, or many-flowered[a].

Gærtner remarks, that it is clear from the ſtructure of the ſeed, if from nothing elſe, that the genus *Convolvulus* cannot be referred to the natural order of *Perſonatæ* with Adanſon, or to that of *Campanaceæ* with Linneus; but to a particular family with Juſſieu, or elſe to the *Malvaceæ*, with which the ſpecies very frequently agree even in their leafing.

He deſcribes the ſeed as having a three-fold covering; the outmoſt very thin, adhering to the ſeed like black ſoot; the middle one cartilaginous, thin, of a brown-bay colour; the inmoſt membranaceous, doubled, with a farinaceous lamina. Albumen thin, farinaceous, extremely white, deſcending between the folds of the cotyledons, convertible by water into a pellucid jelly. Embryo the ſize of the ſeed, curved, yellowiſh: cotyledons leafy, turned and twiſted like a chryſalis: radicle roundiſh, inferior.

Of this very numerous genus, not above thirteen ſpecies are natives of Europe; the others are moſtly inhabitants of the warmer climes of Aſia and America. Very few of them are common in our gardens except the twelfth and the fifty-ſixth; vulgarly known by the names of *Convolvulus major* and *minor.* Mr. Miller has recited thirty-one ſpecies in the laſt edition of his dictionary; but ſome of theſe are only varieties, and he had not cultivated them all. No leſs than thirty-three ſpecies are mentioned in the catalogue of the royal garden at Kew. Scammony, n. 3. Jalap, n. 29. and Spaniſh Potatoes, n. 15. are the moſt remarkable plants. The two firſt ſorts (arvenſis and ſepium) are common weeds over the greateſt part of Europe.

1. Root perennial, milky, white, the thickneſs of a crow quill, creeping ſo as ſcarcely to be eradicated. Stalks numerous, ſlender, twiſted, procumbent, branched, frequently ſuffocating plants by twining round them. Leaves alternate, haſtate, ſmooth, running out into two points behind. Petioles ſhorter than the leaves, on the lower part convex, on the upper channelled. Bractes at a diſtance from the flower, and ſometimes a ſecond, or even a third flower proceeds from the boſom of them. Corolla elegantly variegated with red and white, ſometimes wholly white. Seeds angular and brown[b].—The filaments have ſeſſile glands ſcattered over them[c]. The claws of the ſtamens are bearded; and a ſaffron-coloured gland ſurrounds the germ[d].

The leaves vary ſomewhat in ſhape; and ſometimes are very narrow; hence the variety β.—The flowers alſo are ſometimes ſmall, and divided almoſt to the baſe; hence the variety γ. It flowers in june and july, in gardens and corn fields, and on dry banks.]

Mr. Miller ſays, it is generally a ſign of gravel lying under the ſurface. He adds, that the roots run very deep into the ground, whence ſome country people name it *Devil's guts.* [It is called in Yorkſhire *Corn-bind*, in other parts *Withwind*, *Bindweed*, *Barebind*, and *Hedge-bells.*

It is the peſt of gardens and arable land, and is infinitely more deſtructive than the next ſpecies, becauſe that keeps to the hedges for the ſake of climbing, whereas this wanders over whole fields, whence it cannot be rooted out but by repeated ploughings in dry weather, and burning the roots, every atom of which will grow as well as Quich, its rival in creeping.

The bloſſoms give a deep yellow or orange tincture to water, which is heightened by alum and alkalies[e].

2. Root perennial, white, the thickneſs of a gooſe quill, creeping and propagating itſelf exceedingly, ſo as not to be rooted out without great difficulty. Stalks numerous, twiſted, ſtriated, generally about ſix feet high, but advancing to ten or twelve, and ſomewhat branched. Leaves alternate, ſmooth, petioled, often brown at the edge. Corolla large, white. Nectary a yellow gland, ſurrounding the baſe of the germ. Capſule ſooty-coloured, pointed. Seeds angular, brown; the cotyledons folded up in a ſingular manner[f].

Ray obſerves that it varies with a fleſh and roſe-coloured corolla; and Linneus, that it has a fleſh-coloured corolla in America.—The filaments are hairy. The peduncles are ſhorter than the petioles; which are above two inches long, ſmooth, and furrowed above[g]. According to De Necker the peduncle is often double the length of the petiole: and there are globular pedicelled glands on the filaments.

It is eaſily diſtinguiſhed from the foregoing, by its ſuperior largeneſs in every part; the ſtalks thicker and ramping higher, the leaves three or four inches long, and two or three wide, the peduncles always one-flowered, with a wide double bracte or involucre cloſe under the calyx, commonly of a duſky purple colour, the corollas two inches wide, and milk white. It flowers from july to ſeptember, in hedges.

The inſpiſſated juice of the plant, in doſes of twenty and thirty grains, is a powerful draſtic purge. Can it then be worth while, ſays Dr. Withering, to import Scammony from Aleppo, when a medicine with the very ſame properties grows ſpontaneouſly in many of our hedges? The ſmallneſs of the roots, however, in our common Bindweed, would prevent its juice from being collected in the ſame manner with that which flows on inciſion from the large root of the Scammony, and which by hardening forms that purgative ſubſtance [h].

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[a] Juſſieu.

[b] Curtis. [c] Relhan. [d] Haller. [e] Withering.

[f] Curtis. [g] Haller, Pollich, Lyons in Relh. cant.

John Bauhin mentions that ſwine are fond of the roots, and will eat them in large quantities without being purged by them.

3. This is very like the foregoing, but the leaves are not brown about the edge. The peduncles are round, and bear two or three flowers; they are alſo longer than the leaves. The involucre is very ſmall, patulous, remote, not greater than the calyx, erect and approximating. The calyx is dilated on the ſides and emarginate, not round, and acuminate.] Corolla pale yellow. Seeds ſmaller than thoſe of the preceding ſort. Capſule three or four-celled.

[Native of the Levant, and the woods of Cochinchina.

The roots are three or four feet long, and from nine to twelve inches in circumference, covered with a light-gray bark, tapering, branched at bottom, and containing a milky juice.

Martinelli, an apothecary of Venice, travelled into Syria, in order to procure the true Scammony, and ſent over the ſeeds, which were ſown, and grew at Padua and Antwerp. *Fena* 1561 *or* 1562.

Monſ. Richard, gardener to the King of France at Trianon and Verſailles, ſent the ſeeds to Mr. Miller in 1753; theſe he ſowed in the open ground, and they ſucceeded very well, producing flowers in june, july and auguſt, and ripening the ſeeds in ſeptember [i]. But it was cultivated before in 1596, by Gerarde [k].

Scammony is a gummy reſin obtained from the milky juice of the root, by clearing away the earth from the upper part of it, and cutting off the top in an oblique direction about two inches below where the ſtalks ſpring from it; then under the moſt depending part of the ſlope, a ſhell, or other convenient receptacle, is fixed for the juice to run into. This juice gradually hardening, is the genuine Scammony. It is brought from Aleppo and Smyrna. Scammony appears to have been well known to the Greek and Arabian phyſicians, who uſed it for various other purpoſes, as well as by way of a purgative. It is a ſtimulating Cathartic; but ſomewhat uncertain in its operation. The doſe is generally from three to twelve grains. It is frequently, and indeed generally employed in compoſition with other ingredients.

4. Root annual. Stem ſix feet high, even, two-angled from the decurrent ſtipules, but not ancipital. Leaves ſcarcely repand, quite entire, ending in a point the length of the leaf, paler underneath, and veined. Petioles half the length of the leaves, channelled above. Stipules ſmall, vertical. Peduncles two-cleft, two-flowered, ſhorter than the leaf. Calyx ovate, cloſe, without bractes. Corolla whitiſh, or having a ſhade of fleſh-colour, with a yellowiſh bottom, like that of *Convolvulus arvenſis*, but only half the ſize, and plaited. Stamens half the length of the corolla, with yellow anthers. Native of Siberia [l].

Introduced 1779, by Meſſrs. Kennedy and Lee. It flowers in july and auguſt [m].

5. Root annual. Stem ſix feet high, round, covered with a very fine meal. Leaves cordate or ſagittate, very obtuſe behind and emarginate, with a repand edge (ſcarcely eroſe) naked, wrinkled above, veined underneath, the ſinus of the baſe obtuſe, very acuminate, twice as long as broad. Petioles half the length of the leaves, mealy. Stipules ſcarcely any. Peduncles three-flowered, longer than the leaves. Calyx round, cloſe. Corolla three times the ſize of the calyx, ſomewhat fleſh-coloured, acute, five-cleft. Stigmas oblong [n]. Perennial. Native of Madeira. Flowering in may and june. Introduced 1777, by Mr. Francis Maſſon [o].

6. Allied to *C. reptans* (n. 58.). Stem twining, not rooting. Leaves lanceolate, ſmooth, acute, entire, dilated at the baſe into two recurved ears, ſomewhat toothed outwardly. Peduncles ſeldom two-flowered: Two lanceolate, acuminate bractes on the middle of the peduncle. Leaflets of the calyx ſagittate, as in *Campanula Medium*. Native of the Eaſt Indies [p]. Introduced 1778, by Mr. William Roxburgh. It flowers in july and auguſt, and is annual [q].

7. Stem filiform, ſimple, ſmooth. Leaves alternate, moſtly on one ſide, petioled, ſmooth; the middle lobe lanceolate, quite entire, acute, an inch in length; the ſide ones a little reflected, having one tooth behind, which is ſometimes ſhort, ſometimes half the length of the lobe; theſe are half an inch in length. Petioles filiform, reflected, ſmooth, three times the length of the leaves. Flowers axillary, ſolitary, on a peduncle the length of the leaf, filiform, ſmooth. Leaflets of the calyx ovate, acute, entire, ſmooth.—Native of Japan, where it is alſo cultivated. It flowers from may to july [r].

8. Root perennial, thick and long like that of a carrot. Stems very long and ſlender. Leaves various; the lower and upper entire, reſembling thoſe of the kidney-bean; the middle ſinuate, and ſome deeply angular: the upper leaves, and thoſe which ariſe from the axils of the larger ones are ſmooth, but the middle and lower leaves are covered with a fine lanugo, perceptible to the touch rather than the ſight. Peduncles long, ſlender, ſuſtaining from one to three flowers, large and white, with the bottom of a fine purple. Capſule two-celled and two-ſeeded. Seeds hirſute.—Native of Carolina, whence the ſeeds were ſent to Dr. Sherard, and cultivated in the Eltham garden [s].—Alſo in Virginia. It flowers from june to ſeptember.

9. Stems ſlender, reddiſh towards the root, and at the joints hairy. Leaves ſome entire and cordate, others like ivy leaves. Peduncles near an inch in length, with a few narrow bractes. Corollas pale purple, of the ſame form and ſize with thoſe of *C. arvenſis*. Capſule globular, hairy at top, two-celled, four-valved, with two ſmooth, brown ſeeds in each cell. Cultivated in the Eltham garden, from ſeeds ſent among rice from Carolina [t].

10. This differs from the next ſpecies, which it otherwiſe very much reſembles, in having the upper leaves, and ſometimes the lower entire, whereas in that they are all angular; the flowers alſo are much larger: they are ſolitary, on very ſhort peduncles; of a very elegant blue colour, with a whitiſh baſe. Calyxes hairy [u]. Capſule ſpherical, ſmooth, thin, three-celled, three-valved: there are two ſmall ſcars at the baſe of the central angle of the cells. Seeds two in each cell, convex on one ſide, angular on the other, attenuated towards the baſe, black and ſmooth [x]. It is an annual plant, and grew in the Eltham garden from ſeeds brought by a ſlave ſhip from the river Gambia in Africa. Some Bengal ſeeds produced a Convolvulus reſembling this, but having flowers only of half the ſize.

Another plant figured in t. 83. f. 96. from Mexico, is probably not different from this. The calyxes are remarkably rough, and marked with many black tubercles, as in the *purpureus*; the peduncles are four or five-flowered [y].

The peduncles, even of the fruits, are erect, according to Linneus, and are the ſame length with the petioles. Native of Aſia, Africa and America.]

11. This alſo is an annual plant, riſing with a twining ſtalk eight or ten feet high. Leaves woolly, ending in ſharp points, and on long petioles. Each peduncle ſuſtains two flowers of a very deep blue colour, whence its name of Anil or Nil (Indigo).

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[h] Curtis.
[i] Mill. fig.
[k] Hort. kew.
[l] Linn. mant.
[m] Hort. kew.
[n] Linn. mant.
[o] Hort. kew.
[p] Linn. ſpec.
[q] Hort. kew.
[r] Thunberg.
[s] Dillenius.
[t] Ibid.
[u] Ibid.
[x] Gærtner.
[y] Dillen.

[Linneus remarks, that the peduncles are very ſhort, and the fruits erect.]

This is one of the moſt beautiful of the genus. Some have ſuppoſed it to be only a variety of the twelfth ſort; but the leaves have three deeply divided lobes, whereas in the other they are entire. It flowers all the latter part of the ſummer, and in good ſeaſons the ſeeds ripen well in the open air.

[It is a native of America, and was cultivated before 1597, by Gerarde[z], but periſhed before it ripened its ſeeds. " He ſays, that it is called of " the Arabians *Nil:* of Serapio *Hab al Nil:* about " Alepo and Tripolis in Syria, the inhabitants call " it *Haſmiſen:* the Italians *Campana azurea,* of the " beautiful azured flowers, and alſo *Fior di notte,* " becauſe his beauty appeareth moſt in the night." This ſpecies is now rarely met with in our gardens[a].

12. Peduncles erect, but the pedicels of the fruit thickened and drooping; the calyx dotted-ſcabrous and hairy[b].] It is commonly known in the gardens by the name of *Convolvulus major.* There are three or four laſting varieties of it; the moſt common has a purple flower, but there is one with a white, a ſecond with a red, and a third with a whitiſh blue flower and white ſeeds. Theſe plants, if properly ſupported, will riſe ten or twelve feet high; they flower in june, july and auguſt, and will continue till the froſt kills them. Their ſeeds ripen in autumn.

[Native of America.

Sent out of Italy, and cultivated in England 1629[c].]

β. In Jamaica, where it grows naturally, this ſends out long branches, which twiſt about the trees, and riſe to a great height. The leaves are ſmooth, heart-ſhaped, ending in long points, the ears at the baſe are large and rounded, and the petioles are long and ſlender. The peduncles are long, each ſuſtaining three flowers: the corolla is of a deeper purple, and the tube is longer than in the other. It flowers from the end of june till the froſt deſtroys it.

[γ. Stems ſlender, with a tinge of duſky purple. Leaves ſomewhat hairy; peduncles two inches long, hairy, bearing one or two flowers on pedicels half an inch in length. Corolla bright blue, with a whitiſh baſe. Calyx warted and hairy, with ſome ſlender bractes at the baſe.—The leaves in this variety are only half the ſize of the firſt, and the flowers are much ſmaller; when the corolla fades it breaks into five pieces, which the other ſeldom does. Cultivated in the Eltham garden from ſeeds ſent by Bern. de Juſſieu, who received them from the banks of the Miſſiſippi[d].

δ. The leaves of this are ſmaller than f. 96. ſee n. 10. and the hairs ſo few and inconſiderable, that they appear to be ſmooth. The flowers are fewer, deeper coloured, and ſomething larger; the whole plant is leſs, and does not riſe ſo high, but the principal difference is, that the calyxes are not dotted.—It is lower, the leaves leſs and ſmooth, the flowers ſmaller than in the firſt of theſe, and of a violet colour.—It grew in the Eltham garden from ſeed that came among rice from Carolina[e].

Theſe varieties are all annual.

13. Stem pubeſcent. Leaves villoſe-ſcabrous. Native of Java[f].

14. Root annual. Stem round. Leaves exactly cordate, ſomewhat villoſe underneath, ſcabrous about the edge; the petioles ſubpubeſcent. Peduncles longer than the petioles, ſubpubeſcent, thicker at top and ſmooth; with two obſcure bractes. Corolla as in n. 10. but leſs, and different in colour[g].

Stems, according to Dillenius, many, ſlender, three feet high and upwards, ſmooth at bottom, but hairy at top. Corolla nearly the ſize of *C. arvenſis,* white with a tinge of yellow and a purple eye. Fruits reflected.—It grew in the Eltham garden from ſeeds ſent from Batavia; and flowered in auguſt[h].

Native of China, Cochinchina, Batavia, Ceylon and Surinam.

15. Stem round, perennial, hiſpid, proſtrate, creeping, putting forth ſcattered, oblong, acuminate tubers, purple or pale on the outſide. Leaves angular, on long petioles. Flowers purple, lateral, large, three or thereabouts together, on upright peduncles[i].

Native of both Indies, alſo of China, Cochinchina, &c. But it is affirmed, that it was unknown in the Philippine and Molucca iſlands before the Spaniards brought it there. In Amboina, Banda, Ternate, &c. the inhabitants add *Caſtela* to the name, as having derived it from the Caſtilians or Spaniards. Gerarde cultivated it in 1597. He calls theſe roots *Potatus, Potades,* or *Potatoes,* and ſays that they are by ſome named *Skyrrits of Peru.* He bought the roots at the exchange in London, and they flouriſhed in his garden until winter, at which time they periſhed and rotted. Neither he, nor Parkinſon, nor any of the old botaniſts were acquainted with the fructification, inſomuch that Cluſius could not learn whether this plant bore flower or fruit; and Marcgraaf affirmed that it had none. Ray ſagaciouſly conjectured the *Batatas* to be a *Convolvulus.* It came firſt into Spain from the Weſt-Indies or the Spaniſh Main. The roots are annually imported into England from Spain and Portugal. They were the common Potatoes of our old Engliſh writers, the roots which are now ſo generally cultivated among us under that name being then little known.

The roots of Battatas or Spaniſh Potatoes are ſweet, ſapid, and eſteemed nouriſhing. They are very commonly cultivated in all the tropical climates; where they eat not only the roots, but the young leaves and tender ſhoots boiled.

There are probably ſeveral varieties, if not diſtinct ſpecies of Battatas. Loureiro mentions one under the name of C. mammoſus: the Battata mammoſa of Rumphius amb. t. 131.—The ſtem is ſlender, twining, annual. Leaves cordate, repand, acuminate, ſmooth, with the ribs oblique. Flowers white, two or three on a peduncle. The roots are in bunches, pale brown, hairy, ovate-oblong, frequently acuminate, white within, of a tougher ſubſtance, but not ſo ſweet as the common ſort, yet more eſteemed among the natives.

Forſter (eſcul. p. 56.) mentions a ſecond, which he took for a variety, but Solander had named it C. chryſorrhizus; the root is large, and of a dark orange colour within. It is found not only in the South ſea iſlands within the tropics, but alſo in Eaſter iſland, and in the northern parts of New Zealand. See alſo n. 93.

16. Root annual. Stem round, hairy, branched at the baſe, of the ſame ſize as in *C. arvenſis.* Petioles round, hairy, ſhorter than the leaf. Peduncles rough with hairs, in pairs, approximating at the baſe almoſt into one, ſhorter than the petiole. Calyx five-leaved, the two outer leaflets cordate-oblong, the two inmoſt linear-lanceolate, the fifth ſemicordate. Corollas white, five-cleft, ſmall, the lobes three-cleft, the middle cleft ſmalleſt: tube ſhorter than the calyx. Stamens the length of the tube. Piſtill white, the length of the ſtamens: ſtigmas two, headed, purple. Native of China[k].

17. The corolla is bell-ſhaped, as in moſt flowers of this genus, not cut as in Plumier's figure. The leaves are cordate or ovate, with the edge ſomewhat repand and roughiſh. The flowers are blueiſh and ſmall: the peduncles ſhorter than the leaf, umbellate, but the lateral pedicels are often ſubdivided.—Native of America[l].

18. Stem herbaceous, twining, filiform, ſtiff, ſubdivided, pubeſcent, round. Leaves above two inches long, and as broad at the baſe, deeply cordate, lanceolate, angles of the baſe rounded, edge ſubrepand entire, ſubtomentoſe, dark green, hoary beneath; petioles three inches long, thickiſh, round. Flowers

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[z] Hort. kew.
[a] *Curtis.*
[b] Linn. ſpec.
[c] Park. parad.
[d] Dillenius.
[e] Ibid.
[f] Linn. mant.
[g] Linn. ſpec.
[h] Dillenius.

[i] Loureiro.
[k] Linn. ſpec.
[l] Ibid.

many, terminating on peduncles three inches long or more; partial peduncles three quarters of an inch in length, three-flowered, each flower on a pedicel much longer than the partial peduncles. Corollas yellow, the border plaited, obtuſely pentangular. Two leaflets of the calyx a little ſhorter than the reſt. Anthers whitiſh oblong. Germ oblong: ſtyle ſimple: ſtigmas two, globular. Capſule two-celled, with one ſeed in each cell, black, angular-roundiſh, velvet-villoſe[m].

Native of the Weſt-Indian iſlands. It flowers in june and july. Introduced 1774, by George Young, M. D.[n].

19. Stem perennial, twining, round, ſlender, villoſe. Leaves acuminate, quite entire. Peduncles one-flowered. Corolla bell-ſhaped, with a long tube, white, with a duſky purple baſe[o].

Native of the Eaſt-Indies and Cochinchina.]

20. Roots ſtrong, fibrous. Stems woody, branched, growing twenty feet high and more when ſupported. Flowers axillary, ſeveral on one peduncle, for the moſt part of a pale blue, but ſometimes white. It flowers in june, july and auguſt, and ſometimes ripens ſeeds here. Native of the Canary iſlands, [Cochinchina, &c.

Cultivated 1690, by the Dutcheſs of Beaufort[p].

21. This bears a great reſemblance to *C. purpureus*, but the ſtalk is very ſmooth, and has harmleſs prickles ſcattered over it. Leaves undivided. Peduncles uſually two-flowered. Corolla purple, more funnel-ſhaped than in *C. purpureus*. It is a different ſpecies from *Ipomæa bona nox*.—Native of Suratte[q]. It is annual; flowers in july and auguſt, and was introduced by Daniel Charles Solander, L.L. D.[r].

22. Stem ſmooth, keeled on each ſide from leaf to leaf, or winged with two decurrent membranes. Leaves three inches long, ſmooth, veined, obtuſe, quite entire, on petioles nearly the length of the leaf. Peduncles axillary, of the ſame length with the petioles, but thicker, bearing four or five flowers. Pedicels thickened, ſubumbelled, villoſe, as are alſo the peduncles. Two bractes at the baſe of the calyx, broad, ovate, membranaceous, mucronate, villoſe, deciduous. The two outer leaflets of the calyx ovate, villoſe on the outſide, ſmooth within, mucronate; the inner only half the ſize, oblong. Corolla twice as long as the calyx, bell-ſhaped. Stigma capitate[s].

Native of Ceylon and Java.]

23. Root perennial, having thick fleſhy tubers, ſpreading far in the ground, and abounding with a milky juice which flows out when they are broken or wounded, and ſoon hardens into a reſinous ſubſtance, when expoſed to the ſun and air. Theſe put forth many twining branches. The leaves are ſoft like thoſe of Marſh-Mallow. The flowers are produced at the joints on the ſide of the ſtalks, ſeveral together on the ſame peduncle: they are white, and ſhaped like thoſe of the common great Bindweed (n. 2.) They are ſucceeded by round capſules, having three cells, which contain two ſeeds in each.

[Stems quadrangular, winged. Leaves bluntiſh, ſometimes angular; petioles ſemicylindric, half the length of the leaf. Peduncles ſubcylindric, trifid; pedicels ſubuniflorous. Corolla white, ſcarcely twice as long as the calyx, bell-ſhaped, plaited, five-cleft. The two outer leaflets of the calyx are ovate and villoſe, hence probably Linneus attributes a two-leaved involucre to each flower; the three inner ones are ovate and ſmooth. Anthers ſpiral. Stigma globular-two-lobed. Capſule membranaceous, globular-depreſſed, two-celled, with one or two roundiſh, black ſeeds, angular on one ſide, in each cell.

Native of Malabar, of the iſland of Ceylon, and of the Society and Friendly iſles, and the New Hebrides in the South Seas[t].

Cultivated 1759, by Mr. Miller[u].

24. Stem arboreous, at firſt erect, then twining, pubeſcent. Leaves large, with rounded lobes; obtuſe, ſmooth, on pubeſcent petioles. Flowers large. Calyx two or three-leaved, coriaceous. Native of the Eaſt-Indies[x].

25. Stem woody at bottom, then twining, and mounting to a great height. The whole plant very ſmooth. Native of Ceylon[y].

26. Stem arboreous, erect, then twining, round, pubeſcent. Leaves very large, hairy on the upper ſurface, covered with a white down on the lower, and ſhining like ſilver in the ſun-ſhine; the lobes rounded, and very obſcure. Petioles round and pubeſcent[z].

Native of the Eaſt-Indies.—Introduced 1778, by Sir Joſeph Banks, Bart.[a].

27. Stem filiform, ſmooth, ſimple. Leaves oppoſite, petioled, acuminate, quite entire, paler underneath, an inch or ſomewhat more in length. Petioles linear, ſmooth. Flowers ſolitary or in pairs, ſubſeſſile. Diviſions of the calyx lanceolate-ſetaceous, ſmooth, half the length of the corolla, which is purple. Native of Japan[b].

28. Native of Amboina, and the Society iſles.]

29. Root large, oval, full of milky juice. Stems many herbaceous triangular twining, eight or ten feet high. Leaves varying in ſhape, cordate, angular, or oblong and pointed; they are ſmooth, and ſtand on long petioles. Flowers ſhaped like thoſe of the common great Bindweed (n. 2.); reddiſh on the outſide, but dark purple within; probably varying in colour. Seeds covered with a very white down like cotton.

Native of South America, as at Xalapa between La Vera Cruz and Mexico. Dr. Houſtoun brought ſome of the roots to Jamaica, and planted them there, with a deſign of bringing this uſeful plant into cultivation; but they were neglected and loſt ſoon after he left the country.

[It was cultivated here a few years before 1768, by Mr. Miller: and was introduced into Kew garden in 1778, by Monſ. Thouin[c]. It is ſaid that the root was firſt brought to Europe about the year 1610.

The medicinal virtue of Jalap reſides in the reſin. The powdered root is the part uſed. It is in general a ſafe and efficacious purge; in large doſes it has been much celebrated as a hydragogue in dropſies. It is often preſcribed in a compound form, as with cream of tartar, &c. The doſe of the ſimple powder is commonly from one ſcruple to two.

30. Stem ſhrubby, ſmoothiſh. Leaves alternate, petioled, underneath ſhining, marked with lines, acute. Peduncles axillary, the length of the petioles, umbelliferous, uſually with five flowers; and with an ovate ſilky involucre. Calyxes extremely hairy.—Native of the Eaſt-Indies[d]. Loureiro ſeems to have made a new genus of this under the name of Argyreia.

31. Stem round, whitiſh, climbing twenty feet high. Leaves like the older leaves of ivy, an inch and half in length and breadth; petioles three quarters of an inch long. Flowers axillary, ſolitary; peduncles a quarter of an inch in length. Corolla of a fine purple colour, with five paler ſtreaks. Capſule ſpheroidal, acuminate, two-celled, with one black ſeed in each cell.—Native of Jamaica, China and Cochinchina[e].]

32. Root perennial, ſending out many weak twining ſtalks, about three feet high when ſupported, and if not, lying on the ground. Leaves of different forms, ſome almoſt like thoſe of Betony, and ſlightly cut on the edges, others almoſt heart-ſhaped and deeply cut, ſome to the midrib; they ſhine like ſattin, are ſoft to the touch, and ſtand on ſhort petioles. Peduncles very long, two-flowered, corolla pale roſe-colour. It flowers from june to auguſt, but rarely ripens ſeeds in England.

[Native of the Levant, county of Nice, &c.]

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[m] Swartz.
[n] Hort. kew.
[o] Loureiro.
[p] Hort. kew.
[q] Linn. mant.
[r] Hort. kew.
[s] Vahl.
[t] Forſter.
[u] Hort. kew.

[x] Linn. ſuppl.
[y] Ibid.
[z] Ibid.
[a] Hort. kew.
[b] Thunberg.
[c] Hort. kew.
[d] Linn. mant.
[e] Sloane & Loureiro.

β. This has many ſlender ſtiff ſtalks, twiſting about other plants to the height of five or ſix feet. Leaves divided into five or ſeven narrow lobes. Corolla pale roſe-colour, with five ſtripes of a deeper red. [This variety is more tender, the corolla ſmaller, the outer leaves of the calyx not hairy, and the leaves more denſely villoſe[f].

The plant in a wild ſtate has one-flowered peduncles[g].

Cultivated 1656, by Mr. John Tradeſcant, jun.[h]

33. The whole plant is ſmooth except the axils which are cloſely hairy. Leaves ſeven-cleft: clefts lanceolate, ending in a dagger point, the ſide ones ſhorter. There is a leaflet on each ſide at the baſe of the petiole, of the ſame ſtructure with the leaves on the ſtem. Peduncles twice as long as the leaf. The pedicels have two bractes about the middle. The calycine leaves are ſmooth and blunt. The corolla bell-ſhaped. The ſtigma capitate[i].

Native of Egypt. Introduced 1770, by Monſ. Richard. It flowers in june and july[k].

34. Stem herbaceous, angular, ſmooth and even. Leaves petioled, ſmooth and even; the leaflets lanceolate, ſerrate; the ſide ones gradually ſhorter. Stipules very like the leaves, only ſmaller. Petioles channelled, ſcabrous underneath. Peduncles axillary, compreſſed, ancipital or enſiform; with two minute bractes. Calyx rather oblong, acute, muricated. Corolla white, acute. Stigma blood-red.—The foregoing ſpecies has the leaves more pinnatifid and ſerrate: the corollas twice as big, and purple: the calyxes ſmooth and even: the peduncles filiform and panicled; the petioles filiform, but the ſtipules almoſt as in *C. copticus*. — Native of the Levant[l].

König ſent a plant under this name, and agreeing with this deſcription, except that the ſtems are only a ſpan high or ſhorter, proſtrate, not twining. Leaves rather palmate or five-lobed almoſt to the baſe. Peduncles ſcarcely compreſſed. Bractes like the leaves in form and ſize, only the diviſions ſomewhat narrower. Capſules large in proportion to the ſize of the plant.—Retzius doubts whether it be a diſtinct ſpecies[m].

35. Leaves divided to the midſt, the diviſions acuminate. Racemes two-parted. Calyxes villoſe. Native of the Eaſt Indies.

36. Leaves divided almoſt to the baſe. Calyx ſmooth.—Native of America[n].

37. Peduncles jointed, thickened, plaited.—Native of South America[o].

Annual. It flowers in july and auguſt. Cultivated 1752, by Mr. Miller[p].

38. It varies with three or five-lobed leaves.—In the ſands of Malabar[q].

39. Native of America.

40. Stem herbaceous, twining, filiform, round, hirſute. Leaves ſubpedate in fives, digitate, the two inner diviſions ſmaller, lanceolate, acute, ſerrate, nerved, veined, ſmooth on both ſides: petioles round, recurved, pubeſcent, ſhort. Peduncles axillary, ſolitary, twice as long as the leaves, three-flowered, erect, pubeſcent; pedicels one-flowered. Calycine leaflets oblong, permanent, ſmooth, pale, the three inner ones larger. Corolla bell-ſhaped, white, tube narrower at the baſe, ſwelling in the middle; border five-cornered, plaited, ſpreading. Capſule roundiſh, two-celled, two-ſeeded.—Native of Jamaica[r].]

Mr. Miller deſcribes it as having a woody ſtalk covered with a purple bark, and twining about trees to the height of thirty feet or more. Leaves deeply divided into five ſharp-pointed lobes. Flowers on long thick peduncles, which have a knee in the middle; they are very large, and of a purple colour. Capſules round, as large as a middling apple, divided into three cells, each containing two ſmooth ſeeds. It grows about Tolu in New Spain, whence the ſeeds were ſent by Mr. Robert Millar. [This muſt be a different plant.

41. Leaflets quite entire, pedicelled. Peduncles long, branching. Flower white. Two large bractes include the calyx. Two obtuſe ſtigmas. Capſules obtuſe. Annual.—Native of the Weſt Indies[s].

It flowers in auguſt and ſeptember. Cultivated 1759, by Mr. Miller[t].

The deſcription of C. pentaphyllus by Miller (dict. n. 12.) does not at all agree with the above.] He ſays it is perennial, and riſes with ſtrong winding ſtalks to the height of twelve or fourteen feet; that the leaves are divided into five lobes and ſtand on ſhort footſtalks; that the peduncles are long, each ſuſtaining two purple flowers; and that the ſtalks, leaves, and every part of the plant, are cloſely covered with pungent ſtinging hairs, of a light brown colour. He received the ſeeds from Carthagena in New Spain.

[He gives Plumier's name in variety β. to his 8th ſpecies, which he calls *C. palmatus*.

42. Stems round, ſmooth, proſtrate, long, rooting, twining a little. Leaves elliptic, blunt with a point, quite entire, ſmooth, petioled, two inches long. Peduncles one-flowered, axillary, ſolitary, three inches long, with two oppoſite ſmall bractes at top. The three outer calycine leaflets ovate, acute, very large and looſe; the two inner much ſmaller, lanceolate, acute. Corolla white.

Native of Martinico[u].

43. Stem ſubflexuoſe, ſcarcely twining, the whole white with very ſhort ſhining hairs. Leaves oblong or lanceolate, ſeſſile. Stems branching at top, the branches horizontal, rigid, terminated by one, erect, ſmall, whitiſh flower. The rudiments of branchlets in the axils of the branch-leaves are changed into ſhort ſpines. It has the air of *C. Cneorum.*—Obſerved by Profeſſor Pallas on the ſandy hills by the river Irtis in Siberia[x].]

44. This is an annual plant, riſing about two feet high, with ſlender twining ſtalks. The flowers are ſmall, of a blueiſh colour, and have little beauty.

[The ſtem is very little or ſcarcely twining; uſually not at all[y].—Native of the South of Europe. It flowers in june, and was cultivated by Mr. Miller in 1739[z].

45. The herb of this ſpecies very much reſembles *C. tricolor*, but it is ſmaller. Leaves ſubpetiolate. Flowers axillary, on very ſhort peduncles. Bractes ſcarcely any, only there are frequently two obſcure ſcales. The corolla has the ſtructure of *C. lineatus*, but is only one-third of the ſize; it is blue with a yellow throat; the border almoſt five-parted, with acuminate diviſions.——Native of Majorca, and annual[a].

In a poor ſoil, it varies with ſimple, filiform ſtems, a finger's length, and ſomewhat hairy towards the top: the leaves narrow, but widening at the end, the upper ones linear and ſharp; the lower flowers peduncled, the upper ſeſſile; the calyxes ſomewhat hairy[b].

46. Stems from four to ſix inches high, proſtrate, flexuoſe. Leaves remote, narrower at the baſe, acute. Peduncles ſhorter than the leaf, with two bractes longer than the calyx. Calyxes ſomewhat leafy, not hairy, but obſcurely ſilky. Corollas very hairy on the outſide[c].] The flowers are produced on the ſide and at the top of the ſtalks, in ſmall cluſters, ſitting cloſe together; they are much ſmaller than thoſe of *C. Cantabrica* (n. 48.), but of a deeper roſe-colour. The root is perennial and creeping.

[Native of the coaſts of France, Nice, Spain, and Sicily. Cultivated 1714, by the Dutcheſs of Beaufort[d].]

47. Stems ſhrubby, upright, about three feet high. Leaves lanceolate, blunt, ſilky, placed cloſely on every ſide the ſtem; they are near two inches long, and a quarter of an inch broad. The flowers

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[f] Vahl.
[g] Linn.
[h] Hort. kew.
[i] Vahl.
[k] Hort. kew.
[l] Linn. mant.
[m] Obſ. 2. 11.
[n] Linn. mant.
[o] Linn. ſpec.
[p] Hort. kew.
[q] Linn.
[r] Swartz.

[s] Linn.
[t] Hort. kew.
[u] Jacquin.
[x] Linn. ſuppl.
[y] Linn. ſpec.
[z] Hort. kew.
[a] Linn.
[b] Vahl.
[c] Linn. ſpec.
[d] Hort. kew.

are produced in cluſters at the top of the ſtem, ſitting very cloſe; they are of a pale roſe-colour, and come out in june and july, but do not perfect ſeeds in England.

[The ſtem is terminated with a four-leaved five-rayed umbel; the central peduncle one-flowered, leafleſs, the lateral ones four or five-flowered. Two bractes below the forks, and two under each alternate flower. Calyxes obtuſe, hirſute, as the bractes[e]. Native of Spain, Italy, Sicily, and the Levant.

Cultivated in 1739, in the botanic garden at Chelſea[f].

48. Root perennial, about the thickneſs of a quill, of a dirty brown colour, running deep into the ground. Stems ſeveral, annual, hirſute, round, half a foot high or more, ſlender. Leaves narrow oblong, thickiſh, pale green, hairy on both ſides, entire, alternate; the root-leaves blunter and narrowing into a ciliate petiole; ſtem-leaves acute and ſeſſile. Peduncles axillary, ſolitary, from one to three inches long, villoſe, ſuſtaining two or three flowers on ſhort pedicels. Calyx hirſute, divided into lanceolate acute ſegments. Corolla fleſh-coloured or pale roſe-coloured, with five broad red lines, which are hairy on the outſide. Anthers pale. Stigmas two filiform. Capſule ſmooth, roundiſh, two-celled, with two brown ſeeds in each cell[g]. It varies much in ſize (Mr. Miller ſays it is from two to three feet high), but it may eaſily be known by its ſtraight ſtem a little inclined, its villoſe white leaves and calyx, and pale purple flowers rolled in a ſpiral. It is fond of warm rocky ſituations[h].

Native of the South of Europe. Cultivated in 1743, by Mr. Miller[i].

49. Stem panicled. Leaves ſublanceolate, ſilky, on the upper branches ſmaller and fewer. Branches rigid, ſeldom dichotomous, terminated with flowers uſually ſolitary. Shrubby.—Native of the Levant[k].]

50. Root perennial, ſending up ſeveral erect branching ſtalks about two feet high. The flowers come out ſingly on the ſide of the ſtalks, ſeſſile, of a pale blueiſh colour, and ſpreading open almoſt to the bottom.

[It has the appearance of Broom, not of *Convolvulus*. Stem round, very ſmooth. Branches quite ſimple, erect, leafy. Leaves alternate, remote, ſhort, ſlender, erect. Racemes terminal, with the flowers moſtly on one ſide. Peduncles alternate, ſolitary, remote, moſtly three-flowered, ſeldom one-flowered, bracted. Corolla white, hairy on the outſide. The wood is white and hard, with radiating ſtreaks: when ſcraped it has the ſmell of Roſes; it has alſo a ſlight acrid taſte. *Qu.* whether it be the *Lignum Rhodium* of the ſhops?—Found about Santa Cruz, by Maſſon[l]. Mr. Miller ſays, it grows in Candia, and ſeveral iſlands of the Archipelago.

Native of the Canary iſlands. Cultivated 1768, by Mr. Miller[m].

51. This has the air of *Oenothera molliſſima*. Stems woody, round, reddiſh, ſomewhat glaucous. Leaves narrow, the length of the finger, lax, flat. Peduncles at the top of the ſtem, ſhort, angular. Bractes in pairs, recurved, ſubulate. Calyx conſiſting of five, acute, very ſmooth, ſomewhat ſpreading, hoary leaves, membranaceous about the edge. Corolla funnel-ſhaped, large, tawny-coloured.—Found at the Cape of Good Hope, by Sparmann[n].

52. This reſembles *C. Cneorum*. Stems woody, procumbent. Branches erect, ſtiff, hoary. Leaves petiolate, linear, entire, waved, veined, ſmooth. Peduncles from the axils of the upper leaves, branched continually, ſo as to form a large ovate or thyrſoid panicle. Flowers very numerous, ſmall. Leaflets of the calyx ovate, concave, acute. Corolla pale red, hirſute on the outſide[o].

Native of the Canary iſlands. Mr. Francis Maſſon. Introduced 1779. It flowers in auguſt and ſeptember[p].

53. Native of America, and New Caledonia.

54. Native of Virginia.

55. The whole plant is tomentoſe, like *Verbaſcum* or Mullein. The corolla is white.——Native of Perſia, on the ſhore of the Caſpian[q].

56. This is an annual plant, with ſeveral thick herbaceous ſtalks, about two feet long, not twining but bending towards the ground, upon which many of the lower branches lie proſtrate. Leaves ſeſſile. The peduncles come out juſt above the leaves at the ſame joint, and on the ſame ſide; they are about two inches long, each ſuſtaining one large open bell-ſhaped flower, of a fine blue colour with a white bottom, varying to pure white, and ſometimes beautifully variegated with both colours. The white flowers are ſucceeded by white ſeeds; but in the blue ones they are dark-coloured.

[Native of Barbary, Spain, and Sicily. (Mr. Miller ſays Portugal). Cultivated 1629, by Parkinſon[r]; who received the ſeeds (as he ſays) out of Spain and Portugal, from Guillaume Boel.

It is known among the ſeedſmen and gardeners by the name of *Convolvulus minor*.

[Mr. Curtis obſerves, that the whole plant with us is in general hairy, and hence that it does not well accord with Linneus's deſcription. Parkinſon's figure is very hairy, but Mr. Curtis's is perfectly ſmooth.]

57. Root perennial. Stems ſtrong, ſmooth, winding, extending wide, and putting out roots at the joints. Flowers large, ſulphur-coloured, on long peduncles from the ſide of the ſtalks, each ſupporting one flower, with a large ſwelling calyx. Capſule large, ſmooth, oval, three-celled, with one large ſmooth ſeed in each.—Native of America near the ſea. Mr. Miller received the ſeeds from Campeachy.

[Swartz deſcribes the ſtem as creeping, jointed, rooting, angular, compreſſed, ſubdivided. Leaves terminating, crowded, oblong, ſometimes bluntly ſagittate, entire, emarginate, ſcarcely veined, very ſmooth, ſomewhat ſucculent, on longiſh petioles. Peduncles from the axils of the terminating petioles, the length of the leaves, erect, one-flowered. Flowers rather large, whitiſh.—Native of the ſandy coaſts of Jamaica.

58. One of the ſmaller plants. Stem filiform, ſmooth and even. Leaves cordate, haſtate, ſagittate, with ears at the baſe recurved on both ſides, ſometimes toothed, ſmooth, acuminate. Peduncles two-flowered, ſhort, with pedicels longer than the petiole. Calyx rounded[s]. Corolla pale purple. Capſule ſmooth, two-celled, two-ſeeded.

Native of the Eaſt Indies, China and Cochinchina, where it is a common pot-herb[t].

59. This differs from *C. Batatas*, in having the leaves heart-ſhaped entire, three and five-lobed, not narrowed in the middle, ſo as to become ſagittate. The roots are often as big as the fiſt, tubercled, fleſhy like the Batatas, eſculent, very ſoft and ſapid. It flowers very ſeldom.—Japan, whither it was brought by the Portugueſe. Far from the coaſt it is not known[u].]

60. This is an annual plant, riſing with ſlender, ſtiff, twining ſtalks, eight or nine feet high. Flowers many together, at the end of ſtrong peduncles; corolla purple.

[A plant not large. Peduncles and ſtem rough with yellowiſh hairs ſtanding out. Leaves a little villoſe; the primary ones cordate-roundiſh, the ſecondary properly cordate, thoſe next the flowers often haſtate. Peduncles naked, longer than the leaves; the flowers alternate, pedicelled, with very ſmall lanceolate involucres to each pedicel. Found in the Eaſt Indies by Oſbeck[x].]

Mr. Miller ſays that the ſeeds were ſent him from Jamaica by Dr. Houſtoun.

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[e] Linn. ſyſt. [f] Hort. kew. [g] Jacquin. [h] Vahl.
[i] Hort. kew. [k] Linn. ſpec. [l] Linn. ſuppl.
[m] Hort. kew. [n] Linn. ſuppl. [o] Ibid.

[p] Hort. kew. [q] Linn. [r] Hort. kew. [s] Linn. ſpec.
[t] Loureiro. [u] Thunberg. [x] Linn. ſpec.

61. Roots ſmall, white, ſtringy, ſending out ſeveral weak trailing branches. Leaves the ſize of leſſer Celandine, alternate, on long petioles. The flowers are produced on the ſide of the branches at each joint; they are of a reddiſh purple colour, appear in july, and are ſucceeded by round capſules, having three cells, with one black ſeed in each. Every part of the plant abounds with a milky juice.

[Leaves ſometimes heart-ſhaped; in open ground the ſtalks are ſhort, and lie flat ſpreading in a ſemicircular form; but among buſhes it ſometimes grows to ſome length unbranched, and does not flower[y]. Two cordate-oblong, emarginate bractes, at the baſe of the flower, incloſing the calyx, and juſt longer than it. Calyx rather five-leaved; leaflets oblong, the innermoſt involving the fruit, and each ſucceſſively wrapping round thoſe beneath it[a].

Sea coaſts of Friſia; Piedmont; Carniola. Coaſt of Norfolk, frequent. Eſſex, Kent, *&c.* North coaſt, and Scotland.—Called *Scottiſh Scurvy-graſs*, and improperly *Sea Colewort.*

Half an ounce of the juice, or a dram of the powder is an acrid purge. The leaves applied externally are ſaid to diminiſh dropſical ſwellings of the feet[a].

62. Stem ſuffruticoſe, procumbent, creeping, ſomewhat villoſe, red, long, leaves blunt at both ends, often two-lobed-pandurate, emarginate, thick, tomentoſe. Flowers axillary: corolla purpliſh[b].

Native of the Eaſt Indies, China and Cochinchina, and the eaſtern coaſt of Africa. Introduced 1770, by Monſ. Richard. It flowers in june and july, and is annual[c].]

63. Stems perennial, trailing and ſpreading to a great diſtance. Flowers large, purple, produced by threes on very long peduncles. Capſules large, oval, three-celled, with one ſeed in each cell.

Native of South America and the Weſt India iſlands, near the ſhore.

[Browne ſays that it is common near the ſea in Jamaica; that the leaves are beautifully veined; that the whole plant is very milky; and that the root is a ſtrong purgative, ſometimes uſed with ſucceſs in hydropic caſes. He calls it *purging Sea-bindweed.* Introduced before 1726, by Mark Cateſby[d].

64. Leaves ſomewhat hairy, lower cordate, upper obtuſe. Flowers in threes, parallel, ſeſſile. Involucre ſix-leaved. Corolla large.—Native of the Eaſt Indies. Annual[e].

65. Native of America.]

66. This riſes with a ſtrong winding ſtalk to the height of twenty feet, dividing into ſeveral ſmaller. The flowers are large, purple, on long peduncles; and are ſucceeded by large roundiſh ſeed-veſſels, having three cells, in each of which is lodged a ſingle ſeed. It grows naturally at La Vera Cruz in New Spain, whence the ſeeds were ſent by Dr. Houſtoun.

67. This riſes with a ſlender twining ſtalk ten feet high. The flowers are produced in ſmall cluſters on long peduncles; they are yellow, and are ſucceeded by three-cornered ſeed-veſſels, having three cells, with two ſeeds in each. It is an annual plant. The ſeeds were ſent from Carthagena in New Spain, where this plant grows naturally.

68. This alſo is an annual plant, with twining ſtalks riſing ſeven or eight feet high. The flowers come out at every joint on long ſlender peduncles, each ſupporting a large purple flower, with the calyx cut almoſt to the bottom into ten parts. It was ſent from the iſland of Barbuda.

69. Stalks ſlender twining, eight or ten feet high. Leaves ſhaped like thoſe of Convolvulus ſepium, n. 2.; but the peduncles, which are pretty long, have many purple flowers on each, growing in bunches. Capſules three-cornered, three-celled, with one ſeed in each cell. It is an annual plant, and grows naturally in Jamaica.

[This ſeems to be the ſame with C. umbellatus, n. 18. The ſame figure of Plukenet is referred to by Mr. Miller here and by Linneus there; but Sloane ſays, the flowers are yellow.]

70. This riſes with a very ſlender twining ſtalk four or five feet high. The flowers are blue. It is an annual, and the ſeeds were ſent to Mr. Miller from Jamaica, where it grows naturally.

[It may be doubted whether this be the ſame with the hederaceus of Linneus, n. 10.]

71. Stalk twining, ſeven or eight feet high. Leaves on very long petioles, and flowers on long peduncles. Seeds large, and covered with a fine down. This alſo is an annual plant, and one of the moſt beautiful ſorts, the flowers being very large, and of a fine roſe colour. It grows naturally in Jamaica, whence the ſeeds were ſent to Mr. Miller by Dr. Houſtoun.

72. Stalk ſlender, twining, five or ſix feet high. Flowers on long ſlender peduncles. Corollas white with purple bottoms. It grows naturally in Africa, whence the ſeeds were ſent to the royal garden at Paris, and thence to Mr. Miller in 1730.

[73. Native of New Zealand.

74, 75. Natives of the iſland of Tanna in the South Seas[f].

76. This is an annual, and a native of the Eaſt Indies. It flowers in july and auguſt, and was introduced 1778 by Sir Joſeph Banks, Bart.[g]

77. Stem large, ſhrubby, branched, ſcandent, ſmooth. Leaves alternate, petioled. Flowers yellow, large. Peduncles many-flowered. Corolla bell-ſhaped. Anthers filiform, ſpiral. Capſule two-celled, two-ſeeded. Native of the woods of Cochinchina.

78. Stem twining, perennial, round, extremely hairy, branched. Lobes of the leaves ovate, ſharpiſh, quite entire. Flowers white, large, axillary: common peduncle long, ſolitary; proper none. Common calyx twelve-leaved, bell-ſhaped; leaflets ovate-oblong, unequal, hairy, containing about ten ſeſſile florets. Calycine leaflets lanceolate, hairy, upright, Corolla tubular, five-cleft; ſegments acute, hairy, cloſed. Anthers bifid at the baſe. Style longer than the corolla: ſtigma capitate. Capſule two-celled, two-ſeeded. Seeds round on one ſide, angular on the other. Native of Cochinchina[h].

79. Stem twining, hairy. Leaves remote, quite entire, ſmooth on the upper, villoſe on the lower ſurface, ears rounded, having ſometimes one tooth behind: petiole only half the length of the leaf. Peduncles ſhorter than the petiole, villoſe. Calyxes hairy, with acuminate leaflets, patulous at the tip.

Native of Arabia.

Its place is between the 7th and 8th ſpecies.

80. Stem ſhrubby, erect, branched at bottom. The branches as they grow old become ſpiny, leafleſs, barren, ſubvilloſe. The flowering branches proceed from the baſe of theſe, are quite ſimple, a ſpan and more in length, erect, round, unarmed, rigid, towards the end flexuoſe and covered with a very ſoft ſhagginefs. Leaves alternate; the lower ones lanceolate, attenuated at the baſe, ſometimes ſeveral, heaped at the exit of the branches from the ſame point, unequal: the upper ones lanceolate-linear, ſeſſile, acute: the floral ones a little broader than the reſt, all thickiſh, veinleſs, tomentoſe but not ſhining like ſilk. Peduncles almoſt from top to bottom from all the axils, ſolitary, half the length of the leaf, many-flowered. Flowers ſix to eight, ſeſſile. Involucre ſix-leaved, the length of the calyx: the three outer leaflets ovate, acute; the three inner lanceolate: all on the outer ſide, together with the peduncles and calyxes, extremely hirſute with long, very ſoft, ſhining hairs: on the inner ſide only ſomewhat hairy. Two bractes beneath each flower. Calycine ſegments linear. Corolla bell-ſhaped, hairy on the outſide, the colour of C. Cneorum. Filaments unequal: anthers linear. Style bifid, with filiform ſegments: ſtigmas acute.

It differs from C. Cneorum in the older branches becoming ſpiny, and in having axillary flowers.

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[y] Woodw. mſs.
[z] Stokes in Withering.
[a] Withering.
[b] Loureiro.
[c] Hort. kew.
[d] Ibid.
[e] Linn. ſuppl.

[f] Forſter.
[g] Hort. kew.
[h] Loureiro.

Conv. ſpinoſus of the ſupplement is diſtinguiſhed from this in having the branches and leaves ſilky with minute hairs, the ſpines axillary, and the peduncles one-flowered towards the top. Conv. ſericeus of Burmann, *ind.* 49. *t.* 19. *f.* 3. probably is the ſame with this. Native of the lower Egypt and mount Sinai.

81. This is a rigid ſhrub, very much branched, diffuſed, and a foot high; the branchlets ſomewhat ſilky. Leaves ſeſſile on the branches and branchlets, ſcattered, ſilky, entire, ſmall. Flowers from the lower axils of the branchlets, commonly ſolitary, ſeldom two together. Two oblong, ſharpiſh bractes at the baſe of the calyx, a little broader at the end and reflex. Calycine leaflets hirſute, the two outer oblong, rigid, larger than the reſt. Corolla hirſute, ſmall. Stigmas two, capillary.

Native of Arabia.

The place of theſe two is between the 45th and 46th ſpecies.

82. Leaves remote, erect, oblong, cordate at the baſe with two ſmall rounded lobes on each ſide, but ſometimes entire, thickiſh, ſmooth, nerved: petiole longer than the leaf. Peduncles axillary, ſolitary or ſometimes in pairs, the length of the petioles; towards the top there is a lanceolate leaf. Calyx ſmooth, with oblong leaflets. Stigma not bifid, but capitate. Corolla and habit of Conv. Soldanella.

Native of the ſandy ſea ſhore near Naples, at Bagnoli; flowering in auguſt and ſeptember.

83. The whole plant is ſmooth. Stems filiform, purpliſh, flexuoſe. Leaves heaped, veinleſs, paler underneath: petiole longer than the leaf. Peduncles in pairs or ſolitary, axillary, equalling the petiole. Calycine leaflets equal, oblong, ſubmembranaceous. Tube of the corolla a little enlarged gradually at top. Stigma capitate.

The appearance is the ſame as in the foregoing but it is ſmoother, the leaves are ſeveral heaped together, and the ſtem decumbent, but it differs principally in its tubular corollas, but not bell-ſhaped, as in C. Imperati.

Native of the Azores iſlands.

The place of theſe two is between the 60th and 61ſt ſpecies.

84. This is wholly ſmooth, and allied to C. ſepium. Leaves acute, on a petiole the length of the leaf. Peduncle ſhorter than the petiole, thicker, bracted towards the middle, thicker under the flower. Calycine leaflets oblong, the two outmoſt ſmaller, all ſubretuſe, mucronate. Corolla of C. ſepium. Stigma capitate.

It varies with ovate leaves, having ſtraight ſhorter rounded lanceolate ears, or a little divaricate and lanceolate on the ſame plant. Conv. ſepium differs with ſubangular ears, four-cornered peduncles, and large cordate bractes at the baſe of the calyx.

Native of Spain, by the lake Albufeda in the kingdom of Valencia.

The place of this is between the 2d and 3d ſpecies.

85. Stem herbaceous, twining, pale, with plenty of ferruginous hairs ſcattered over it. Leaves on ſhort petioles, ſharp, with two-toothed ears. Peduncles axillary, ſolitary, with three ſpreading pedicels at top; both hairy. Two lanceolate bractes at the baſe of the pedicels, and two ſimilar ones on each lateral pedicel towards the flower; the middle pedicel ſhorter, without any bracte. The three outer leaflets of the calyx very hirſute, ovate, acuminate. Corolla almoſt like that of Scammony, yellowiſh, having on the outſide a lanceolate purpliſh line with a pile of yellow hairs to each lobe of the border. Style bifid. Probably native of the Levant.

86. Stem twining, herbaceous, round. Leaves rounded at the end, mucronate, gradually wider towards the baſe; the ears rounded behind. The petiole only one-fourth of the length of the leaf. Peduncle the ſame length with the leaves. One of the pedicels ſhorter and thicker, with two bractes at the baſe, the other longer with two briſtle-ſhaped bractes in the middle. Calycine leaflets ovate, acute; the outer ones more villoſe. Corolla villoſe on the outſide. Style bifid. Capſule ſmooth, globular.

Native of America.

87. Stem twining, rooting at bottom, muricated upwards with little ſpines, and having minute hairs thinly ſcattered over it at top, even. Leaves thickiſh, veinleſs, ſmooth; the lower ones an inch and half long, lanceolate-oblong, acute at the baſe; the upper ones on ſhorter petioles, an inch in length, lanceolate, rounded at the end, mucronate. The lower petioles a little ſhorter than the leaf. Peduncles ſolitary, with two minute bractes above the middle; ſomewhat villoſe at top. Calycine leaflets ſmooth, the three outer acute, mucronate, the length of the corolla, nerved; the two inner linear-lanceolate, attenuated, the ſame length with the outer ones. The corolla has five lines on the outſide, which are cloſely beſet with fulvous, ſhining hairs. Stigma capitate. Capſule ſmooth, ſhorter than the calyx.

Native of the Eaſt Indies, where it was obſerved by Koenig.

The proper place of theſe three is between the 5th and 6th ſpecies.

88. Stem herbaceous, filiform, twining, branched. Leaves on very ſhort petioles, diſtant, two inches and more in length, quite entire except at the baſe, veined, tender, very ſmooth, a little narrowed both ways; the ears having three or four mucronate teeth on each ſide. Peduncles axillary, filiform, one-flowered, thickened at top. Bractes in pairs, oppoſite, ſubulate, above the middle of the peduncle. Calycine leaflets oblong, mucronate, ſmooth. Stigma ſimple, bluntiſh.—It is nearly allied to Evolvulus tridentatus.

Native of Guinea, and found there by Iſert.

89. Stem filiform, twining, ſmooth, branched. Leaves petioled, an inch or rather more in length; ears lanceolate, acute, ſometimes ſtraight, ſometimes a little reflex, uſually quite entire, but having, though very ſeldom, an obſcure toothlet behind. Peduncles filiform, a little longer than the leaf, having two ſhort briſtle-ſhaped bractes in the middle. Leaflets of the calyx equal, oblong, ſmooth. Corolla bell-ſhaped, ſmooth. Stigma bifid.—Native of the Eaſt Indies.

It differs from C. japonicus in having a branched ſtem, blunt leaves with the ſide-lobes ſcarcely a quarter of an inch in length, and the calycine leaflets rounded at the end and mucronate, not acute.

The proper place of this and the foregoing ſort is between the 6th and 7th ſpecies.

90. Stem twining, round, ſmooth. Leaves ſcarcely an inch long, ſubcordate at the baſe; the middle lobe lanceolate and quite entire, the ſide ones roundiſh, unequally four or five-toothed: petioles filiform, ſhorter than the leaf, often ſubmuricate towards the baſe. General peduncles ſpreading, thicker and a little longer than the petiole; partial peduncles in threes, the middle one-flowered, the ſide ones with two or three pedicelled flowers: both muricate, rigid. Calycine leaflets oblong, obtuſe, mucronate. equal.

Native of the Eaſt Indies: found by Schumacher. Its proper place is between the 7th and 8th ſpecies.

91. Stem herbaceous, twining, with ſhort hairs thinly ſcattered over it. Leaves two inches long, ſmooth, veined underneath; the middle lobe lanceolate, attenuated, quite entire, mucronate, the ſide ones broader, rounded upwards, entire, or retuſe-ſublobate outwards, the lobes roundiſh: petioles ſhorter than the leaf, pubeſcent. Peduncles the length of the leaf, ſolitary. Two oppoſite, lanceolate, acute bractes a little below the calyx. Calyx pubeſcent, the two outer leaflets much broader than the inner ones, oblong, bluntiſh, nerved, pubeſcent: the latter incloſed by the former as between two bractes, lanceolate and a little ſhorter. Corolla villoſe on the outſide, tender, ſilky, with a five-cleft border. Stigma capitate, two-lobed.—The form of

the leaves is nearly the ſame as in C. platanifolius, but the ears are not toothed only retuſe on the ſides, the peduncles are one-flowered, not two or three-flowered; but it differs chiefly in having the two outer leaflets of the calyx broad.

Found in the Eaſt Indies by Koenig.

92. Corolla white with a violet purple baſe, hairy on the outſide. The bractes, calyx, and corolla as in the foregoing ſpecies; from which however it differs in having a villoſe ſtem; leaves cordate at the baſe, acute, mucronate, not attenuated, nearly equal in length and breadth, one, two or three-lobed at bottom, villoſe on both ſides, very ſoftly villoſe, hoary and obſcurely veined underneath, the younger ones ſilky; and the peduncles longer.

Found in the Eaſt Indies, by Schumacher.

93. The whole plant quite ſmooth, except the petioles. Stem round. Leaves two inches long and more, glaucous-green underneath, with purpliſh veins; lobes lanceolate, the middle one longer, broader, quite entire, acuminate; the ſide ones narrower, attenuated, with a ſmaller, broader lobe at bottom without on each ſide, having an angular tooth, and being rounded behind. Petioles ſhorter than the leaf, beſet with a few ſcattered hairs. Peduncles ſolitary, ſhorter than the leaf; the lower three-flowered, the middle two-flowered, the uppermoſt one-flowered, thickened at top. Calycine leaflets oblong, ſubmembranaceous, ending in a briſtle. Stigma capitate. It differs altogether from Conv. Batatas in the ſmoothneſs of the ſtem, and the form of the leaves.

Native of America.

94. Stem twining, with a few minute hairs ſcattered over it, preſſed cloſe to it, and viſible only with a magnifier. Leaves four inches long, three inches or more wide at the baſe, three-lobed or entire, very ſmooth, nerved, a little paler underneath, ſharp, quite entire, the ſide-lobes lanceolate, the middle one ovate, attenuated: petioles longer than the leaf. Peduncles axillary, the length of the petioles. Flowers about five, alternate: pedicels an inch and half long, a little thicker under the leaf. At the baſe of each pedicel a lanceolate attenuated bracte, very finely nerved and ſmooth. Calycine leaflets lanceolate, attenuated, tender, very finely nerved, quite ſmooth, the two inner ones a little ſhorter. Corolla large, bell-ſhaped, purple with a pale baſe, with five paler, lanceolate, attenuated rays, running to the edge. Stigma capitate.

Native of the iſland of Santa Cruz, in the Weſt Indies.

The four laſt have their place between the 7th and 8th ſpecies.

95. Stem twining, tender, pubeſcent at top. Leaves an inch long, obſcurely ſeven-nerved, a little acuminate, blunt with a ſmall point, the upper ſurface thinly villoſe when viewed with a magnifier, paler and more villoſe underneath: petioles the length of the leaves. Peduncles the length of the petiole, thickened at top, two-flowered, ſeldom one-flowered: pedicels a little ſhorter than the peduncle; one ſhorter, thicker, without any bracte, the other more tender, with two bractes in the middle, both turned back when ripe. Calycine leaflets oblong, obtuſe, ſcarcely appearing hairy with a magnifier; when fruit-bearing ſmooth. Corolla bell-ſhaped, ſix times as large as the calyx, ſmooth. Stigma capitate.

Native of the iſland of Java.

96. Stem herbaceous, twining, pubeſcent, round, ſlender. Leaves two inches long, remote, quite entire, with a rounded mucronate point, ſmooth on both ſides except the rib, ſimply veined: petioles the length of the leaves, pubeſcent. Peduncles ſolitary, pubeſcent: pedicels in threes, the ſide ones jointed, one of them often two-flowered; the middle one ſhorter, a little thicker, without any bracte. On the lateral pedicels at the joint are two bractes which are oblong, concave, ſmall, villoſe, deciduous. Calycine leaflets oblong, obtuſe, equal, concave; the two outer villoſe and ſomewhat hoary. Corolla bell-ſhaped, twice as long as the calyx, white with a duſky purple baſe, with five lanceolate paler rays above running to the edge with five deeper coloured ſtreaks. Stigmas capitate, two-lobed.

Found by Koenig in the Eaſt Indies.

97. Stem twining; branched round, purpliſh, villoſe, rugged. Leaves two inches long and more, quite entire, veinleſs, nerved, on the upper ſurface appearing ſubvilloſe to a magnifier, on the under very ſoft with a cloſe pile; petiole only half the length of the leaf. Peduncles axillary, a ſhort ſpan in length, round, villoſe, rugged, floriferous at top. Pedicels very ſhort, branched, faſtigiate. At the baſe of the head of flowers is a lanceolate leaf on each ſide. Bractes linear, the length of the calyx. Calycine leaflets linear-lanceolate, hairy-tomentoſe, as are alſo the bractes. Lobes of the corolla acuminate. Stigmas two, reflex.

Native of Cayenne.

98. The whole of this plant is hiſpid, eſpecially the branches towards the top, the involucres and calyxes; the hairs are long, diſtinct, placed on minute dots, of a dirty white colour. Stem twining, herbaceous, rugged. Leaves from two to three inches long, acute, ciliate, paler underneath, obſcurely nerved: petiole a little ſhorter than the leaf. Peduncles axillary, ſolitary, a little ſhorter than the leaves, without any joint. Flowers five ſeſſile, collected into a head. Involucres five-leaved; leaflets the length of the calyx, oblong, acute, ſmooth within. Calycine leaflets ovate-lanceolate, acuminate, ſmooth within, one-third only of the length of the corolla; which is hiſpid on the outſide with long hairs arranged in five lines. Stigma capitate, Capſule ſubglobular, ſhorter than the calyx, with a very even ſurface and ſmooth.

It differs from Ipomæa tamnifolia of Linneus in its large corollas hiſpid on the outſide, not minute and ſmooth as in that, and in the calycine leaflets being ovate not linear-lanceolate: it alſo comes from a different country. I. tamnifolia of Burm. ind. may perhaps be the ſame with this ſpecies of Convolvulus.

Native of the Eaſt Indies. Found by Koenig.

99. The whole of this plant is rough with hairs. Stem twining. Leaves from two to three inches long, attenuated, quite entire, a little paler underneath. Petiole only half the length of the leaf. Pedicels umbelled, the length of the peduncle. Calycine leaflets lanceolate, attenuated, ſmooth within, lax. Corolla ſmooth. Stigma capitate. It is eaſily known from the other ſpecies with entire leaves by its ſhaggineſs.

Native of the Eaſt Indies: obſerved by Dahl.

100. Stem weak, ſlightly villoſe at top. Leaves an inch long: petiole the length of the leaf, villoſe, filiform. Peduncles the length of the leaves, filiform: pedicels umbelled; the lateral ones ſomewhat branched. Calycine leaflets ovate, acuminate, ſmall. Corolla blue, ſmooth, twice as long as the calyx, five-cleft. Stigma bifid, with the ſegments revolute.

Native of Java.

The proper place of the ſix laſt plants is between the 15th and 16th ſpecies.

101. The ſtem, together with the petioles, peduncles and calyxes villoſe. Leaves an inch long, a little acuminate. Peduncles three or four times longer than the leaf, bifid: partial peduncles three or five-flowered. Bractes linear-lanceolate at the baſe of the partial peduncles. Calycine leaflets tender, the two outer cordate, one lanceolate, the two inner ſubmembranaceous, ſmooth, only half the ſize, mucronate. Corolla bell-ſhaped, violet with five lanceolate paler rays. Stigmas two reflex.—It varies with ſmoother and hairy leaves.

Native of the iſland of Santa Cruz.

This comes in between the 16th and 17th ſpecies.

102. Stem herbaceous, twining, ſmooth. Leaves two inches long, quite entire, ſimply veined, the veins underneath villoſe when examined with a magnifier; the under ſurface is paler; they are rounded at the end and mucronate; the lobes are

rounded behind, and are ſometimes, but ſeldom, obſcurely angular. The petiole is ſhort. Peduncles ſhorter than the leaf: pedicels angular, without bractes, thickened towards the top, equal, almoſt the length of the peduncle. Calycine leaflets blunt. Corolla three times as long as the calyx; lobes hairy at the tip. Stigma capitate.

Native of the Eaſt Indies: obſerved by Koenig.

103. Stem twining, villoſe. Leaves from two to three inches long, an inch or rather more wide at the baſe, mucronate, frequently ſomewhat villoſe on the upper ſurface, hoary and very ſoft on the under. Petiole one-third of the length of the leaf, hoary. Peduncles axillary, ſolitary. Pedicels very many, ſubumbelled; with minute ſcales at the baſe inſtead of bractes; they are oblong, ferruginous and deciduous. Calycine leaflets pubeſcent at the baſe, rounded at the tip, equal. Corolla almoſt funnel-ſhaped, three times as long as the calyx, with five ſlender villoſe lines on the outſide: lobes acute, bearded at the tip. Stigma capitate, two-lobed. Capſule ovate, ſtriated, ſmooth.—It has the habit of Conv. umbellatus, but has ſmaller, narrower leaves. The variety differs ſcarcely in any thing elſe but in its ſmoothneſs, and the leaves being ſtill narrower.

Native of the Eaſt Indies, and the iſland of Java.

Its place is between the 17th and 18th ſpecies.

104. Stem pubeſcent, rendered triangular by three ſubfoliaceous very ſlender decurrent lines. Leaves two inches long and more, each ſurface has hairs ſcattered over them, which are preſſed cloſe, on the upper ſurface they are not to be ſeen without a magnifier, but on the lower they are more apparent. Petiole villoſe, ſhorter than the leaf. Peduncle the length of the leaves, three or five-flowered: lateral pedicels two-flowered, the middle one one-flowered, ſhorter; they gradually thicken towards the top. Bractes at the baſe of the pedicels, ovate, concave, tender, acute, mucronate, coloured, deciduous, pubeſcent. The two outer calycine leaflets bracte-ſhaped, ovate, acute, mucronate, ſilky: the inner ones ſmooth, ſhorter, rounded at the tip. Stigma capitate.—This is very nearly allied to Conv. anceps, but the leaves are not blunt, and the wings on the ſtem are only one-third of the width.

Native of the iſland of Santa Cruz.

Its proper place is between the 20th and 21ſt ſpecies.

105. Stem ſlightly pubeſcent, round, branched. Leaves tender, hoary; the lower an inch and half long, broader, ſagittate-ovate, crenate-ſubrepand; the upper two inches long, narrower, more attenuated, obſcurely crenate; ears ſtraight, ſubtruncate behind, one-toothed. Petiole ſhorter than the leaf. Peduncles the length of the leaves, pubeſcent, moſt of them five-flowered, but the uppermoſt three-flowered: pedicels in threes, umbelled, the lateral ones on the lower peduncles bifid. There are two linear bractes at bottom on the lateral pedicels, but there is none on the middle one. Calycine leaflets oblong, blunt, mucronate, ſomewhat villoſe. Corolla twice as long as the calyx, with the lobes bearded at the tip. Stigma bifid.—Suppoſed to be a native of the iſle of Bourbon.

106. Stem twining. Leaves nerved, mucronate; ears ſtraight, oblong, obtuſe. Petiole one-third of the length of the leaf. Peduncles ſolitary, the length of the leaves, having a pair of briſtle-ſhaped bractes towards the tip. Calycine leaflets oblong, ſharpiſh, almoſt equal; the two inner ones ſmooth. Corolla half as long again as the calyx, marked on the outſide with five lanceolate, villoſe, ſilky lines; the lobes bearded at the tip. Stigma ſlightly bifid.—Suppoſed to be a native of Braſil. Both theſe were collected by Monſ. Thouin; and their place is between the 30th and 31ſt ſpecies.

107. Stem round, twining. Leaves five-lobed; lobes oblong, the middle one ſcarcely an inch in length, the lateral ones gradually ſmaller and narrower, ſmooth, nerved, very finely veined, mucronate, appearing very neatly ſerrulate when viewed with a glaſs. Petioles filiform, an inch long. In the axils are two ſmall petioled leaves, of the ſame ſtructure with thoſe on the ſtem, almoſt as in Conv. cairicus. Peduncles the length of the petioles, filiform, a little thickened at top, without any bractes. Calycine leaflets oblong, obtuſe, ſmooth. Corolla almoſt bell-ſhaped, ſmooth, purple. Stigma capitate, two-lobed. It is allied to C. cairicus, but has ſmaller five-cleft leaves with blunt lobes, and one-flowered peduncles.

Native of the iſland of Santa Cruz.

Its place is after the 32d ſpecies.

108. Stem twining, round, ſmooth. Leaves petioled, digitate: leaflets five, the middle one ſubovate, two inches long or a little more, the lateral ones gradually ſmaller and narrower, all ending in a long point, ſharp at the baſe, quite ſmooth on both ſides, veined. Peduncles longer than the leaf, round, ſmooth. Peduncles umbelled, the lateral ones divided, a little thicker below the flower; at their baſe an ovate-cordate, acuminate, ſolitary leaf. Calyx ſmooth; the leaflets ovate, membranaceous at the edge, two large. Corolla funnel-ſhaped. Stigma capitate, ſlightly two-lobed.—It approaches to Conv. glaber of Aublet (Guian. t. 53.), but ſeems to differ in having the leaves acuminate but not attenuated, with more and ſhorter pedicels, and the tube of the corolla nearly of the ſame diameter throughout, not gradually enlarged towards the top.

Its country is unknown. Its place is between the 39th and 40th ſpecies.

109. The whole of this plant is ſmooth. Stem angular, twining. Leaves petioled: leaflets five or ſix, very narrow, quite entire. Peduncles axillary, ſhort, uſually four or five-flowered, the upper ones ſometimes one-flowered. Calyx ſmooth, with oblong leaflets. Stigma acute.

Native of the Weſt Indies.

Its place is after the 40th ſpecies.

110. This differs from Conv. Cneorum, which it otherwiſe reſembles, in being wholly covered with a lanuginous ſhaggineſs, inſtead of ſilvery-ſhining appreſſed ſcarcely diſtinct hairs, as that is; in having linear remote leaves, not widening towards the outſide, linear-ſubulate calycine leaflets, and ſubſeſſile flowers. The corolla and ſtigma as in C. Cneorum.

Native of Spain.

Its place is after the 46th ſpecies[1].]

PROPAGATION AND CULTURE.

1, 2. Theſe are troubleſome weeds in gardens, and ſhould be rooted out with great care. Every ſmall piece of the root will grow, and therefore it is difficult to deſtroy them. With reſpect to the ſecond ſpecies, Mr. Miller obſerves, that being generally among trees and ſhrubs, or under hedges, the roots are ſo intermixed, that it cannot eaſily be extirpated; but in an open clear ſpot of ground, where the plants are carefully hoed down for three or four months, they may effectually be deſtroyed; for when the ſtalks are broken or cut, a milky juice flows out, and the roots are ſoon exhauſted and decay.

[On the contrary Mr. Curtis remarks of the firſt ſpecies, which is the weed that infeſts arable lands, that the more he cut and hoed it, the more it ſpread and the faſter it grew. In effect, it cannot be eradicated, without repeated ploughing in dry weather, and then picking out the roots and burning them.]

3. Scammony is a hardy plant, and will thrive very well in the open air in England, on a dry ſoil. Sow the ſeeds in the ſpring on a border of light earth; keep the plants clean from weeds, and thin them to the diſtance of three feet. The ſtalks decay in autumn, but the roots will abide many years.

12. Purple Bindweed, commonly called by gardeners *Convolvulus major* is propagated by ſowing the ſeeds in the ſpring, upon a warm border, where the plants are deſigned to remain. Some tall ſtakes muſt be placed by them, for the ſtalks to twine

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[1] Vahl.

about, otherwiſe they will ſpread on the ground, and make a bad appearance.

12. β. 11. The more tender varieties and the eleventh ſort muſt be brought forward on a hot-bed, and planted out on a warm border towards the end of may.

15. Spaniſh Potatoe is cultivated in warm climates by the roots, in the ſame manner as our common Potatoe, but requires much more room, for the trailing ſtalks extend four or five feet every way, ſending out large tubers, forty or fifty of which are produced from a ſingle root. In England, the roots muſt be planted on a hot-bed in the ſpring, and if the plants are kept covered in bad weather with glaſſes, they will produce flowers, and many ſmall roots from the joints; but if they are expoſed to the open air, they ſeldom make much progreſs.

20. Canary Bindweed ſometimes ripens ſeeds here, but being eaſily propagated by layers or cuttings, the ſeeds are not much regarded. Thoſe plants, however, which are raiſed from layers or cuttings, do not produce ſeed, whereas thoſe which come from ſeeds ſeldom fail.

If the young ſhoots are laid down in the ſpring, they generally put out roots in three or four months; then they be taken from the old plant, and each put into a ſeparate pot filled with light earth, and placed in the ſhade till they have taken new root; after which they may be placed with other hardy green-houſe plants till autumn, when they muſt be removed into the green-houſe, and treated as Myrtles, &c. The tender cuttings planted during any of the ſummer months in pots filled with light earth, plunged into a moderate hot-bed, and ſhaded from the ſun, will take root, and may be treated as the layers.

The leaves continuing green all the year, this plant makes a pretty variety during the winter in the green-houſe.

6, 10, 13, 14, 17, 18, 19, 21—26, 28, 30, 31, 35—41, 57, 58, 60, 62—71, 76—81, & 85—109. Being natives of warm climates, chiefly of the Eaſt and Weſt-Indies, are tender. When raiſed from ſeeds, they muſt be ſown on a hot-bed in the ſpring, and when the plants are fit to remove, they muſt be tranſplanted each into a ſeparate pot filled with light earth, and plunged into a moderate hot-bed, obſerving to ſhade them from the ſun till they have taken new root; then they ſhould have a large ſhare of air admitted to them every day, to prevent their drawing weak, and alſo moderate waterings every other day. When the plants are become too tall for the hot-bed, they muſt be ſhifted into larger pots, and placed in the bark-ſtove, where if they are allowed room they will flower; but they rarely produce ſeeds in England. Many of them therefore are continued by cuttings.

29. C. Jalapa, the root of which is the true Jalap, being a native of South America, muſt be preſerved in the bark-ſtove. It may be raiſed from ſeeds on a hot-bed, the young plants being removed into pots muſt be plunged into the bark-bed, and treated in the ſame manner as the laſt mentioned ſet of plants, with this difference only, that as this has large, fleſhy, ſucculent roots, it muſt have but little water, eſpecially in winter. The proper ſoil for the Jalap is a light ſandy loam, not too rich, and the plants ſhould always remain in the bark-ſtove. [It may be alſo increaſed from ſlips or cuttings.]

32. Mallow-leaved Bindweed, and the variety ſeldom produce ſeeds in England, but creeping at the root are propagated by off-ſets or ſhoots taken from the old plants. The beſt time for parting and tranſplanting this ſort is about the beginning of may, when it may be taken out of the green-houſe, and expoſed to the open air; but the young plants ſhould be placed under a frame, and ſhaded from the ſun till they have taken new root: they may then be gradually hardened to the open air during the ſummer; but in autumn they muſt be placed in the green-houſe, and treated in the ſame way as Canary Bindweed, n. 20.

44. If the ſeeds of Sicilian or ſmall-flowered Bindweed are permitted to ſcatter, the plants will riſe in the ſpring, and require no other culture but to keep them clean from weeds: or if the ſeeds are ſown in the ſpring where the plants are to remain, they will flower in june, and the ſeeds will ripen in auguſt.

46. Dwarf Bindweed ſeldom produces ſeeds in England, but the roots propagate in plenty. It prefers a light dry ſoil, and requires no other care but to keep the plants clean from weeds: it may be tranſplanted either in ſpring or autumn.

47. Cneorum or ſilvery-leaved Bindweed will live in the open air in mild winters, if planted in a light ſoil and a warm ſituation, but in ſevere winters it is deſtroyed; ſome of the plants therefore ſhould be kept in pots, and ſheltered under a common frame in winter, where they may enjoy the free air in mild weather, and yet be protected from froſt: in ſummer they may be placed abroad with other hardy exotic plants, where the fine ſilky leaves will make a pretty appearance. This ſort may be propagated by laying down the branches, and alſo by cuttings; but both very ſeldom put out roots the ſame year, and many of them will fail, ſo that the beſt way is to procure ſeeds from Italy; and thoſe plants which come from ſeeds grow much larger than thoſe which are propagated the other ways.

48. Cantabrica or flax-leaved Bindweed is propagated by ſeeds, which muſt be obtained from the countries where it naturally grows; theſe ſhould be ſown upon a warm dry border, where they are deſigned to remain; for as the plants run down with long tap-roots, they will not bear tranſplanting, for I have often made trial of this without any ſucceſs. When the plants come up, they ſhould be thinned where they grow too cloſe, and afterward conſtantly kept clean from weeds, which is all the culture it will require. It flowers in july and auguſt, and the ſtalks decay in autumn; but the roots will laſt ſeveral years, and if they are in a dry ſoil and warm ſituation, will abide through the winter very well without covering.

50. Broom Bindweed may be increaſed and treated in the ſame manner. It muſt have a dry ſoil and warm ſituation to enable it to live through the winter in the open air in England. If the ſurface of the ground about the roots be covered with ſome old tanner's bark, it will preſerve them in the hardeſt froſts.

56. Convolvulus tricolor or trailing Bindweed has been long cultivated as an ornamental plant in the borders of our flower-gardens, under the name of *Convolvulus minor.* It is an annual plant, and is propagated by ſeeds, which ſhould be ſown on the borders of the flower-garden where they are deſigned to remain. The uſual method is to put two or three ſeeds in each place where they are intended to flower, covering them half an inch with earth; and when the plants come up, if the ſeeds all grow, there ſhould be but two left in each place, which will be ſufficient; the others ſhould be drawn out carefully, ſo as not to diſturb the roots of thoſe which are left; after which they will require no other culture but to keep them clean from weeds. If the ſeeds are ſown in autumn, the plants will flower in may; but thoſe which are ſown in the ſpring, will not flower till about the middle of june, and will continue flowering till the froſt ſtops them. The ſeeds ripen in auguſt and ſeptember.

The plants which bear variegated flowers have frequently plain flowers of both colours intermixed with them: theſe ſhould be pulled off as ſoon as they appear, in order to continue the variegated or ſtriped flowers.

61. Soldanella or Sea Bindweed growing naturally on the ſea beach, cannot be long preſerved in a garden.

[Of theſe numerous ſpecies of Convolvulus, the following only will bear the open air, viz. 1, 2, 3, 4, 8, 9, 12, 44, 45, 46, 47, 48, 56 and 61.

Theſe require the protection of a green-houſe: viz. 5, 8, 20, 32, 33, 47, 48, 50, 52: ſome always, and others in ſevere winters only; as 8, 47 and 48.

The reſt, which have been hitherto introduced into culture, will not live in England through the winter, unleſs they are kept in a ſtove: as 6, 11, 14, 15, 18, 21, 23, 26, 29, 37, 41, 62, &c.

Convolvulus. See *Evolvulus*, *Ipomæa*, *Pæderia* and *Polygonum*.

Convolvulus braſilianus. See *Ciſſampelos*.

——— nummularius, &c. See *Evolvulus*.]

CONYZA. (*Either from* κώνωψ *a gnat, becauſe it catches ſmall inſects by its glutinous juice—or* ϖαρὰ τὸ κονίζειν, *from its being covered by a duſty pubeſcence—or* ϖαρὰ τὸ τον κυνὰ ὄζειν, *from ſmelling like a dog. Ray.—From* κνύζα *ſcabies, the itch. Vaill.*)

Lin. gen. n. 950. *Reich.* 1030. *Schreb.* 1286. *Gærtn. t.* 166. *Juſſ.* 180.

Claſſ. 19. 2. Syngeneſia Polygamia Superflua.

Nat. order of *Compoſitæ Diſcoideæ*. *Corymbiferæ* Juſſ.

GENERIC CHARACTER.

Cal. *Common* imbricate, roundiſh, ſquarroſe: *ſcales* acute, the outer ſomewhat ſpreading.

Cor. *Compound* tubuloſe; *Corollets* hermaphrodite numerous, tubular in the diſk. *Females* apetalous, roundiſh in the circuit. *Proper*, of the hermaphrodite funnel-form; *border* five-cleft, patulous.

Of the *Females* funnel-form; *border* three-cleft.

Stam. In the Hermaphrodites *filaments* five, capillary, very ſhort. *Anther* cylindric, tubular.

Pist. In the Hermaphrodites, *Germ* oblong. *Style* filiform, length of the ſtamens. *Stigma* two-cleft.

In the Females, *Germ* oblong; *Style* filiform, length of the hermaphrodite, more ſlender. *Stigmas* two, very ſlender.

Per. none, Calyx converging.

Seeds to the hermaphrodites ſolitary, oblong, *down* ſimple. To the females ſolitary, oblong; *down* ſimple.

Rec. naked, flat.

ESSENTIAL CHARACTER.

Cal. imbricate, roundiſh. *Cor.* of the ray three-cleft. *Down* ſimple. *Recept.* naked.

SPECIES.

1. Conyza ſquarroſa. *Great Fleabane*, or *Plowman's Spikenard.*

Lin. ſpec. 1205. *Reich.* 3. 770. *hort. cliff.* 405. *upſ.* 257. *Hudſ. angl.* 363. *With.* 900. *Lightf.* 473. *Gouan. monſp.* 436. *Villars dauph.* 3. 185. *Scop. carn. n.* 1053. *Pollich. pal. n.* 788. *Neck. gallob.* 348. *Hall. helv. n.* 135. *Allion. pedem. n.* 636. *Krock. ſileſ. n.* 1380. *Fl. dan. t.* 622. (*good.*) *Gærtn. fruct.* 2. 405.

C. major. *Matth.* 870. *Camer. epit.* 612.—vulgaris. *Bauh. pin.* 265. *Raii hiſt.* 292. *Bauh. hiſt.* 2. 1051. 2. *Mor.* 7. 19. 23.

Baccharis monſpelienſium. *Dalech. hiſt.* 917. *Ger. emac.* 792. *Park. theat.* 114. *Pet. brit. t.* 18. *f.* 1. *Blackw. t.* 102.

Leaves lanceolate, acute; ſtem herbaceous, corymbed; calyxes ſquarroſe.

[2. Conyza linifolia. *Flax-leaved Fleabane.*

Lin. ſpec. 1205. *Reich.* 3. 771. *Pluk. alm. t.* 79. *f.* 2. *Mor.* 3. 122. *n.* 45. (*Aſter.*)

Leaves linear-lanceolate, quite entire; corollas radiated.

3. Conyza ſordida. *Small-flowered Fleabane.*

Lin. ſyſt. 752. *Reich.* 3. 771. *mant.* 466.

Gnaphalium ſordidum. *Lin. ſpec.* 1193. *hort. cliff.* 401. *Gouan. hort. monſp.* 435.

Elichryſum ſylveſtre anguſtifolium, capitulis conglobatis. *Bauh. pin.* 264.

Stæchadi citrinæ affinis, capitulis parvis raris, &c. *Bauh. hiſt.* 3. 156. *f.* 1. *Raii hiſt.* 283.

Stæchas citr. ſpuria, longioribus fol. *Barr. ic.* 368. 277.

Ageratum aliud. *Dalech. hiſt.* 778.

Leaves linear, quite entire; peduncles long, three-flowered; ſtem underſhrubby.

4. Conyza ſaxatilis. *Rock Fleabane.*

Lin. ſpec. 1206. *Reich.* 3. 771. *hort. cliff.* 401. *Allion. pedem. n.* 637. *D'Aſſo aragon. n.* 818.

Helichryſum. *Mor. hiſt.* 3. 87. *n.* 18. *ſ.* 7. *t.* 10. *f.* 16. *Bocc. muſ.* 142. *t.* 104.

Helichryſo ſylveſtri, fl. oblongo, ſimilis. *Bauh. pin.* 265. *prodr.* 123. *fig.* 2.

Stæchadi citrinæ alteri inodoræ Lobelii affinis, capitulis brevioribus. *Bauh. hiſt.* 3. 157. *f.* 1. *Raii hiſt.* 282.

St. citr. ſylveſtrior. *Park. theat.* 688. *f. ult. n.* 12.

Leaves linear almoſt entire, tomentoſe underneath; peduncles very long one-flowered; calycine ſcales ſubulate.

5. Conyza caneſcens. *Hoary Fleabane.*

Lin. ſyſt. 752. *ſuppl.* 367.

Leaves linear; panicle faſtigiate.

6. Conyza rupeſtris. *African Fleabane.*

Lin. ſyſt. 752. *Reich.* 3. 772. *mant.* 113. *Vahl ſymb.* 1. 71. *Shaw afr. t.* 176. (*bad*). *Forſk. ægypt.* 148.

Leaves ſpatulate ſomewhat toothed tomentoſe; ſtem underſhrubby; peduncles elongated one-flowered.

7. Conyza ſcabra. *Rough Fleabane.*

Lin. ſyſt. 752. *Reich.* 3. 772. *mant.* 113.

Leaves oblong ſomewhat toothed ſeſſile ſcabrous; peduncles one-flowered elongated.

8. Conyza Aſteroides. *Starwort Fleabane.*

Lin. ſpec. 1206. *Reich.* 3. 772.

Aſter marilandicus, &c. *Pluk. mant.* 29. *t.* 340. *f.* 3.

Leaves broad-lanceolate ſubſerrate; corollas radiate; calyxes ſquarroſe.]

9. Conyza bifrons. *Oval-leaved Fleabane.*

Lin. ſpec. 1207. *Reich.* 3. 773. *hort. cliff.* 405.

Eupatoria conyzoides, &c. *Pluk. alm. t.* 87. *f.* 4.

Leaves ovate-oblong, ſtem-claſping.

[10. Conyza bifoliata. *Two-leaved Fleabane.*

Lin. ſpec. 1207. *Reich.* 3. 773. *Pluk. alm. t.* 177. *f.* 1. (*Eupatoria.*)

Leaves oval toothed; peduncles two-leaved; bractes oppoſite.

11. Conyza pubigera.

Lin. ſyſt. 752. *Reich.* 3. 773. *mant.* 113. *Lour. cochinch.* 495.

Sonchus volubilis. *Rumph. amb.* 5. 299. *t.* 103. *f.* 2.

Leaves oblong ſomewhat toothed ſubpetiolate; peduncles woolly ſuſtaining about two flowers.

12. Conyza tortuoſa.

Lin. ſpec. 1207. *Reich.* 3. 773. *hort. cliff.* 405. *Vaill. act. par.* 1719. 396.

Stem tortuoſe, ſhrubby; leaves ovate-oblong quite entire, racemes reflex.]

13. Conyza candida. *Woolly Fleabane.*

Lin. ſpec. 1208. *ſyſt.* 752. *Reich.* 3. 774. *hort. cliff.* 405. *Buxb. cent.* 2. 23. *t.* 17. *Bocc. ſic.* 60. *t.* 31. *f.* 2. (*Aſter.*) *Barr. rar. t.* 217. (*Jacobæa.*) *Lour. cochinch.* 495.

C. cretica fruticoſa, folio molli candidiſſimo & tomentoſo. *Tourn. cor.* 33. *Vaill. act. par.* 1719. *p.* 394.

Aſter raguſinus, fol. verbaſci. *Zan. hiſt.* 33. *t.* 12. 34. *t.* 21.

Leaves ovate tomentoſe; flowers crowded; peduncles both lateral and terminating.

[14. Conyza anthelmintica. *Purple Fleabane.*

Lin. ſpec. 1207. *ſyſt.* 753. *Reich.* 3. 774. *Vaill. act. par.* 1719. *p.* 300. *Retz. obſ.* 1. 28.

Bacchariodes. *Lin. zeyl. n.* 418.

Scabioſa conyzoides, &c. *Burm. zeyl.* 210. *t.* 95.

Cattu-Schiragam. *Rheed. mal.* 2. 39. *t.* 24. *Raii hiſt.* 1443.

Leaves lanceolate-ovate ſcabrous; peduncles one-flowered; calyxes ſquarroſe.

15. Conyza balſamifera.

Lin. ſpec. 1208. *ſyſt.* 753. *Reich.* 3. 774. *Burm. ind.* 178. *Rumph. amb.* 6. *p.* 55. *t.* 24. *f.* 1. *Cluſ. exot.* 92. *Pluk. amalth.* 64.

Leaves lanceolate, tomentoſe underneath, even the petioles toothed.

16. Conyza cinerea. *Aſh-coloured Fleabane.*
Lin. ſpec. 1208. *ſyſt.* 753. *Reich.* 3. 775.
Senecioides. *Lin. zeyl. n.* 419.
Senecio indicus atriplicis folio glabro. *Mor.* 3. 106. *ſ.* 7. *t.* 17. *f.* 7.—ind., fol. ternis crenatis. *Burm. zeyl.* 211. *t.* 96. *f.* 1.
Eupatorium, anguſtiore fol., bermudenſe, flor. flaveſcentibus. *Pluk. alm. t.* 243. *f.* 3.
Olus ſcrophinum. *Rumph. amb.* 6. *t.* 14. *f.* 1.
Leaves oblong; flowers panicled; corollas cylindric, twice the length of the calyx.]

17. Conyza odorata. *Sweet-ſcented Fleabane.*
Lin. ſpec. 1208. *Reich.* 3. 775. *Burm. ind.* 179. *Plum. ſpec.* 9. *ic.* 97. *Lour. cochinch.* 495.
β. Eupatoria conyzoides maderaſpatana, fol. glabris, fl. purpuraſcente. *Pluk. alm. t.* 177. *f.* 2.
Leaves ovate ſerrate ſubtomentoſe acute; ſtem arboreſcent corymbed; corollas almoſt globular.

18. Conyza chinenſis. *Chineſe Fleabane.*
Lin. ſpec. 1208. *Reich.* 3. 776. *Lour. cochinch.* 496. *Burm. ind.* 179.
Senecio amboinicus. *Rumph. amb.* 6. 36. *t.* 14. *f.* 2.
Leaves lanceolate-ovate reflex-ſerrate tomentoſe underneath; flowers terminating heaped.]

19. Conyza hirſuta. *Shaggy Fleabane.*
Lin. ſpec. 1209. *Reich.* 3. 776. *Burm. ind.* 180. *Lour. cochinch.* 496.
Leaves oval quite entire ſcabrous, hirſute underneath.

20. Conyza arboreſcens. *Tree Fleabane.*
Lin. ſpec. 1209. *Reich.* 3. 776. *Swartz. obſ.* 304. *Plum. ſpec.* 10. *ic. t.* 130. *f.* 2. *Sloan. jam.* 1. 257. 11. *Brown. jam.* 313. *n.* 1. (*Eupatorium.*)
Leaves ovate quite entire acute tomentoſe underneath; ſpikes recurved one-ranked; bractes reflex.

[21. Conyza fruticoſa. *Shrubby Fleabane.*
Lin. ſpec. 1209. *Reich.* 3. 776.
Eupatorium amer. frut., hederæ terreſtris fol., flore purpuraſcente. *Plum. ſpec.* 10.
Leaves ovate quite entire obtuſe; flowers ſeſſile alternate; branchlets flexuoſe.

22. Conyza virgata. *Winged-ſtalked Fleabane.*
Lin. ſpec. 1206. *Reich.* 3. 777. *Plum. ſpec.* 9. *ic.* 98. *f.* 1. *Brown. jam.* 318. *n.* 2.
Guaphalium virgatum. *Lin. amæn.* 5. 405.
Leaves decurrent lanceolate ſerrulate; ſtems wand-like; flowers ſpiked, in ſcattered heaps.

23. Conyza decurrens.
Lin. ſpec. 1206. *Reich.* 3. 777.
Leaves decurrent lanceolate ſerrulate; flowers axillary ſeſſile glomerate.

24. Conyza aurita.
Lin. ſyſt. 753. *ſuppl.* 367.
Leaves dentate-ſinuate; earlets ſubdecurrent.

Species from Hortus Kewenſis.

25. Conyza Inuloides. *Cluſter-flowered Fleabane.*
Ait. hort. kew. 3. 182.
Chryſocoma dichotoma. *Lin. ſuppl.* 359. *Jacq. ic. collect.* 1. 44.
Leaves cuneiform-linear obtuſe notch-toothletted ſmooth; ſtem ſhrubby; anthers two-briſtled.

26. Conyza ſericea. *Snowy Fleabane.*
Ait. hort. kew. 3. 183.
Chryſocoma ſericea. *Lin. ſuppl.* 360.
Leaves linear-filiform, they and the ſtems tomentoſe-ſilky; flowers panicled.

27. Conyza ægyptiaca. *Egyptian Fleabane.*
Ait. hort. kew. 3. 183.
Erigeron ægyptiacum. *Lin. mant.* 112. *Jacqu. hort.* 3. 14. *t.* 19.—ſerratum. *Forſk. deſcr.* 148.
Leaves oblong-ſpatulate toothed hairy, flowers ſubpanicled globular; calycine leaflets ſubulate ſoft.

28. Conyza rugoſa. *St. Helena Fleabane.*
Ait. hort. kew. 3. 184.
Shrubby; leaves wedge-ſhaped ſerrate villoſe wrinkled netted; peduncles villoſe one-flowered; flowers radiate.

29. Conyza inciſa. *Ear-leaved Fleabane.*
Ait. hort. kew. 3. 184.
Leaves ovate ſubcordate hairy-viſcid toothed, eared at the baſe; diſk of the receptacle honey-combed.

30. Conyza patula. *Spreading Fleabane.*
Ait. hort. kew. 3. 184.
Serratula. *Mill. fig.* 165. *t.* 247. *dict. edit.* 7. *n.* 9.
Leaves elliptic ſerrate villoſe underneath; calyxes ſubglobular, leaflets lanceolate-ſubulate; branches ſpreading.]

Species from South America, in Miller's Dictionary.

31. Conyza tomentoſa.
Mill. dict. n. 5. *Houſt. Mſs.*
Arboreſcent; leaves oblong-ovate tomentoſe cinereous underneath; flowers terminating, on branching peduncles.

32. Conyza ſalicifolia. *Willow-leaved Fleabane.*
Mill. dict. n. 6. *Houſt. Mſs.*
Leaves linear decurrent ſerrate; flowers corymbed terminating.

33. Conyza corymboſa.
Mill. dict. n. 7. *Houſt. Mſs.*
Arboreſcent; leaves lanceolate, flowers corymbed terminating, on branching peduncles.

34. Conyza viſcoſa.
Mill. dict. n. 8. *Houſt. Mſs.*
Herbaceous; leaves ovate ſerrate villoſe; flowers both axillary and terminating.

35. Conyza ſymphytifolia. *Comfrey-leaved Fleabane.*
Mill. dict. n. 10. *Houſt. Mſs.*
Leaves oblong-ovate ſcabrous; flowers racemed terminating; ſtem herbaceous.

36. Conyza ſcandens. *Climbing Fleabane.*
Mill. dict. n. 11. *Houſt. Mſs.*
Leaves lanceolate ſcabrous nerved ſeſſile; racemes recurved; flowers aſcending, peduncles lateral; ſtem ſhrubby climbing.

37. Conyza trinervia.
Mill. dict. n. 12. *Houſt. Mſs.*
Leaves ovate ſmooth three-nerved quite entire ſeſſile; flowers in ſpikes terminating; ſtem ſhrubby.

38. Conyza uniflora.
Mill. dict. n. 13. *Houſt. Mſs.*
Leaves lanceolate acute ſeſſile; flowers ſolitary lateral; calyxes coloured; ſtem ſhrubby branching.

39. Conyza ſpicata.
Mill. dict. n. 14.
Shrubby; leaves ovate three-nerved; flowers in axillary ſpikes.

40. Conyza pedunculata.
Mill. dict. n. 15.
Leaves ovate-lanceolate three-nerved; peduncles very long terminating; flowers in corymbs.

41. Conyza Baccharis.
Mill. dict. n. 16.
Leaves ovate-oblong obtuſe ſerrate half-ſtem-claſping; flowers in terminating corymbs.

From Swartz.

42. Conyza purpuraſcens.
Swartz prodr. 112. *Brown. jam.* 318. 1. *Sloan. jam.* 1. 258. *t.* 152. *f.* 1. *Mill. dict. n.* 17. (odorata.)
Leaves ovate-lanceolate ſerrate ſubtomentoſe, ſtem ſubherbaceous ſimple at bottom corymbed at top, flowers ovate.

[43. Conyza rigida.
Swartz prodr. 113. *Plum. ic.* 14. *f.* 1.
Leaves petioled obovate entire rugged, veined underneath, ſpikes flexuoſe, flowers in pairs, all directed the ſame way.

DESCRIPTIONS, *&c.*

The Conyzas are either herbaceous or ſhrubby; in a few of them the leaves are decurrent; the flowers are of the compound kind without any ray, in corymbs or panicles at the top of the ſtem and branches[*]. The genus Baccharis is ſcarcely diſtinct from this, in the opinion of Juſſieu, Lamarck, Gærtner, &c.

1. Root biennial. Stems a foot in height, upright, panicled at the end, purpliſh with a white woollineſs. Branches ſtraight. Leaves ovate-oblong, terminating in petioles, wrinkled, ſerrate,

[*] Juſſieu.

ſpreading, bowed back. Flowers terminating, ſtraight.

Stem from two to three feet high and more, firm, ſomewhat angular, ſtriated, downy, branched towards the ſummit: (according to Withering, nearly cylindric, reddiſh, rough, with ſhort woolly hairs.) Lower *leaves* large; upper decreaſing, bluntly oval-lanceolate, petiolate, irregularly ſerrate, downy on both ſurfaces: (or woolly underneath, and hairy above): thoſe at the baſe of the flowering branches lanceolate, or linear lanceolate; ſcarce perceptibly ſerrate. Numerous flowering heads terminate the ſtem and branches, on ſhort downy peduncles; with each a ſmall lanceolate bracte. *Calyx* imbricated with numerous ſcales; the lower green, ſomewhat ſpreading; the upper yellowiſh, with green ſpreading tips; all linear-lanceolate: (according to Withering, ſcales purpliſh at the edge, with very ſhort woolly hairs on the outſide. *Corollas* yellow, yellowiſh, or duſky purple; florets without piſtils, in the circumference with piſtils; individuals with only piſtils ſlightly cloven into three, have at firſt ſight the appearance of a funnel-ſhaped floret; but are really more of the nature of a ligulate floret.) *Seeds* ſmall, blackiſh, longitudinally furrowed, crowned with a ſeſſile feather, with ſimple rays as long as the calyx [b].

The ſmell is ſlightly, but not ungratefully aromatic. Tragus reports it to be an emmenagogue, but it is ſcarcely known officinally [c].

Native of Denmark, Great Britain, Germany, Holland, France, Switzerland, Carniola, Piedmont: chiefly on dry mountainous paſtures; by hedge ſides and in woods: with us moſtly in a calcareous ſoil; as in Cambridgeſhire, at Shelford, Whittlesford, Hilderſham and Abington:—common alſo in woods in Norfolk, in a clayey ſoil. Charlton wood, and near Dartford and Greenhithe, in Kent. Near Harefield, in Middleſex. Finſhead, in Northampton. Scotland, but not common. It flowers from july to october.

2. Stems a foot or a foot and half in height, erect, hardiſh, green. Leaves reſembling thoſe of *Mezereon* or *Hyſſop*, only more obtuſe, ſmooth and ſtiff. Branches ſlender, ſtraight at the top of the ſtems. Flowers on ſhort peduncles, terminating: florets white, ſlender, reflex. Cultivated (1699) in Chelſea garden [d].

It flowers in auguſt and ſeptember.

3. Allied very nearly to *C. ſaxatilis* (n. 4.) Stem like that of Lavender, branched, and white. Peduncles ſtraight, uſually three-flowered at the end. Calycine ſcales brown at the edge [e].

Native of the South of Europe. Cultivated in 1570, by Matthias de L'Obel. It flowers from july to ſeptember [f].

4. Leaves heaped at bottom. Peduncles naked. Calycine ſcales black at the edge [g]. Stems firſt procumbent, then erect. Calyxes cylindric, patulous and membranaceous at the end. Very many, naked, female florets in the circumference.—Native of Spain, Italy, Iſtria, Carinthia, the Valais, Paleſtine, and the Cape of Good Hope [h]. Ray found it on walls and rocks about Meſſina and Sicily, abundantly.

Introduced 1774, by Monſ. Richard. It flowers in july and auguſt [i].

5. The whole plant hoary. Stems almoſt ſimple, columnar, ſtriated, with ſhort lateral branches. Leaves a finger's length, reflected at the edge, ſomewhat tomentoſe underneath. Panicle terminating, ſubdichotomous. Calyx ſubovate, ſhorter by half than the flower and down. Flower purple, mixed with the down. It has the air of *C. cinerea* (n. 17.) Found at the Cape, by Chevalier Thunberg [k].

6. This reſembles *C. ſaxatilis* very much, but the flowering ſtems have axillary bunches of ſmaller leaves. The leaves are broader, ſhorter, more obtuſe, all except the lowermoſt white on both ſides. Calycine ſcales not acute and patulous, but rather obtuſe, and cloſely imbricate. Corollas yellow, with very numerous florets. Smell ſtrong.—Native of Arabia [l].

It is very nearly allied to *C. ſaxatilis*, but the leaves towards the baſe are leſs attenuated and widened at the inſertion; the peduncles are ſhorter and thicker, with one or two ſcales, which are lanceolate, but not briſtle-ſhaped; outer calycine leaflets ovate, brown at the tip, the middle ones linear, obtuſe, with a brown line on the back, whereas in the ſaxatilis all the leaflets are lanceolate and acute; branches very thickly tomentoſe, as are alſo the leaves, but grow bald by age. In the cultivated plant the leaves are twice as broad, and not rolled back on the edge [m].

7. Leaves rugged on both ſurfaces, with four or five teeth on each ſide. Peduncles axillary, towards the end of the branches, becoming finally ſix times the length of the leaves.—Native of the Eaſt-Indies [n].

8. This has the air of an *Aſter*. Corymb ſubfaſtigiate. Flowers as in *C. ſaxatilis* (n. 4.) radiated.—Native of North America [o].

Introduced 1773, by Mr. William Young. It flowers in auguſt and ſeptember [p].]

9. From a thick fibrous root ariſe many upright ſtalks. Leaves rough, decurrent. The upper part of the ſtalk divides into many ſmaller branches, with leaves of the ſame form, but ſmaller. Flowers terminating, in round bunches, yellow, appearing in july. The ſeeds ripen in autumn.

[Native of Canada. Cultivated 1759, by Mr. Miller [q]. Compare with this *Inula bifrons*, a native of the South of Europe, and ſuppoſed not to be a different ſpecies, though it has a ray to the flower.

10. Native of the Eaſt-Indies.

11. Branches herbaceous, with a few ſcattered hairs on them. Leaves alternate, wedge-ſhaped at the baſe, green on both ſides, with a few ſcattering hairs, having three or four narrow ſerratures; not ſcabrous. Peduncles axillary, towards the top, with from two to four flowers. Calyx before it opens woolly.—Native of the Eaſt-Indies [r].

Loureiro deſcribes the ſtem as ſuffruticoſe, eight feet high, climbing, round and branching. Leaves broad-lanceolate, attenuated at the baſe, having a few teeth, ſubpubeſcent, ſcattered, petioled. Flowers yellow. All the corollets, both hermaphrodite and female ſhort, immerſed in a ſimple down.

12. Branches ſubhirſute, ſtriated, ſimple. Lower leaves obovate, upper ovate-lanceolate, veined, hardiſh, rugged on both ſurfaces, on very ſhort petioles. Racemes terminating and axillary, ſimple, ſcarce a ſpan in length, ſpreading, reflex or crenate downwards. Flowers alternate, ſeſſile, turned up, rounded: calycine ſcales ovate, the inner lanceolate [s]. Perhaps after all not diſtinct from C. arboreſcens, n. 20.

Native of Madagaſcar and Vera Cruz.

13. Stem ſuffruticoſe, ſix inches high, upright, round, hairy, whitiſh, branched. Leaves very white, quite entire, alternate. Flowers purple, peduncled, heaped. It has a pleaſant ſmell [t].] Mr. Miller ſays, that the peuncles are woolly, nine inches high, one, two or three-flowered, and that the flowers are of a dirty yellow. [According to Zanoni they are of a golden colour. The peduncles thicken towards the top. It ſometimes varies with a ſhort recurved ray [u]. Native of Candia, Sicily, and Cochinchina.—Cultivated 1714, by the Dutcheſs of Beaufort [x]. Boccone, who firſt deſcribed the plant, ſays that he had it from Alexander Balam, an Engliſhman, his very good friend, and well ſkilled in Botany.

14. *Root* annual. *Stem* erect, roundiſh, branched, ſlightly tomentoſe, ſpotted with purple; the branches erect, ſcattered. *Leaves* alternate, ſerrate, with acute

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[b] Woodw. Mſs.
[c] Haller.
[d] Moriſon.
[e] Linn. mant.
[f] Hort. kew.
[g] D'Aſſo.
[h] Linn. ſpec.
[i] Hort. kew.
[k] Linn. ſuppl.

[l] Linn. mant.
[m] Vahl.
[n] Linn. mant.
[o] Linn. ſpec.
[p] Hort. kew.
[q] Ibid.
[r] Linn. mant.
[s] Linn. cliff.
[t] Loureiro.
[u] Linn. ſyſt.
[x] Hort. kew.

unequal teeth, narrowed at the baſe into the petiole, ſcabrous on the upper ſurface, ſmooth and veined on the lower. *Flowers* in panicles at the ends of the branches, on long peduncles thickening towards the flower, and having one leaf on each: a ſolitary peduncle terminates the ſtalk. Common calyx ovate, converging at top; ſcales linear, the inner of the ſame length with the tubes of the corollas, the outer elongated, and diverging every way. Corolla uniform, conſiſting of twenty-five to forty hermaphrodite, red florets; thoſe of the ray reflex: tube very ſlender, narrowed towards the border, which is oblong-ovate, the diviſions lanceolate, erect, almoſt converging. Anther white, with five black lines. Germ ſtriated: ſtyle the length of the corolla: ſtigmas two, reflex. Seed obconic, longitudinally ſtriated. Down briſtle-form, of the ſame length with the tube of the corolla. Receptacle dotted.—Since there are no female florets, this is rather a ſpecies of *Serratula*[y]. Juſſieu doubts whether it belongs to this genus; the flowers being ſubſolitary, almoſt all the florets hermaphrodite, and the calycine leaflets all equal in length, the inner ones wider, the outer linear, and reſembling a calycle[z]. The leaves have an exceeding bitter taſte. Native of the Eaſt-Indies. Introduced 1770, by Monſ. Richard. It flowers in auguſt and ſeptember, and is biennial[a].

15. Down ferruginous[b]. Perhaps a ſpecies of Baccharis[c].—Native of the Eaſt-Indies.

16. Stem erect, panicled, pubeſcent. Leaves hoary, lanceolate-elliptic, repand-ſerrate, remote. Corollas purple. Styles ſhort. Down longer than the calyx[d].—Annual. Native of the Eaſt-Indies.

17. This is an odoriferous plant, with an upright ſhrubby ſtem, four feet high, the branches riſing in form of a corymb. Leaves ſeſſile, alternate. Flowers purple, lateral and terminating, ſeveral together; the corollets ſo ſhort as not to emerge from the calyx[e]. Native of the Eaſt-Indies and Cochinchina.

18. Stem ſuffruticoſe, four feet high, upright, round, ſmooth, branched at top. Leaves hardiſh, petioled, alternate. Flowers yellow, peduncled, terminating. Receptacle ſubvilloſe[f]. This has ſeldom more than three flowers crowded together[g].—Native of China, Cochinchina, Java and Amboina.

19. Stem herbaceous, a foot high, upright, ſimple, round, hairy, having few leaves; theſe are oblong, ſharpiſh, toothletted, hairy, ſcattered. Flowers yellow, crowded, terminating. Calyx hairy, ſhort. Naked female florets in the ray[h].] According to Miller, it is a biennial plant, about two feet high, with purple flowers in oblong ſpikes. [Burmann ſays, it varies with entire and toothletted leaves, and that there are ſeveral varieties of it.

According to Linneus, the ſtem is ſomewhat villoſe. Leaves oblong or oval, underneath very hirſute and pale. Flowers in racemes crowded: and it has the calyx of an Aſter. Native of Java, China and Cochinchina.

20. This is a ſhrub with a depreſſed rugged ſtem. Branches divaricate, ſubdivided, bent down, diverging, villoſe with a blackiſh ſhagginess. Leaves petioled, alternate, broad-lanceolate, nerved, wrinkled, pubeſcent. Racemes terminating and axillary, erect; flowers ſubſeſſile, alternate, pale purple. Calycine ſcales preſſed cloſe, pubeſcent. Corolla uniform: twelve hermaphrodite corollets in the circuit, a little higher than the others, giving the flower a radiate appearance[i]. It commonly riſes to the height of three feet and a half or more, in the low lands of Jamaica. The branches bend generally forwards, and bear their flowers in looſe ſpikes, (or rather racemes) along their extremities, where they are diſpoſed in a gradual ſucceſſion on the upper ſides only[k].

21. Native of South America.

22. It is hairy, and riſes generally to the height of two feet and a half or more. The leaves are ſomewhat hoary. The flower-branches are very long and ſlender, and diſpoſed in form of ſpikes at the top; the lower flowers are in threes, the upper ſolitary. The ſeeds are ſubhirſute[l].

Native of Jamaica and Carolina.

Introduced 1783, by Mr. William Young. It flowers in auguſt and ſeptember[m].

23. Root annual. Stature of *Filago*. Stem about a palm in heighth, erect, villoſe-tomentoſe, as is the whole plant. The leaves run very far down the ſtem, as in *Geniſta ſagittalis*. Glomerules of flowers aſh-coloured, from the axils of the leaves, globular.—Native of India[n].

24. Root-leaves larger than the reſt, ſtiffer, ſmoother, obovate, with red veins, widely ſerrate, and waved between the ſerratures. Stem-leaves oblong, ſublanceolate, ſoft, villoſe, ſerrate at the end, ſinuate in the middle, ſubpinnate at the baſe, the whole edge ſerrate-toothed, ſubdecurrent; with two or three foliaceous ſpreading pinnas on each ſide. *Stem* erect, ſtiff, a foot high, reddiſh, hairy, branched: the branches erect, ſimple. *Flowers* from the top of the ſtem, peduncled, ſcattered in various ways. Calyx ovate; leaflets linear, ſpreading at the end; the outer broader, the inner formed into a cylinder. Florets minute, white; with minute, linear rays. Piſtils very long, erect.—It ſeems intermediate between this genus and *Baccharis*. The ſcent is that of *Stachys foetida*, but more pleaſant.—Native of the Eaſt Indies, in moiſtiſh places[o].

25. Stem proliferous, dichotomous, ſmooth; when the branch is terminated by a panicle immediately under it, the ſtem is divided into two branches, which are ſubdivided in the ſame manner. Leaves very ſhort, ſharply ſerrate, ſomewhat ſcabrous, with very minute, elevated dots. Corymbs terminating, ſimple. Peduncles hirſute, cloathed with ſubulate bractes. Calyx purpliſh. Flowers yellow.—All the plants in the Canary iſlands, even theſe of the *Syngeneſia* claſs, grow like ſhrubs[p].

Native of the iſland of Teneriffe. Mr. Fr. Maſſon. Introduced 1780. It flowers in july and auguſt[q].

26. This is eaſily known by the ſilky whiteneſs of the branches, leaves and peduncles, and by its yellow flowers. Leaves channelled, very long and flaccid. Branchlets ſimple, but with panicles of flowers at the end; the ſhorter ones are terminated with a panicle of very few flowers. Calyxes ſmooth, with ſubulate, yellow ſcales. The bark and wood have an acrid, pungent taſte; and the inhabitants uſe it againſt the toothach[r].

Native of the Canary iſlands. Mr. Francis Maſſon. Introduced 1779[s].

27. *Stem* erect, a foot and half in height, ſomewhat ſtriated, pubeſcent, and ſomewhat viſcid. *Leaves* alternate, ſeſſile, ſcarcely half-ſtem-claſping, ſpatulate or obovate-lanceolate, bluntiſh, ſubpubeſcent, having uſually about five teeth, but entire at the baſe. Branches from the upper axils. *Flowers* terminating, four or five, roundiſh, on purpliſh peduncles. Corollas yellow, with minute florets; in the ray naked, and very abundant: piſtils yellow, quickly vaniſhing; ſurrounding the diſk with a kind of broad downy ring.—Annual[t].

Native of Egypt. Introduced 1778, by Monſ. Thouin. It flowers in july[u].

28. Native of the iſland of St. Helena. Introduced 1772, by Sir Joſeph Banks Bart.—It flowers in November[x].

29. Native of the Cape of Good Hope. Mr. Francis Maſſon. Introduced 1774.—It flowers from june to auguſt[y].

30. Annual. *Stem* taper, herbaceous, a foot and half in height, covered lightly with a mealy down,

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[y] Retz.
[z] gen. 180.
[a] Hort. kew.
[b] Linn. ſyſt.
[c] Reichard.
[d] Linn. ſyſt.
[e] Loureiro.
[f] Ibid.
[g] Linn. ſpec.
[h] Loureiro.
[i] Swartz.
[k] Browne.

[l] Browne.
[m] Hort. kew.
[n] Linn. ſpec.
[o] Linn. ſuppl.
[p] Ibid.
[q] Hort. kew.
[r] Linn. ſuppl.
[s] Hort. kew.
[t] Linn. mant.
[u] Hort. kew.
[x] Ibid.
[y] Ibid.

and branching out almoſt the whole length. Branches ſlender, ſpreading almoſt horizontally, except that they turn up towards the end. *Leaves* oblong-oval, ſoft, bluntly indented on their edges; the lower about four inches long, and two inches and a quarter broad in the middle; hoary green on their upper, and pale green on their under ſurface, with a ſtrong, pale midrib: the leaves on the branches diminiſh gradually in ſize, but are of the ſame form. The *flowers* are produced at the end of the branches on ſhort peduncles, for the moſt part ſuſtaining three flowers. Calyxes ſoft and ſwollen in the middle; ſcales ſmall, acute. Corollas purple. The flowers appear in july, and there is a continual ſucceſſion till the cold of autumn puts a ſtop to them. The early flowers are generally ſucceeded by good ſeeds in favourable ſeaſons.—Native of the northern parts of China; and cultivated 1758, by Mr. Miller, who had the ſeeds from John Browning, Eſq. Maſter in Chancery, a curious cultivator of exotic plants at Chelſea [z].]

31. This riſes with a woody ſtalk ten or twelve feet high, dividing into many branches, the bark of which is covered with a brown nap. Leaves alternate, on ſhort petioles. Flowers in looſe ſpikes ranged on one ſide: they are white, and are ſucceeded by long flat ſeeds. It grows naturally at La Vera Cruz in New Spain, whence Dr. Houſtoun ſent the ſeeds to Mr. Miller.

32. This has a perennial root, from which ariſe ſeveral upright ſtalks three feet high. The flowers are produced at the end of the ſtalks in round bunches; they are ſmall, and of a purple colour; and are ſucceeded by oblong flat ſeeds. Native of La Vera Cruz in New Spain.

33. Stem ſtrong, woody, fourteen or ſixteen feet high, covered with an aſh-coloured bark, and divided at top into many woody branches. Leaves alternate, on ſhort petioles. The branches are terminated by roundiſh bunches of white flowers, on long peduncles, ſeveral together. Sent from La Vera Cruz by Dr. Houſtoun.

34. This is an annual plant, growing in low moiſt places, where the water ſtands in winter. It has an herbaceous branching ſtalk, one foot high, with one oval ſeſſile leaf at each joint, covered with a white hairy down. The flowers are produced from the ſide of the branches on ſlender petioles, each for the moſt part ſuſtaining three flowers, which are white, and are ſucceeded by chaffy ſeeds. The whole plant is viſcous. Sent by Dr. Houſtoun from La Vera Cruz.

35. Root perennial. Stem three feet high. Leaves from four to five inches long, and one and a half broad in the middle, rough like thoſe of Comfrey. Stems terminated by branching peduncles, each ſuſtaining ſeveral yellow flowers, not much unlike thoſe of the common ſort. Native of La Vera Cruz, whence it was ſent by Dr. Houſtoun.

36. This has a climbing ſhrubby ſtalk, fourteen or ſixteen feet high, dividing into many branches. Leaves the ſize of thoſe of the Bay-tree, and full as thick in their texture, having many deep tranſverſe nerves, running from the midrib to the ſides; and of a pale green colour. Flowers large and white, produced in long ſpikes, ranged on the upper ſide only, from the ſide of the branches, and pointing upwards. They are ſucceeded by flat dark-coloured ſeeds. Sent from La Vera Cruz by Dr. Houſtoun.

37. Stalk ſhrubby, ſix or ſeven feet high, dividing into ſeveral woody branches. Flowers white, ſucceeded by oblong flat ſeeds. Native of Carthagena in New Spain, whence it was ſent by Mr. Robert Millar.

38. This riſes with a ſhrubby ſtalk eight or ten feet high, dividing into many long ſlender branches. Leaves three inches long, and three quarters of an inch broad in the middle; the ſmaller branches are ſet with very narrow, oblong, pointed leaves, which grow cloſe to the ſtalks; and at each joint is produced one pretty large white flower, with a purple calyx; theſe flowers come out the whole length of the ſmall branches, ſitting cloſe to the baſe of the leaves, ſo that the plants make a pretty appearance in flower.

Native of the ſame country, and ſent over by Mr. Millar.

39. This has a ſtrong woody ſtem, riſing ten or twelve feet high, divided at top into many ſhort woody branches, whoſe joints are very cloſe to each other. The leaves come out alternate on every ſide the branches, to which they ſit very cloſe; they are ſmooth, one inch long, and half an inch broad, ending in acute points, having three longitudinal veins. The flowers are white, and produced in ſhort cloſe ſpikes, which come out from the ſide of the branches, and are ſucceeded by oblong flat ſeeds.

Native of Carthagena in New Spain, and ſent over by Mr. Millar.

40. This riſes with a ſhrubby ſtem to the height of ſix or ſeven feet, dividing into ſeveral branches, which have a dark brown bark. Leaves ſmooth, having three longitudinal veins, ſtanding on ſhort foot-ſtalks, placed alternate on every ſide the branches. The flowers are produced on long naked peduncles, which extend five or ſix inches beyond the end of the branches; theſe are purple, and form a kind of round bunch: the calyx of the flower is compoſed of ſhort chaffy ſcales.

It grows naturally at Campeachy, whence the ſeeds were ſent by Mr. Robert Millar.

41. Stem ſhrubby, ten or twelve feet high, ſending out many ſtrong woody branches, covered with a dark-coloured bark. The flowers are purple, and are ſucceeded by flat ſeeds. Native of Campeachy.

42. This riſes with a ſhrubby branching ſtalk four or five feet high. The lower branches and ſtalk have ſpear-ſhaped leaves four inches long and one inch broad in the middle, on ſhort petioles: the leaves on the upper branches are much narrower, and end in acute points. The flowers are purple, and are produced in round bunches at the end of the branches.

[Browne ſays, that it ſeldom riſes ſixteen or twenty inches in height; that the ſtalk is generally pretty ſimple below the middle, but towards the top throws out many branches, which reach nearly to an equal height, and carry their flowers in a ſhady ſpreading form at the top; that the ſmell is agreeable, and that it is kept by ſome people among their cloaths, to preſerve them from moths and other inſects.

Native of Jamaica, in the low marſhy lands.

43. Native of Jamaica.]

PROPAGATION AND CULTURE.

1. Common great Fleabane being a native, is ſeldom allowed a place in gardens. If the ſeeds be permitted to ſcatter, the plants will come up the following ſpring, and require no other care but to keep them clean from weeds.

9. This is propagated by ſeeds, which may be ſown on a bed of light earth in the ſpring, and when the plants come up, they ſhould be thinned where they are too near, and kept clean from weeds; the following autumn they may be tranſplanted where they are deſigned to remain, and require no other care but to keep them clean from weeds. The ſecond year they will flower and produce ripe ſeeds, and will continue two years if the ſoil is not too good, for theſe plants often rot, when they are planted in a rich ſoil.

13. This rarely producing ripe ſeeds in this country, is propagated here by ſlips, which, if taken from the old plants in june, and planted on an eaſt-aſpected border, and covered with hand-glaſſes, will take root in ſix or eight weeks. But theſe ſlips muſt be frequently, but gently refreſhed with water, and the glaſſes ſhould be ſhaded in hot weather; and after they have been planted a fortnight, the glaſſes ſhould be raiſed on one ſide to admit air to the cuttings; and when they have taken root, they ſhould

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[z] Mill. fig.

be gradually expoſed to the open air. In autumn theſe ſhould be carefully taken up, preſerving the earth to their roots; ſome of them may be planted in pots, that they may be ſheltered under a frame in the winter; and the others ſhould be planted in a warm border of dry poor earth, where they will endure the cold of our ordinary winters very well, and continue many years. This is preſerved in gardens, more for the beauty of its ſilvery leaves than its flowers, which have not much to recommend them.

[14. Produces ſeeds freely, by which it may be propagated.]

19. This ſort is propagated by ſeeds, which ſhould be ſown in pots in the autumn, if they can be procured at that ſeaſon; but the pots ſhould be placed in a garden-frame in winter, to prevent the ſeeds ſuffering by cold and wet. If the ſeeds are ſown in the ſpring, the plants rarely come up the ſame year, therefore it will be proper to ſcreen this in winter; when this is obſerved, the plants will riſe the following ſpring. When the plants are fit to remove, they ſhould be each planted in a ſeparate pot, and placed into a very moderate hot-bed, where they muſt be ſcreened from the ſun until they have taken root; after which they ſhould be gradually hardened to bear the open air, into which they ſhould be removed the beginning of june, placing them in a ſheltered ſituation, where the ſecond ſeaſon they will flower, and if the ſummer is good, they will ripen their ſeeds.

6, 7, 10 to 12, 14 to 21, 22 to 24, 27, 31 to 43. Theſe are too tender to thrive in the open air in this country; the ſeeds therefore muſt be ſown upon a hot-bed the beginning of april, and when the plants are fit to remove, they muſt be each tranſplanted into a ſmooth pot filled with light ſandy earth, and plunged into a hot-bed, obſerving to ſcreen them from the ſun till they have taken new root; then they muſt have free air admitted to them every day, in proportion to the warmth of the ſeaſon; they muſt alſo be frequently watered in warm weather, but they ſhould not have it in too great plenty. As the plants advance in ſtrength, they muſt have a greater ſhare of air; and if the ſeaſon is warm, they may be expoſed to the open air for a few weeks in the heat of ſummer, provided they are placed in a warm ſituation; but if the nights prove cold, or much wet ſhould fall, they muſt be removed into ſhelter: if theſe plants are placed in a moderate ſtove in winter, they will thrive better than in greater heat, and in ſummer they ſhould have a large ſhare of air. With this management the plants will flower well in july, but in general they will not perfect their ſeeds here.

[22. And ſome other of the perennial ſorts may be increaſed by parting the roots.

26, 28, 29. Grow readily from cuttings.

27. Muſt be propagated from ſeeds.]

30. The ſeeds ſhould be ſown upon a moderate hot-bed the beginning of april; when the plants are fit to remove, they ſhould be tranſplanted into a freſh hot-bed, obſerving to ſhade them from the ſun till they have taken new root. In june they may be gradually hardened to the open air; and part of them may be planted in warm borders, where they will flower, and if the ſeaſon prove warm, ripen their ſeeds: but it will be prudent to keep ſome plants in pots, placed in an airy glaſs-caſe, in order to ſecure good ſeeds.

34. Sometimes ripens its ſeeds, if the autumn prove favourable; but there is little beauty in this ſpecies. The ſeeds of the other South-American ſorts muſt be procured from that country; and being long in coming, they rarely vegetate the firſt year.

36. Makes a fine appearance in the ſtove when it flowers, and as it retains its leaves all the year, in the winter it affords an agreeable variety among other tender plants.

[Moſt of the ſpecies require the protection of the bark ſtove, as 6, 7, 10, 11, 12, 14 to 21, 23, 24, 27, and 31 to 43.

3, 4, 5, 13, 22, 25, 26, 28, 29, 30, may be kept in a Green-houſe, dry Stove or glaſs caſe.

2, 8, 9 are hardy Perennials.

CONYZA. See *Baccharis*, *Bidens*, *Buphthalmum*, *Cacalia*, *Chryſocoma*, *Cineraria*, *Erigeron*, *Eupatorium*, *Gnaphalium*, *Inula*, *Pteronia*, *Senecio*, *Stoebe*, *Tarconanthus*.

Conyza lobata. See *Calea lobata*.

CONYZELLA. See *Erigeron*.

Conyzis affinis. See *Inula*.

CONYZOIDES. See *Erigeron*.]

COPAIFERA. (*From Copaivâ, the Indian name, and fero, to bear.*)

Lin. gen. n. 542. *Reich.* 601. *Schreb.* 757. *Juſſ.* 365. Copaiva. *Jacqu. amer.* 133.

Claſſ. 10. 1. Decandria Monogynia.

Nat. order of *Leguminoſæ*. Juſſ.

GENERIC CHARACTER.

CAL. none.

COR. *Petals* four, oblong, acute, concave, very ſpreading.

STAM. *Filaments* ten, filiform, incurved, a little longer than the corolla. *Anthers* oblong, incumbent.

PIST. *Germ* round, compreſſed-flat, pedicelled. *Style* filiform, incurvate, length of the ſtamens. *Stigma* obtuſe.

PER. *Legume* ovate, bivalve, pointed with part of the ſtyle.

SEED ſingle, ovate, involved by a berried *Aril*.

ESSENTIAL CHARACTER.

Cal. none. *Pet.* four. *Legume* ovate. *Seed* one, with a berried aril.

SPECIES.

1. Copaifera officinalis. *Balſam of Capevi tree.*
Lin. ſpec. 557. *ſyſt.* 409. *Reich.* 2. 303. *mat. med.* 115. *Jacqu. amer.* 133. *t.* 86. *pict.* 67. *t.* 128. *Woodv. med. bot.* 373. *t.* 137. *Plenck, ic. t.* 343.
Copaiba. *Marcgr. braſ.* 130. *Piſ. braſ.* 56. *Raii hiſt.* 1593. 16. & 1759. 4.

DESCRIPTION, *&c.*

[This is a lofty elegant tree, with a handſome head: the extreme branches at the axils are flexuoſe, and have a ſmoothiſh bark of a browniſh aſh colour. Leaves alternate, pinnate, the midrib or rachis round and four inches long, leaflets three or four pairs without an odd one, lanceolate-ovate, ending in a blunt point, quite entire, ſhining, ſubcoriaceous, with ſeveral obliquely aſcending veins, the middle nerve prominent beneath, and ferruginous; they are from two to three inches long, and on ſhort petioles; the inner ones narrower by half than the others; the two uppermoſt oppoſite, but one of theſe frequently wanting, ſo that the leaf then appears to be unequally pinnate; the reſt are alternate. Racemes axillary, ſolitary, ſpreading, ſtiff, round, the length of the pinnas, looſely divided into about eight alternate, lateral common peduncles, an inch and half in length, with white flowers ſitting cloſely on them. The germ as it grows, from flat becomes globular.

Native of South America, frequent about Tolu, ſixty leagues from Carthagena, promiſcuouſly with the trees which yield balſam of Tolu, Peru, &c.[a]]

Introduced into Jamaica by Mr. Robert Millar, ſurgeon: [here in 1788, by Mr. Alexander Anderſon[b].

From this tree is obtained in very conſiderable quantities, by perforating the trunk, fluid balſam or reſin, which thickens by degrees; and which is known in medicine by the title of Balſamum Capivi.

This balſam has an agreeable ſmell, and a bitteriſh taſte; and when agitated with water, in ſome degree unites with it, rendering the liquor turbid and milky, but ſoon ſeparates, and riſes to the ſurface on ſtanding. Dropt on ſugar, or triturated with thick mucilages, or with whites of eggs, it becomes more permanently miſcible with water into an uniform milky fluid: it is generally taken in this form, or mixed with powdery or other matters into a bolus or electary. It mixes eaſily with diſtilled oils, and diſſolves in rectified ſpirit of wine into a tranſparent fragrant liquor, more agreeable than the balſam itſelf.

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[a] Jacquin. [b] Hort. kew.

Balſam of Copaiba has been employed principally, and preferably to the other balſams, in fluor albus, and in ulcerations of the urinary paſſages. Fuller ſays he has known dry deep coughs, coughing up of blood and pus, voiding of chyle inſtead of urine, with great pain and weakneſs, cured by it; and that, notwithſtanding the warmth and bitterneſs of its taſte, he has found it to agree in hectic caſes. He obſerves that it gives the urine a bitter taſte, but not a violet ſmell, as the turpentines do; and that if taken in doſes of two or three drams, it proves, like them, purgative. The uſual doſe is from ten to thirty or forty drops.

In too large doſes, or too long continued, it has been found productive of conſiderable inconveniences; exciting febrile heats, pains in the head, &c.]

PROPAGATION AND CULTURE.

If freſh ſeeds of this tree could be procured from South America or the Weſt Indies, it might be raiſed from them. [It may alſo be increaſed from cuttings, but not very readily.] It muſt be conſtantly preſerved in the bark ſtove.

Copalli. See *Rhus copallinum.*

Coppices. See *Planting.*

[**COPROSMA.** (*From* κοπρος, *dung; and* οσμη, *ſmell: the firſt ſpecies ſmelling very ſtrong like dung.*)
Lin. gen. Schreb. n. 1593. *Forſt. gen.* 69. *Lin. ſuppl.* 24. *Juſſ.* 205.
Claſſ. 23. 1. Polygamia Monoecia.
Nat. order of *Stellatæ.—Rubiaceæ.* Juſſ.

GENERIC CHARACTER.

* *Hermaphrodite.*

Cal. *Perianth* one-leafed, inferior, very ſhort, permanent; with five acute diſtant toothlets.

Cor. one-petalled, funnel-form, five or ſix-cleft: *ſegments* acute, erect.

Stam. *Filaments* five, ſix or ſeven, capillary. *Anthers* oblong, bifid at the baſe, erect, ſlightly incurved, acuminate.

Pist. *Germ* oblong. *Styles* two, filiform, cohering ſlightly at the baſe, longer than the corolla, divaricating. *Stigmas* ſimple.

Per. *Berry* ovate-globular, two-ſeeded.

Seeds two, ovate, flat on one ſide, convex on the other.

* *Male.*

Cal. Cor. Stam. as in the Hermaphrodite.

ESSENTIAL CHARACTER.

Cal. one-leafed, five-toothed. *Cor.* five or ſix-cleft. *Stam.* five, ſix or ſeven. **Herm.** *Styles* two, long. *Berry* containing two flattiſh ſeeds.

SPECIES.

1. Coproſma foetidiſſima.
Lin. ſyſt. 274. *ſuppl.* 178. *Forſt. gen.* 69. *Fl. auſtr. n.* 138.
Flowers ſolitary.

2. Coproſma lucida.
Lin. ſyſt. 274. *ſuppl.* 178. *Forſt. gen.* 69. *fl. auſtral. n.* 137.
Peduncles compound.

DESCRIPTIONS, *&c.*

Theſe are Shrubs. Leaves oppoſite, with a ſtipule interpoſing. Peduncles axillary, one or many-flowered. Flowers male and hermaphrodite; corolla differently divided, and the number of ſtamens uncertain, from five to ſeven[c].

1. This has a ſmell abominably fetid. Diſcovered with the following november 12th, 1773, in Queen Charlotte's Sound New Zeeland.

2. Leaves petioled, ovate, acuminate both ways, quite entire. Stipule ſolitary, ſharp, combining the leaves. Peduncles ſolitary, oppoſite, two-leaved, divided into other peduncles terminated by capitate flowers. Calyx and corolla greeniſh. The whole plant very ſmooth, reſembling Phyllis[d] in ſome reſpects, Pæderia in others[e].

Coral and **Corallodendron.** See *Erythrina, Piſcidia* and *Sophora.*

Corallaria. See *Adenanthera.*

Coralloides. See *Dentaria.*

Corallorhiza. See *Ophrys.*

Coral-tree. See *Erythrina.*

Coral-wort. See *Dentaria.*]

CORCHŎRUS. (*Gr.* Κόρχορος, *from* κορεω, *purgo; an ordinary pot-herb, ſaid to be very bitter; hence the proverb of Corchorus among the pot-herbs, to ſignify any thing mean and contemptible.*)
Lin. gen. n. 675. *Reich.* 730. *Schreb.* 917. *Gærtn.* 64, & 179. *Tourn.* 135. *Juſſ.* 290.
Claſſ. 13. 1. Polyandria Monogynia.
Nat. order of *Columniferæ. Tiliaceæ.* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* five-leaved; *leaflets* linear-lanceolate, acute, erect, deciduous.

Cor. *Petals* five, oblong, obtuſe, narrower beneath, erect, length of the calyx.

Stam. *Filaments* numerous, capillary, ſhorter than the corolla. *Anthers* ſmall.

Pist. *Germ* oblong, furrowed. *Style* thick, ſhort. *Stigma* two-cleft.

Per. *Capſule* oblong, five-celled, five-valved. (three cells or more, divided by incomplete, tranſverſe partitions. *G.*)

Seeds very many, cornered, pointed.

Obs. C. ſiliquoſus *has a linear, compreſſed, two-valved, two-celled Silique.*
C. capſularis *and* hirſutus *have roundiſh retuſe capſules.*
C. æſtuans *and* tridens *have three bifid ſtyles.* R.

ESSENTIAL CHARACTER.

Cor. five-petalled. *Cal.* five-leaved, deciduous. *Capſ.* many-valved, many-celled.

SPECIES.

1. Corchorus olitorius. *Briſtly-leaved Corchorus,* or *common Jew's-Mallow.*
Lin. ſpec. 746. *Reich.* 2. 606. *mant.* 565. *fl. zeyl. n.* 213. *hort. upſ.* 147. *cliff.* 209. *Gærtn. fruct.* 308. *Gron. orient.* 170. *Comm. hort.* 47. *t.* 12. *Bauh. pin.* 317. *hiſt.* 2. 982. *Mor.* 2. 283. *ſ.* 3. *t.* 15. *f.* 4. *Pluk. alm. t.* 127. *f.* 3. *Cam. hort.* 47. *t.* 12.
Capſules oblong ventricoſe; the loweſt ſerratures of the leaves ſetaceous.

[2. Corchorus trilocularis.
Lin. ſyſt. 501. *Reich.* 2. 606. *mant.* 77. & 566. *Jacqu. hort.* 2. *t.* 173.
C. æſtuans. *Forſk. ægypt.* 4. 101.
Capſules three-celled three-valved three-ſided, angles bifid ſcabrous; leaves oblong, the loweſt ſerratures ſetaceous.

3. Corchorus tridens.
Lin. ſyſt. 501. *Reich.* 2. 606. *mant.* 566. *Pluk. phyt. t.* 127. *f.* 4. *Burm. ind.* 123. *t.* 37. *f.* 2.
Capſules linear, ſomewhat columnar ſcabrous; the loweſt ſerratures of the leaves ſcabrous.]

4. Corchorus æſtuans. *Horn-beam leaved Corchorus.*
Lin. ſpec. 746. *ſyſt.* 501. *Reich.* 2. 607. *mant.* 565. *Jacqu. hort.* 1. *t.* 85. *Gærtn. fruct.* 1. 308. *Pluk. phyt.* 127. *f.* 3. (Alcea.) *Brown. jam.* 232. *t.* 25. *f.* 1. (Triumfetta.)
Capſules oblong three-celled three-valved ſix-furrowed ſix-cuſped; leaves cordate, the loweſt ſerratures ſetaceous.

5. Corchorus capſularis. *Heart-leaved Corchorus.*
Lin. ſpec. 746. *ſyſt.* 501. *Reich.* 2. 607. *fl. zeyl. n.* 214. *hort. cliff.* 210. *upſ.* 147. *Pluk. alm. t.* 255. *f.* 4. (Alcea.) *Rumph. amb.* 5. 212. *t.* 78. *f.* 1. *Gærtn. fruct.* 2. 482. *Lour. cochinch.* 334.
Capſules roundiſh depreſſed wrinkled; the lower ſerratures of the leaves ſetaceous.

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[c] Juſſieu.

[d] Linn. ſuppl.

[e] Juſſieu.

6. Corchorus hirſutus.
Lin. ſpec. 747. *ſyſt.* 501. *Reich.* 2. 607. *Jacqu. amer.* 165. *hort.* 3. *t.* 57. *amer. pict.* 81. *t.* 157. *Breyn. prodr.* 3. 56. *Plum. gen.* 36. *ic.* 104.
C. tomentoſus. *Thunb. jap.* 228.
Capſules ronndiſh woolly; leaves ovate obtuſe tomentoſe equally ſerrate.
[7. Corchorus japonicus.
Lin. ſyſt. 501. *Thunb. jap.* 227.
Capſules round ſmooth; leaves doubly ſerrate.
8. Corchorus hirtus.
Lin. ſpec. 747. *Reich.* 2. 608. *Jacqu. hort.* 3. *t.* 58.
Capſules oblong; they and the ſtem hairy; leaves oblong, equally ſerrate.]
9. Corchorus ſiliquoſus. *Germander-leaved Corchorus.*
Lin. ſpec. 746. *ſyſt.* 501. *Reich.* 2. 608. *hort. upſ.* 147. *Jacqu. hort.* 3. *t.* 59. *Swartz obſ.* 219. *Plum. ſpec.* 7. *ic.* 103. *f.* 1. *Sloan. jam.* 1. 145. *t.* 94. *f.* 1. *Raii ſuppl.* 516.
C. Coreta. *Lin. amœn.* 5. 398.
Coreta. *Brown. jam.* 147.
Capſules linear compreſſed two-valved; leaves lanceolate equally ſerrate.

Other ſpecies from Miller.

10. Corchorus tetragonus.
Mill. dict. n. 4.
C. flore flavo, fructu caryophylloide. *Pluk.*
Leaves ovate-cordate crenate; capſules four-cornered, reflected at the points.
11. Corchorus linearis.
Mill. dict. n. 5.
Leaves lanceolate ſerrate-toothed; capſules linear compreſſed two-valved.
12. Corchorus bifurcatus.
Mill. dict. n. 6.
Leaves cordate ſerrate; capſules linear compreſſed, having two horns at the points.

From Vahl, and Thunberg.

[13. Corchorus faſcicularis.
Vahl ſymb. 3. 69. *Lamarck encycl.* 2. 1. 105. *Pluk. amalth.* 85. *t.* 439. *f.* 6.
Capſules oblong ſubſeſſile hairy mucronate, two or three together, leaves lanceolate-oblong ſmooth, ſerratures equal.
14. Corchorus flexuoſus.
Thunb. in Linn. tranſ. 2. 335.
Leaves doubly-ſerrate cuſpidate, ſtem flexuoſe.
15. Corchorus ſerratus.
Thunb. in Linn. tranſ. 2. 335.
Leaves oblong ſerrate cuſpidate, branches ſmooth.
16. Corchorus ſcandens.
Thunb. in Linn. tranſ. 2. 335.
Leaves ovate ſetaceous-ſerrate oppoſite, ſtem and branches flexuoſe-ſcandent.]

DESCRIPTIONS, *&c.*

1. It is an annual plant, about two feet high, and dividing into ſeveral branches. Leaves ſome ſpear-ſhaped, others oval, ſome almoſt heart-ſhaped, deep-green, ſlightly indented on their edges, having near their baſe two briſtly reflex ſegments; they are on very long ſlender petioles; eſpecially the lower one. Flowers ſeſſile, ſolitary, yellow. [Stipules ſimple, red at the baſe. Leaves three-nerved. Capſules fuſiform, five-celled, furrowed, with about five teeth, or obtuſe[a]. Very obſcurely five-cornered, leſſening at top into a beak. Seeds of an almoſt pyramidal form, dark brown, fixed in a double row along the middle edge of the partitions[b].]

Native both of the Eaſt and Weſt Indies, and of Africa. Rauwolf ſays it is ſown in great plenty about Aleppo as a pot-herb, the Jews boiling the leaves to eat with their meat.

[Cultivated 1731, by Mr. Miller[c]. It flowers in july and auguſt, and the ſeeds ripen in autumn.

2. Root annual. Stems ſmooth and even, erect, a foot in height, round, green. Stipules ſetaceous, ſmall. Leaves alternate, petiolate, marked with lines, naked, the under ſurface ſcabrous, lanceolate, wave-ſerrate. Peduncles nearly oppoſite to the leaves, ſhort, two-cleft or two-flowered. Calyxes angular. Petals narrow, pale yellow. Capſules linear, of a triangular priſmatic form, ſcabrous, the angles ſtreaked with a line, obtuſe at the end, and ſimple[d].

Jacquin remarks, that the whole plant is ſomewhat rugged, that the peduncles ſuſtain from one to three flowers, on very ſhort pedicels, that the calyx is obſcurely tinged with purple, that the petals are obovate, either ſlightly emarginate or entire; he calls the pericarp a ſilique, and ſays that it is two inches long, three-celled and three-valved; and that the ſeeds, which are ſmall and blue, are ranged in a double row along the valves.

Native of Arabia, where it was found by Forſkæhl.

3. Stem ſmooth and even, green. Stipules three-parted, ſetaceous. Leaves marked with lines, lanceolate, wave-ſerrate. Capſules linear, ſcabrous. Styles three, very much divaricated, bifid[e].

Native of the Eaſt Indies.]

4. Stem ſtrong, two feet high, divided at top into two or three branches. Leaves on long petioles, and between them ſeveral ſmaller leaves nearly of the ſame form, ſitting cloſe to the branches. The flowers come out ſingly on the ſide of the branches.

[Stem roughiſh, purpliſh, with divaricating branches. Stipules ſetaceous. Capſules linear, hexangular, the angles compreſſed, each pair approximating. Styles three, bifid. The teeth at the end of the capſule divaricate very much[f]. Capſule terminated by three very ſpreading beaks, bifid at the end: the valves have obſcure tranſverſe wrinkles within, inſtead of partitions; on the outſide they have a double wing at the back, which is notchletted, and ſomewhat waved. Seeds ſmall, variouſly cornered, blackiſh[g].]

Native of the Weſt Indies. [Cultivated 1739, by Mr. Miller[h].]

5. This riſes with a ſlender ſtalk about three feet high, ſending out ſeveral weak branches. At each joint is one leaf of an oblong heart ſhape, ending in a long acute point, ſerrate, and on a ſhort petiole. The flowers come out ſingly on the ſide of the branches, to which they ſit very cloſe; they are ſmaller than thoſe of the former ſorts.

[The leaflets of the calyx are concave, bent in, dotted on the outſide, and ſhorter than the corolla. Petals emarginate[i].

Native of the Eaſt-Indies, and China. Cultivated 1731 by Mr. Miller[k].

6. This ſhrub grows to the height of a man, with many round branches, the young ones villoſe. Leaves alternate, petioled, crenate, thickiſh, veined, hoary underneath. Peduncles lateral, umbelled, having from four to ſeven flowers, void of ſcent, each on its proper pedicel. Calycine leaflets oblong, concave, villoſe. Petals yellow, roundiſh, ſpreading very much, the length of the calyx. Stamens the length and colour of the corolla. Germ villoſe: ſtyle the length of the ſtamens: ſtigma obtuſe. Capſule ovate, a little bent in, lanuginoſe, obtuſe, two-celled.—It varies in Jamaica with oblong leaves[l]. This variety is figured by Jacquin, hort. t. 57. f. 2.

Thunberg deſcribes his C. tomentoſus thus. *Stem* ſhrubby, round, erect, branched, purple, ſmooth, two feet high and more. Branches alternate, at bottom purple and ſmooth, at top tomentoſe, erect, wand-like. Branchlets filiform, very ſpreading, tomentoſe. *Leaves* alternate, petiolate, nerved, ſpreading. Petiole very ſhort, tomentoſe; as is alſo the calyx. *Flowers* axillary and terminating, uſually ſolitary. Corolla orange-coloured. Capſule cylindric, woolly.—This is very diſtinguiſhable from the other ſorts by its tomentoſe leaves. Japan, flowering in ſeptember and october.

Native of the Weſt-Indies and Japan.

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[a] Linn. mant.
[b] Gærtner.
[c] Hort. kew.
[d] Linn. mant. & ſyſt.
[e] Ibid.
[f] Ibid.
[g] Gærtner.
[h] Hort. kew.
[i] Lin. ſyſt.
[k] Hort. kew.
[l] Jacquin.

7. *Stem* ſhrubby, two feet high and more, ſmooth. *Leaves* from alternate buds many, petiolate, ſubcordate, ovate, acuminate, gaſh-ſerrate, the ſerratures ſerrate, acute, all ſubſetaceous; nerved, villoſe, eſpecially the nerves underneath. Petiole a line in length. Flowers terminating, ſolitary, on ſhort peduncles. Corolla dark-yellow or orange-coloured.—Native of Japan, where it is alſo cultivated for the elegance of its flowers, which appear in february and the following months [m].

8. Root annual. Stem upright, round, branched, eſpecially at top, from two to three feet high. Leaves alternate, lanceolate, acute, finely ſerrate, on ſhort petioles, ſomewhat hairy, wrinkled on both ſides. Flowers without ſcent, axillary, peduncled, ſolitary or in pairs. Calycine leaflets hiſpid, ſpreading very much, flat, lanceolate-linear, acuminate, yellowiſh green. Petals yellow, ſhorter than the calyx, ſpreading much, very blunt, narrowed a little towards the baſe. Stamens the ſame length and colour with the petals. Germ oblong, columnar, hiſpid, with whitiſh, upright hairs. Style filiform, the length of the ſtamens: ſtigma capitate. Capſule linear, acute, hiſpid, brown, near an inch long, two-furrowed, two-valved. Seeds black, angular, ſmall.

Native of the Weſt Indies [n].

9. It is an herbaceous plant, but branched like a ſhrub, with a round ſmooth ſtem, and alternate upright pubeſcent branches. Leaves petioled, alternate, ſmall, nerved, ſmooth, with ſmaller leaves in the axils. Stipules ſubulate, oppoſite [o].

Stem almoſt ſhrubby, erect, panicled, ſubpubeſcent. *Leaves* lanceolate or ovate-oblong, equally ſerrated without an elongated tooth at the baſe. Peduncles one-flowered (few-flowered, oppoſite to and ſhorter than the leaf, flowers ſmall, yellow, nodding, *Swartz.*) lateral, without bractes. Germs hairy. Siliques two-valved, compreſſed.——The vernal flowers have no petals, a four-leaved calyx, and four ſtamens: the autumnal, have five petals, a five-leaved calyx, and many ſtamens [p]. Cultivated 1732, by Mr. Miller. It flowers from june to auguſt [q]: in its own country almoſt the whole year. Very common in all the ſugar colonies, in dry ſandy places; ſeldom riſing above two feet and a half. It is generally uſed for beſoms by the negroes [r].]

10. Height about two feet, dividing into ſmall branches. Flowers very ſmall, pale yellow, ſucceeded by ſwelling, rough, four-cornered ſeed-veſſels, about an inch long, flatted at top, where there are four reflex horns, giving them ſome reſemblance to the Clove.

Native of both Indies.

11. Height three feet, with ſeveral weak ſide branches. Leaves about three inches long, and one inch broad in the middle, leſſening gradually to both ends, ſitting cloſe to the branches. The flowers come out ſingly oppoſite to the leaves; they are very ſmall, of a pale yellow, and are ſucceeded by ſeed-veſſels near two inches long, flat, two-celled, with ſmall angular ſeeds.

Native of Carthagena in New Spain.

12. This riſes with a ſtrong herbaceous ſtalk between three and four feet high, ſending out ſeveral ſide branches, which grow erect. Leaves on long ſlender petioles: and between them many ſmaller leaves nearly of the ſame form, ſitting cloſe to the branches. The flowers come out from the ſide of the branches, on ſhort peduncles, are very ſmall, of a pale yellow, and are ſucceeded by flat ſeed-veſſels near three inches long, ending in two horns; they are two-celled, and filled with ſmall angular ſeeds.

Native of Jamaica, whence the ſeeds were ſent by Dr. Houſtoun.

[13. Branches round, ſmooth. Leaves petioled, narrow, blunt, the lower ſerratures not briſtle-ſhaped. Fruits aſh-coloured with hairs, three-valved.—Native of the Eaſt Indies [s].

14. Stem round, ſlightly angular by the decurrent leaves, ſmooth, erect, two feet high. Leaves alternate, petioled, obliquely cordate, ovate, villoſe, patulous, two inches long. Flowers at the ends of the branches, yellow.

15. Stem erect, ſmooth. Branches round, purple, erect. Leaves alternate, petioled, ſerratures large, ſetaceous at the tip, the upper ſurface very finely villoſe-ſcabrous, the under ſmooth, two inches long, patulous.

16. Stem round. Branches oppoſite, ſimilar, divaricating. Leaves on very ſhort petioles, rounded at the baſe, acuminate, an inch long. At the ends of the branchlets are ſolitary, yellow flowers.

Theſe three are natives of Japan [t].]

PROPAGATION AND CULTURE.

All theſe ſorts are too tender to thrive in England in the open air, therefore their ſeeds muſt be ſown on a hot-bed in the ſpring; and when the plants are come up fit to remove, they ſhould be tranſplanted on a freſh hot-bed to bring the plants forward, otherwiſe they will not ripen ſeeds. After the plants are rooted in the new hot-bed, they muſt have free air admitted to them every day, in proportion to the warmth of the ſeaſon, for they muſt not be drawn up weak; when the plants have obtained ſtrength, they ſhould be tranſplanted each into a ſeparate pot, and plunged into a hot-bed, obſerving to ſhade them from the ſun till they have taken root; then they muſt have a large ſhare of air every day, and ſhould be frequently refreſhed with water; and in june they ſhould be gradually inured to the open air, and part of them may be ſhaken out of the pots, and planted in a warm border, where, if the ſeaſon proves warm, they will flower and perfect their ſeeds; but as theſe will ſometimes fail, it will be proper to put one or two plants of each ſort into pots, which ſhould be placed in a glaſs-caſe, where they may be ſcreened from bad weather, and from theſe good ſeeds may always be obtained. The ſixth ſort may alſo be treated in the ſame manner during the ſummer ſeaſon, but in autumn the plants muſt be removed into the ſtove, and plunged into the bark-bed, and theſe will flower early the ſecond year, and ripen ſeeds.

CORDIA. (*So named by Plumier, from Euricius Cordus, whoſe true name was Heuricus Urbanus, and Valerius his ſon, German botaniſts of the ſixteenth century.*)

Lin. gen. n. 256. *Reich.* 276. *Schreb.* 350. *Juſſ.* 128. *Plum.* 14. Sebeſtena. *Dill. elth. t.* 255. *Gærtn.* 76.—Patagonula. *Lin. gen.* 208. *Reich.* 277. *Schreb.* 351. *Dill. elth. t.* 226.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Aſperifoliæ*. *Borragineæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, tubular, toothed at the top, permanent.

COR. one-petalled, funnel-form. *Tube* patulous, length of the calyx. *Border* erect-ſpreading, cut into five, (four or ſix) obtuſe *diviſions*.

STAM. *Filaments* five, ſubulate. *Anthers* oblong, length of the tube.

PIST. *Germ* roundiſh, acuminate. *Style* ſimple, length of the ſtamens, bifid at top; *diviſions* bifid. *Stigmas* obtuſe.

PER. *Drupe* globoſe, acuminate, growing to the calyx.

SEED. *Nut* furrowed, four-celled.

OBS. C. ſpineſcens *has both calyx and corolla bell-ſhaped.* R.

ESSENTIAL CHARACTER.

Cor. funnel-form. *Style* dichotomous. *Drupe* with two-celled nuts, (two or four-celled, *G.*)

SPECIES.

1. Cordia Myxa. *Smooth-leaved Cordia, Sebeſten,* or *Aſſyrian Plum.*

Lin. ſpec. 273. *ſyſt.* 230. *Reich.* 529. *mat. med.* 67. *hort. cliff.* 63. *Plenck, ic. t.* 116.

Myxa ſ. Sebeſten. *Bauh. hiſt.* 1. 197. *Raii hiſt.* 1555. *Park. theat.* 252. *n.* 1.

Sebeſtena ſylveſtris & domeſtica. *Bauh. pin.* 446. *Alp. ægypt.* 30.—officinalis. *Gærtn. fruct.* 364.

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[m] Thunberg.
[n] Jacquin.
[o] Swartz.
[p] Linn. ſpec. & ſyſt.
[q] Hort. kew.
[r] Browne.
[s] Vahl.
[t] Thunberg.

S. domeſt. ſ. Myxa. *Comm. hort.* 1. 139. *t.* 72. *Blackw. t.* 398.
Prunus Sebeſtena. *Pluk. alm. t.* 217. *f.* 3.
Cornus ſanguinea. *Forſk. ægypt.* 33. *n.* 10.
Vidi-maram. *Rheed. mal.* 4. 77. *t.* 37. *Raii hiſt.* 1563.
Leaves ovate, ſmooth on the upper ſurface; corymbs lateral; calyxes ten-ſtriated.

[2. Cordia ſpineſcens.
Lin. ſyſt. 230. *Reich.* 530. *mant.* 206.
Leaves ovate acute ſerrate ſcabrous; petioles ſubſpineſcent.]

3\. Cordia Sebeſtena. *Rough-leaved Cordia.*
Lin. ſpec. 274. *ſyſt.* 230. *Reich.* 530. *Jacqu. amer.* 42. *pict.* 26. *t.* 44. *Brown. jam.* 202. *Plum. gen.* 13. *ic.* 105. *Plenck, ic. t.* 115.
Sebeſtena ſcabra, fl. miniato criſpo. *Dill. elth.* 340, *t.* 255. *f.* 331.
Caryophyllus. *Sloan. jam.* 2. 20. *t.* 164. *Raii ſuppl.* 86. *Cateſb. car.* 2. *t.* 91.
Novella nigra. *Rumph. amb.* 226. *t.* 75. *Burm. ind.* 59.
Leaves oblong-ovate repand ſcabrous.

[4. Cordia Geraſcanthus.
Lin. ſpec. 273. *ſyſt.* 230. *Reich.* 531. *Jacqu. amer.* 43. *t.* 175. *f.* 16. *pict.* 27. *t.* 259. *f.* 12. *Swartz obſ.* 86. *Brown. jam.* 170. *t.* 29. *f.* 3. (*Geraſchanthus.*)
Leaves lanceolate-ovate ſcabrous; panicle terminating; calyxes ten-ſtriated.]

5\. Cordia macrophylla. *Broad-leaved Cordia.*
Lin. ſpec. 274. *Reich.* 531. *Brown. jam.* 168. 2. *Mill. dict. edit.* 7. *add. n.* 2. (*Collococcus.*) *Sloan. jam.* 2. 130. *t.* 221. *f.* 1. *Raii dendr.* 41. 6. (*Prunus.*)
Leaves ovate villoſe a foot and half in length.

6\. Cordia Collococca. *Long-leaved Cordia.*
Lin. ſpec. 274. *Reich.* 531. *Brown. jam.* 167. 1. *Mill. dict. edit.* 7. *add. n.* 1. (*Collococcus.*) *Sloan. jam.* 2. 95. *n.* 12. *t.* 203. *f.* 2. *Raii dendr.* 46. 15. *Pluk. phyt. t.* 158. *f.* 1. (*Ceraſus.*)
C. glabra. *Lin. ſpec. edit.* 1. 191.
Leaves cordate-ovate quite entire; flowers corymbed; calyxes tomentoſe within.

[7. Cordia Patagonula. *Spear-leaved Cordia,* or *Patagonula.*
Ait. hort. kew. 1. 259.
Patagonula americana. *Lin. ſpec.* 212. *ſyſt.* 230. *Reich.* 532. *Dill. elth.* 304. *t.* 226. *f.* 293.
Leaves oblong-lanceolate ſmooth on both ſurfaces, upper ones ſerrate; branchlets hairy.

8\. Cordia aſpera.
Forſt. flor. auſtr. n. 109.
Leaves ovate acuminate rough; flowers in cymes wrinkled.

9\. Cordia dichotoma.
Forſt. flor. auſtr. n. 110.
Leaves oblong-ovate ſcarcely crenate; corymbs dichotomous.

10\. Cordia retuſa.
Vahl. ſymb. 2. 42. *Pluk. phyt. t.* 31. *f.* 1.
Leaves in bundles wedge-form retuſe three-toothed.

11\. Cordia Micranthus.
Swartz prodr. 47.
Leaves elliptic lanceolate quite entire membranaceous veined, racemes compound lax.

12\. Cordia elliptica.
Swartz prodr. 47.
Leaves elliptic acuminate entire coriaceous, branches compound diffuſed, drupes acuminate.

DESCRIPTIONS, *&c.*

1\. Leaves like thoſe of the Alder, ſerrate-angulate, ſcabrous underneath[a], three inches long, oppoſite, flat, entire, obtuſe, on a round petiole, half an inch in length. Peduncles panicled, terminating, ſubcorymbed. Petals white, revolute. Fruit inferior, red, nearly an inch in diameter[b]. According to Gærtner, it is a black, berried drupe. Fleſh ſucculent. Shell bony, ovate, emarginate at top and bottom, perforated, of a turgid lenticular form, obſcurely ſcrobicular, ſubquadrilocular; two cells fertile, the others uſually barren or quite obliterated.

The timber of this tree is tough and ſolid, it is uſed for procuring fire by friction; the leaves bruiſed with thoſe of Datura Metel are applied to the forehead in the head-ach; a glue is prepared from the fruits, which are alſo eaten by children[c].

Native of Arabia and the Eaſt Indies. Cultivated 1640[d].]

Mr. Miller ſays it was very rare in this country till the year 1762, when the Daniſh travellers ſent ſome of the fruit from Egypt, and ſome plants were raiſed in the Chelſea garden.

[2. *Branches* ſtrict, tomentoſe, ferruginous. *Leaves* alternate, petiolate, tomentoſe, more ſcabrous on the upper ſurface, the ſize of Cherry leaves. *Petiole* very ſhort, ſeparating at the joint, but the baſe becoming a thorn as in *Volckameria*, rigid, and obliquely truncate on the outſide. *Raceme* from the axils of the leaves, ſimple or bifid, filiform, the length of the leaf. *Fruits* ſcattered, ſeſſile, black, the ſize of Currants. *Calyx* bell-ſhaped, obſcurely five-toothed. *Corolla* bell-ſhaped, five-toothed, twice as large as the calyx. *Style* filiform, twice bifid at top. *Stigmas* acute.—Native of the Eaſt Indies[e].]

3\. Stems ſeveral, ſhrubby, eight or nine feet high, having towards the top rough alternate leaves on ſhort petioles, of a deep green on their upper ſide. Flowers terminating, in large cluſters upon branching peduncles, ſuſtaining one, two, or three flowers. Corolla large, with a long tube, ſpreading open at top, and there divided into five obtuſe ſegments; it is of a beautiful ſcarlet, and makes a fine appearance. A ſmall piece of the wood put on a pan of lighted coals, will perfume a whole houſe with a moſt agreeable ſmell.

[The younger leaves are ſerrate, the full grown ſcarcely repand, the upper certainly quite entire. Petioles round. No ſtipules. Calyx cylindric, oblong, with a trifid mouth. Corolla ſhaped as in Marvel of Peru, tawny-yellow, extremely wrinkled before it opens, like the Poppy. Style twice bifid[f].

In Jacquin's figure the colour is like that of the bloody Wall-flower, not ſcarlet[g].

It is adorned, ſays Browne, with large bunches of fine ſcarlet flowers, the moſt beautiful and agreeable of any I have yet obſerved in America.

Theſe come out at the tops of the branches fifteen or twenty together, the edge is fringed, but the ſurface ſinuous and curled; the colour at firſt is a high vermilion, becoming ſcarlet, and at length purpliſh; they have no ſcent. The fruit is in the form of an inverted Pear[h].

Native of both Indies and the Society Iſles.

From the juice of the leaves, with that of the fruit of a ſpecies of Fig, is prepared the fine red colour with which they dye their cloths in Otaheite. The Fig however will produce the colour with the leaves of ſeveral other plants[i].

Cultivated 1728, in Dr. Sherard's garden at Eltham[k].

4\. Stem and branches unarmed, patulous, round, ſmooth. Leaves petioled, ſcattered, acuminate, entire, veined (eſpecially behind) ſmooth. Panicles large, compoſed of patulous, alternate, trichotomous, many-flowered branchlets; the laſt pedicels three-flowered. Flowers rather large, veined, permanent, ſhrivelling. Calyx tubular, five-toothed, ten-ſtreaked. Tube of the corolla ſpreading towards the opening, the bottom nectareous: border five-cleft; the ſegments blunt, entire. Filaments faſtened to the corolla from the baſe to the middle: anthers incumbent, linear, yellow. Germ oblong: ſtyle ſhorter than the ſtamens, dichotomous: ſtigmas blunt, yellow[l].

This tree riſes to a conſiderable height, but ſeldom exceeds twenty or thirty inches in diameter. It is pretty much branched towards the top, and furniſhed with oblong nervous leaves. The flowers have no ſcent, are very white, and grow in great numbers at the extremities of the branches; as the germ grows larger, they fade and turn of a dark or dirty brown colour, continuing upon the tree until the whole fruit, which ſeldom grows to a perfect ſtate, falls off. It is eſteemed one of the beſt timber trees in Jamaica, of which it is a native. The wood is of a dark brown colour, and gently ſtriped; it is tough and elaſtic, of a fine grain, and eaſily worked. They call it Spaniſh Elm, or Prince-wood[m]. It is found in other iſlands of the Weſt Indies, and is called by the French Bois de Chypre.

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[a] Linn. ſyſt.
[b] Forſkæhl.
[c] Forſkæhl.
[d] Hort. kew.
[e] Linn. mant.
[f] Linn. ſpec.
[g] Murray in Linn. ſyſt.
[h] Dillenius.
[i] Cook's firſt voyage, 2. 214, 215.
[k] Dillenius.
[l] Swartz.

5. This tree alſo riſes to a conſiderable height, (fifty feet) but is ſeldom above twelve or ſixteen inches in diameter, ſhooting generally by a ſtraight trunk. The leaves are very large and rough. The berries are white, (reddiſh, *Sloane*) the ſize of ſmall Cherries. The heart of the tree is of a yellowiſh colour, and pretty good timber. It is called in Jamaica the broad-leaved Cherry-tree[n].

6. This tree ſeldom riſes above fourteen or ſixteen feet, (Sloane ſays fifty feet) and ſpreads pretty much at top. The leaves are rugged, obliquely veined, and diſpoſed alternately. The berries are red, ſucculent, the ſize of our ſmalleſt European Cherries, and diſpoſed in umbellated groups. Turkeys and other poultry feed much upon them; the pulp is ſweetiſh, and of a clammy conſiſtence. In Jamaica it has the name of Clammy Cherry, or Turkey-berry tree[o].

Native of Jamaica and moſt of the other iſlands. Cultivated ſeveral years before 1759[p].

7. The appearance of this ſhrub is between that of Privet and Alaternus. Stem ſtraight; bark greeniſh aſh-colour ſpotted with white; the upper part and particularly the ends of the branches covered with long hairs. Leaves like thoſe of Privet, of a ſhining pale green, but in form approaching thoſe of Alaternus; ſmooth, but along the edges and on the middle nerve underneath having ſlender greeniſh hairs. The flowers come forth among the leaves in ſmall bunches, as in Privet: corolla ſcarcely tubular, cut almoſt to the bottom into five (ſometimes four) equal ſegments, white or herbaceous, having the ſmell of Elder flowers; calyx ſhort, cut into the ſame number of ſegments with the corolla, theſe are acuminate, of a greeniſh colour, and extend almoſt to the bottom. Stamens five (or four, when the diviſions of the calyx and corolla are four.) The flowers, when they decay, turn of a reddiſh brown, like the Privet.—Cultivated in the Eltham garden about 1728, from ſeeds that came from Patagonia in South America[q].

Linneus ſaw that this plant is nearly allied to the genus *Cordia*. He makes the eſſence of *Patagonula* to conſiſt in the largeneſs of the fructiferous calyx. The corolla alſo having little or no tube is wheel-ſhaped: and the fruit is a capſule. With the ſeeds we are not yet well acquainted. I have followed the ſkilful author of *Hortus Kewenſis*, in reducing it to this genus. It flowers moſt part of the ſummer.

8. Native of the iſland of Tongatabu.

9. Native of New Caledonia[r].

10. Branches round, ſmooth, ſomewhat hairy at the tip. Leaves ſeſſile, unequal, have three, and ſometimes four blunt teeth at the end, the middle ones ſmaller; the upper ſurface is ſhining, and over it are ſcattered ſhining ſcales, from the centre of which ariſe minute white ſolitary appreſſed hairs, it is ſcarcely rugged; and the lower ſurface is even, paler and void of dots. The buds are tomentoſe tubercles. Peduncles from the ſame bud with the leaves, ſolitary, one-flowered, pubeſcent, ſhorter than the leaves. Calyx five-parted; parts lanceolate, broader outwards, acute, hairy. Style ſometimes ſingle, dichotomous; ſometimes two ſtyles, which are bifid and the length of the corolla: ſtigmas acute. Fruit the ſize of Pepper, the calyx not growing to it, four-celled: in each cell ſeveral ſeeds. There is a tranſverſe furrow in the middle of the partition.

It has the habit of Cordia with ſcaly leaves, and a ſtyle commonly dichotomous; but it recedes, as is apparent, in ſome particulars[s].

11. Native of Jamaica and other iſlands of the Weſt Indies.

12. Native of Jamaica[t].]

PROPAGATION AND CULTURE.

Theſe plants, being natives of hot countries, are too tender to live through the winter in this country, unleſs they are preſerved in a ſtove: they are all propagated by ſeeds, which muſt be procured from the countries of their natural growth; theſe ſeeds muſt be ſown in ſmall pots, which muſt be plunged into a good hot-bed of tanners bark in the ſpring; and if the ſeeds are freſh and good, the plants will begin to appear in ſix or eight weeks after. Theſe muſt be brought forward in the hot-bed, by being treated as other tender exotic plants, obſerving frequently to water them in ſummer; and in july, if the plants have made much advance, they ſhould be gradually hardened, otherwiſe they will grow ſo weak as not to be eaſily preſerved through the winter. As theſe plants obtain ſtrength, they will become more hardy; but during the two firſt winters, it will be proper to plunge them into the tan-bed in the ſtove; but when they begin to have woody ſtems, they may be placed on ſhelves, in a dry ſtove; where, if they are kept in a moderate degree of heat, they may be preſerved very well (eſpecially the third ſort) which is ſomewhat hardier than the others. This may alſo be placed abroad in a warm ſituation, in the beginning of july, where the plants may remain till the middle of ſeptember, provided the ſeaſon continue warm, otherwiſe they muſt be removed into the ſtove ſooner.

[CORDIA. See *Ehretia*.

CORDUBA. See *Aſparagus*.

CORDYLINE. See *Dracæna* and *Yucca*.]

COREOPSIS. (From κόρις, *cimex, a bug, or tick; and ὄψις, facies, appearance. The ſeed having ſome reſemblance of theſe inſects.*)

Lin. gen. n. 981. *Reich.* 1062. *Schreb.* 1325. *Gærtn. t.* 171. *Juſſ.* 188. Ceratocephaloides. *Vaill. act.* 1720.

Claſſ. 19. 3. Syngeneſia Polygamia Fruſtranea.

Nat. order of *Compoſitæ oppoſitifoliæ. Corymbiferæ* Juſſ.

GENERIC CHARACTER.

CAL. *Common* either ſimple ſubimbricate, or doubled: the *exterior* uſually with eight *leaflets*, which are coarſe, and placed in a circle: the *interior* with as many larger ones, membranaceous and coloured.

COR. *Compound* rayed: *corollets* hermaphrodite numerous in the diſk. *Females* eight, in the ray.

Proper, of the hermaphrodite tubular, five-toothed. *Female* ligulate, four-toothed, ſpreading, large.

STAM. in the hermaphrodites: *Filaments* five, capillary, very ſhort. *Anther* cylindric, tubular.

PIST. in the hermaphrodites: *Germ* compreſſed. *Style* filiform, length of the ſtamens. *Stigma* bifid, acute, ſlender.

In the females: *Germ* like the hermaphrodites. *Style* and *ſtigma* none.

PER. none. *Calyx* ſcarce altered.

SEED in the hermaphrodite ſolitary, orbiculate, convex on one ſide, concave on the other, with a tranſverſe protuberance at top and bottom, ſurrounded by a membranaceous edge, with a two-horned tip. In the *females* none.

REC. chaffy.

OBS. *This genus is* Bidens *with a ray.* G.

ESSENTIAL CHARACTER.

Cal. erect, many-leaved, ſurrounded at the baſe with ſpreading rays. *Down* two-horned. *Rec.* chaffy.

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[m] Browne. [n] Ibid. [o] Ibid. [p] Mill. dict. edit. 7. addenda. [q] Dillenius. [r] Forſter.

[s] Vahl. [t] Swartz.

SPECIES.

1. Coreopſis verticillata. *Whorl-leaved Coreopſis,* or *Tickſeed Sun-flower.*
Lin. ſpec. 1281. *Reich.* 3. 889. *Gron. virg.* 131. 308. *Curtis magaz. t.* 156.
Ceratocephalus delphinii foliis. *Vaill. act.* 1720. *Ehret. pict. t.* 9. *f.* 1.
Chryſanthemum marianum, &c. *Pluk. mant. t.* 344. *f.* 4.
Leaves decompound-linear.

[2. Coreopſis coronata.
Lin. ſpec. 1281. *Reich.* 3. 889.
Ceratoceph. fol. pentapteris acutis, fl. radiato. *Vaill. act.* 1720. *p.* 328.
Bidens pentaphylla, fl. rad. *Plum. ſpec.* 10. *ic.* 53. *f.* 2.
Leaves pinnate ſerrate marked with lines ſmooth.

3. Coreopſis leucantha.
Lin. ſpec. 1282. *Reich.* 3. 889. *amœn.* 4. 291.
Leaves pinnate ſerrate; ray of the flowers of a different colour from the diſk.

4. Coreopſis chryſantha.
Lin. ſpec. 1282. *Reich.* 3. 889.
Bidens triphylla, angelicæ fol., fl. radiato. *Plum. ſpec.* 10. *ic.* 53. *f.* 1.
Leaves ternate ovate-oblong ſerrate; ray of the flowers concolor.]

5. Coreopſis tripteris. *Three-leaved Coreopſis.*
Lin. ſpec. 1282. *Reich.* 3. 890. *hort. upſ.* 269. *Gron. virg.* 131. *Mor. hiſt.* 3. 21. *n.* 45. *ſ.* 6. *t.* 3. *f.* 44. *Raii ſuppl.* 215. 80. (*Chryſanthemum.*)
Leaves ſubternate quite entire.

[6. Coreopſis alba. *Climbing Coreopſis.*
Lin. ſpec. 1282. *Reich.* 3. 890. *Brown. jam.* 321. *n.* 3. *Herm. par. t.* 124. *Pluk. alm. t.* 160. *f.* 3. (*Chryſanthemum.*)
Leaves ſubternate cuneate ſerrate.

7. Coreopſis reptans. *Trailing Coreopſis.*
Lin. ſpec. 1281. *Reich.* 3. 890. *amæn.* 5. 407. *Sloan. jam.* 1. 261. *n.* 24. *t.* 154. *f.* 2. 3. *Smith ſpicil.* 20. *t.* 22.
Leaves ſerrate ovate, upper ones ternate; ſtem creeping.

8. Coreopſis baccata. *Berried Coreopſis.*
Lin. ſyſt. 782. *ſuppl.* 380.
Leaves ſerrate ovate; ſeeds berry-form.

9. Coreopſis auriculata. *Ear-leaved Coreopſis.*
Lin. ſpec. 1282. *Reich.* 3. 890. *Gron. virg.* 131. *Pluk. alm. t.* 83. *f.* 5. & *t.* 242. *f.* 4. *Mor. hiſt.* 3. 21. *n.* 46. *ſ.* 6. *t.* 3. *f.* 45. (*Chryſanthemum.*)
Leaves quite entire ovate; the lower ones ternate.]

10. Coreopſis lanceolata. *Spear-leaved Coreopſis.*
Lin. ſpec. 1283. *Reich.* 3. 891. *hort. cliff.* 420. *Dill. elth.* 55. *t.* 48. *f.* 56. *Mart. cent. t.* 26. (*Bidens.*)
Leaves lanceolate quite entire ciliate.

[11. Coreopſis Bidens.
Lin. ſpec. 1281. *Reich.* 3. 891. *fl. ſuec. n.* 772. *Mor.* 3. 17. *n.* 23. *ſ.* 6. *t.* 5. *f.* 22. (*Chryſanthemum.*) *Barr. ic.* 1209. (*Eupatorium.*)
Bidens cernua β. *Hudſ. angl.* 356. *With.* 883.
Leaves lanceolate ſerrate oppoſite ſtem-claſping.]

12. Coreopſis alternifolia. *Alternate-leaved Coreopſis.*
Lin. ſpec. 1283. *Reich.* 3. 891. *hort. upſ.* 270. *Gærtn. fruct.* 2. 457. *Jacqu. hort.* 2. 50. *t.* 110. *Pluk. alm. t.* 159. *f.* 3. *Mor.* 3. 25. *n.* 83, 84. *ſ.* 6. *t.* 7. *f.* 75, 76. *Raii hiſt.* 337. 2. (*Chryſanthemum.*) *Zan. rar.* 85. *t.* 58.
Leaves lanceolate ſerrate alternate petiolate decurrent.

[13. Coreopſis aurea. *Hemp-leaved Coreopſis.*
Ait. hort. kew. 3. 252.
Leaves ſerrate; root-leaves three-parted; ſtem-leaves trifid and entire lanceolate-linear.

14. Coreopſis craſſifolia. *Thick-leaved Coreopſis.*
Ait. hort. kew. 3. 253.
Leaves obovate-oblong obtuſe quite entire pubeſcent.

15. Coreopſis anguſtifolia. *Narrow-leaved Coreopſis.*
Ait. hort. kew. 3. 253.
Leaves alternate linear-lanceolate quite entire even; petals of the ray oblong trifid, the middle ſegment largeſt.

16. Coreopſis procera. *Tall Coreopſis.*
Ait. hort. kew. 3. 253.
Leaves elliptic acuminate ſerrate petiolate veined decurrent; the lower in whorls, the upper alternate.]

17. Coreopſis radiata.
Mill. dict. n. 5.
Leaves linear-lanceolate, ſharply ſerrate, oppoſite; ray of the flower large, entire.

[18. Coreopſis leucorhiza.
Lour. cochinch. 508.
Leaves pinnate, with five leaflets, ſerrate-gaſhed, ray ſix-flowered, down three-horned.

19. Coreopſis biternata.
Lour. cochinch. 508.
Leaves biternate, ovate-lanceolate, ſerrate, panicle diffuſed, ray ſix-flowered.

20. Coreopſis fœtida.
Cavan. hiſp. 55. *n.* 85. *t.* 77.
Leaves three-lobed, lobes acuminate, ſerrate, middle one longer.]

DESCRIPTIONS, *&c.*

1. Root perennial. Stems many, ſtiff, angular, upwards of three feet high. Leaves oppoſite; leaflets very narrow and entire. Branches oppoſite. Peduncles long, ſlender, one-flowered. Ray yellow; diſk dark purple.

[Leaves often in whorls. Calyx like that of *Bidens,* with a ſpreading calycle[a].

Being a ſhowy plant, growing very tall, and continuing long in flower, it is a great ornament to the ſhrubbery. The florets, though yellow, are uſed in North America to dye cloth red[b].

Native of North America. Cultivated 1759, by Mr. Miller[c]. It flowers from july to ſeptember.

2. The plant is altogether that of *Bidens frondoſa,* but it has the flowers of *C. verticillata,* with a large eight-petalled, ſtriated, oval ray.—Native of Virginia. Annual[d].

3. Stem three or four feet high, four-cornered, ſmoothiſh, the oppoſite ſides channelled. Branches oppoſite. Leaflets five, ſeldom three, ovate, undivided, ſmooth, equal, even, the three outer often confluent, almoſt decurrent by the outer ſide, quite entire at the tip. Petioles channelled, connected on both ſides by villoſe hairs. Flowers terminating, alternate, two or three, on longiſh peduncles. Calyx five-parted, within a ſmaller five-leaved involucre or outer calyx. Ray of the corolla uſually with five white florets, which are ovate, three-toothed at the end, the middle one longeſt, three-nerved underneath. Diſk ſmall, convex, yellow. Seeds with a three-toothed crown, hiſpid backwards. The diſk of ſeeds becomes pyramidal[e].

The flower has the appearance of *Leucanthemum.* The plant is like the foregoing.—Native of America. Annual[f].

Linneus had it from Miller.

4. Stem quadrangular, ſimple, jointed. Leaves on the ſtem oppoſite, ſmooth; on the flowering branches alternate, ſmaller. Flowers terminating, on long peduncles, ſolitary, with ſix three-toothed florets in the ray, which however are often wanting. Native of South America[g].]

5. Root perennial. Stems ſtrong, round, ſmooth, ſix or ſeven feet high. Flowers in bunches at the top of the ſtem, on long peduncles. Ray of the corolla pale yellow; diſk dark purple.

[Moſt of the leaves are ternate, but on the ſtem they are ſometimes almoſt pinnate. It has the calyx of *Bidens* with a ſpreading calycle.——Native of North America[h].

6. This is a climber. The florets of the margin are all neuter, and riſe immediately from the bottom of the inward ſcales. The ſeeds are bidented. Native of the hills in Jamaica[i], and of the iſland of Santa Cruz[k].

7. Root ſmall, fibrous, annual with us. Stem climbing, weak, five feet high, branching, leafy,

[a] Linn. ſpec.

[b] Curtis.

[c] Hort. kew.

[d] Linn. ſpec.

[e] Linn. amoen.

[f] Linn. ſpec.

[g] Plumier.

[h] Linn. ſpec.

[i] Browne.

[k] Linn. ſpec.

ſtriated, ſmooth, ſquare at the baſe, roundiſh above. Leaves oppoſite, petioled, acute, veiny, ſoft, ſlightly downy, bright green, paler beneath: petioles channelled hairy. Stipules none. Peduncles three to five, from the axils of the top leaves, terminating, erect, round, ſtriated, hairy, ſingle-flowered. There are ſometimes two or three lanceolate, entire bractes, at the baſe of the peduncles. Calyx nearly cylindrical, with a few of the outermoſt leaves ſpreading. Florets all gold-coloured; thoſe of the ray with about four teeth and veined; thoſe of the diſk five-cleft. Anthers half excluded, brown. Stigmas downy above, obtuſe. Germ linear, ciliate on the edges. Scales of the receptacle lanceolate, about as long as the florets of the diſk[l].

Linneus ſays it is a large plant, having the calyx of *Bidens*, with a ſpreading calycle. Seeds awned.

Native of Jamaica, in the inland woody parts[m], and probably of Antigua[n].

This cannot be the ſecond Verbeſina of Browne, which he calls upright, and of which he ſays the leaves are entire.—It is named by that author (in his manuſcripts) C. viminea.

Introduced by the Marchioneſs of Rockingham[o].

8. *Stem* eight feet in height, herbaceous, erect. *Leaves* oppoſite, petiolate, three-nerved. *Flowers* at the ends often three, peduncled, very ſmall, like thoſe of *Rudbeckia*. Calyx conſiſting of ſixteen leaflets, broad-ſubulate, recurved, the length of the diſk. Ray of the corolla neuter, yellow, three-toothed, longer than the diſk. *Fruit* naked, almoſt globular, berried; the ſeed within ſomewhat four-cornered, dark-coloured. The fruit is exactly the form of a Blackberry.

Native of Surinam. Dalberg[p].

9. Stem from nine inches to a foot in height, upright, covered with a ſoft down. Lower leaves round or ovate, on petioles an inch in length: upper leaves ternate; the middle leaflet much larger. Flowers golden-coloured, with about eight florets in the ray.

Native of Virginia, whence it was firſt ſent by Baniſter[q].

10. Stems ſeveral, decumbent at bottom, and thence riſing obliquely, a foot and half or two feet in length. At each joint a pair of oblong leaves, with other ſmaller ones. Peduncles round, ſmooth. Florets in the ray eight or nine, broad, with four deep large teeth at the end. Calyx double, each conſiſting of eight or nine leaflets, the outer thick and ſpreading, the inner larger, upright and preſſed cloſe to the flower, tranſparent and of a pale ochre colour. The ſeeds while young are ſhort, flat and compreſſed, but afterwards take the form of a ſmall hemiſpheric beetle or bug; they are of a browniſh purple colour, and have a third awn between the two outer ones.—This plant laſts two or three years, and flowered firſt in the Eltham garden 1725, from ſeeds ſent from Carolina[r].

The ſeeds were received from Cateſby in 1724, and ſown in many gardens near London[s].

11. This is certainly a mere variety of *Bidens cernua* (which ſee) differing in nothing but the radiated flowers, and being frequently found bearing both ſorts from one root, as is well expreſſed in *Fl. dan. t.* 841.—*Coreopſis Bidens* in the Linnean Herbarium agrees with our ſpecimens[t].

12. Root woody, perennial. Stems ſeveral, annual, erect, angular, filled with white pith, winged, from five to ten feet high, ſimple, having only very ſhort ſubdiviſions at the top into roundiſh villoſe peduncles. Leaves rugged on both ſides, of a dirty green colour; the lower ones three or four together or two oppoſite, the reſt alternate, decurrent. Calyx ſpreading very much, or even wholly turned back, conſiſting of a double row of oblong, ſharp, ſmoothiſh leaflets, ſhorter than the florets of the diſk, and uncertain in their number. Florets in the ray from four to eight, yellow; border ſlightly toothed, very concave with the ſides rolled in. Anthers blackiſh. The flowers have but little ſcent, and coming late in october or november, ſeldom perfect their ſeeds with us[u].

Native of Virginia and Canada.] Mr. Miller ſays, in North America every where.—[Cultivated 1759, by Mr. Miller[x].

13. Native of North America. Introduced 1785, by Charles Earl of Tankerville. It flowers in auguſt and ſeptember, and is perennial.

14. Native of Carolina. Introduced 1786, by Mr. Adam Robſon. It flowers from auguſt to october, and is perennial.

15. Native of Carolina and Florida. Cultivated 1778, by John Fothergill, M. D. It flowers in june, and is perennial.

16. Native of North America. Mr. John Cree. Introduced 1765. It flowers in ſeptember and october, and is perennial[y].

Probably the ſame with alternifolia of Linneus; and alternifolia hort. kew. a different plant.]

17. Root annual. Stems upright, four feet high. Leaves acuminate, from three to four inches long, three quarters of an inch broad in the middle, deep green on their upper ſurface, and pale on their lower, on ſhort petioles. At all the upper joints of the ſtem two long ſlender peduncles come out, one on each ſide, having two or three pairs of ſmall leaves on them, and terminated by one flower, having ſeven oval entire florets in the ray, and many dark-coloured ones in the diſk. It flowers in auguſt, and if the autumn prove favourable ripens its ſeeds in october.

Native of South Carolina, whence the ſeeds were ſent by Dr. Dale to Mr. Miller.

[18. Stem herbaceous, a foot and half high, erect, four-cornered, grooved, ariſing from a ſimple, perpendicular, fuſiform, white, fleſhy root. Leaves quinate, lanceolate. Flowers entirely ſaffron-coloured, few together on terminating peduncles. Florets in the ray ſix, ovate, quite entire. Down of the ſeeds three-horned, branched with inverted briſtles. Calyx erect, many-leaved.

19. Stem herbaceous, two feet high, erect, four-cornered, four-grooved. Flowers entirely yellow, in a ſparſe, terminating panicle. Six florets in the ray. Down two-horned, branched. Receptacle flattiſh, naked.—Both theſe are natives of China, near Canton[z].

20. Root annual. Stem round, upright, a fathom in height, branched, covered with a ſhort glutinous nap. Leaves cordate, the lobes broad; they are glutinoſe, ſtrong-ſmelling, a little longer than the petioles, which are connate at the baſe, all oppoſite except the floral leaves, which are ſeſſile and lanceolate. Flowers corymbed. Calyx ovate, conſiſting of ſixteen ovate-acute, keeled leaflets, in a double row, the eight outer ones blackiſh-green, hirſute and glutinoſe. Corolla yellow: florets of the ray eight, border ovate, oblong, three-nerved, ſhortly emarginate; germ white, ſlightly four-cornered, oblong, barren. Germ of the hermaphrodite florets in the diſk ovate-four-cornered, the lateral angles compreſſed, the inner ones narrower; it has two briſtles at the top. Chaffs of the receptacle ovate-acute, keeled. Seeds obovate, obſcurely three-ſided, compreſſed, narrower at the baſe, with two white, capillary, upright toothlets.——Native of Mexico.

It flowered in the royal garden at Madrid in october and november, before the year 1791. This plant is one of the connecting links between this genus and Helianthus[*].]

PROPAGATION AND CULTURE.

1. 2. 5. 9. 12. 13 to 16. Theſe hardy ſorts may be propagated in plenty, by parting the roots; the beſt time for which is in autumn when the ſtalks begin to decay.—The firſt and fifth require a

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[l] Smith. [m] Sloane. [n] Smith. [o] Ibid.
[p] Linn. ſuppl. [q] Moriſon. [r] Dillenius. [s] Mart. cent.
[t] Woodw. Mſs.

[u] Jacquin. [x] Hort. kew. [y] Ibid. [z] Loureiro.
[*] Cavanilles.

light loamy earth, and ſunny expoſure. The twelfth will thrive in almoſt every ſoil and ſituation.

10. The ſeeds of this muſt be ſown upon a gentle hot-bed in the ſpring, and when the plants are fit to remove, they ſhould be ſet each in a ſeparate ſmall pot, and plunged into a freſh hot-bed to bring them forward. In june they ſhould be inured by degrees to the open air, and afterwards ſome of them may be ſhaken out of the pots, and planted in a warm border; where, if the ſeaſon be good, they will flower in the middle of july, and ripen their ſeeds in the beginning of ſeptember.

17. This is propagated by ſeeds, which ſhould be ſown on a warm border in autumn, and the plants will come up the following ſpring; for if the ſeeds are ſown in the ſpring, the plants ſeldom riſe till the year after. When the plants are fit to remove, they ſhould be carefully taken up, and either planted where they are deſigned to remain, or into a nurſery-bed, at four inches diſtance, to get ſtrength, obſerving to ſhade them from the ſun till they have taken freſh root: after which, thoſe which are planted out for good, will require no other treatment but to keep them clean from weeds; and as they advance in height, they ſhould be ſupported by ſticks, otherwiſe the ſtrong winds in autumn often break them; and thoſe which were placed in a nurſery-bed, when they have obtained proper ſtrength, ſhould be taken up and tranſplanted with balls of earth to their roots, where they are deſigned to ſtand for flowering.

As theſe plants continue to produce flowers till the froſt puts a ſtop to them, they merit a place in every curious garden, eſpecially thoſe which do not ramble and ſpread too much. The firſt is ſeldom preſerved, but in botanic gardens for the ſake of variety.

[Coreopsis. See *Rudbeckia anguſtifolia.*

Coreta. See *Corchorus.*]

CORIANDRUM. (Κοριαννόν *of Theophr. & Dioſc. Coriandrum of Pliny. So named from* κορις, *a bug; the freſh leaves bruiſed, emitting a ſtrong ſcent, very like that of the bug.*)

Lin. gen. n. 356. *Reich.* 386. *Schreb.* 488. *Tourn.* 168. *Gærtn.* 22. *Juſſ.* 220.

Claſſ. 5. 2. Pentandria Digynia.

Natural order of *Umbellatæ*, or *Umbelliferæ.*

GENERIC CHARACTER.

Cal. *Umbel univerſal* with few rays: *partial* with very many. *Involucre univerſal* ſcarce one-leafed: *partial* three-leaved, halved, linear.

Perianth proper five-toothed, ſtanding out.

Cor. *Univerſal* difform, rayed. *Floſcules* of the diſk abortive.

Proper of the diſk hermaphrodite. *Petals* five, inflex-emarginate, equal.

Proper of the ray, hermaphrodite. *Petals* five, inflex-hearted, unequal, of which the exterior is very large, two-parted; but the neareſt lateral ones have a very large diviſion.

Stam. *Filaments* five, ſimple. *Anthers* roundiſh.

Pist. *Germ* inferior. *Styles* two, diſtant. *Stigmas* of the ray headed.

Per. none. *Fruit* ſpherical bipartile.

Seeds two, hemiſpheric, concave.

Obs. C. teſticulatum *is perhaps a plant of a different genus, ſince the univerſal involucre is one-leafed; partial none. Corolla univerſal uniform. Fruit twin.*

ESSENTIAL CHARACTER.

Cor. rayed: *pet.* inflex-emarginate. *Inv. univ.* one-leafed: *partial* halved. *Fruit* ſpherical.

SPECIES.

1. Coriandrum ſativum. *Common* or *Great Coriander.*
Lin. ſpec. 367. *Reich.* 704. *hort. cliff.* 100. *upſ.* 63. *mat. med.* 83. *Hudſ. angl.* 123. *With.* 302. *Sowerby Engl. bot. t.* 67. *Woodv. med. bot.* 492. *t.* 181. *Hall. helv. n.* 764. *Gærtn. fruct.* 93. *Plenck, ic. t.* 204. *Blackw. t.* 176. *Krock. ſileſ. n.* 444. *Lour. cochinch.* 180.
Coriandrum. *Cam. epit.* 523. *Bauh. hiſt.* 3. 2. 89. *fig. Raii hiſt.* 470. *ſyn.* 221. *Ger.* 859. *emac.* 1012. *f.* 1.—majus. *Bauh. pin.* 158. *Riv. pent. t.* 70, 71. *Mor. hiſt.* 3. 269. *ſ.* 9. *t.* 11. *f.* 1.—vulgare. *Park. theat.* 918. *f.* 1.
Fruits globular.

2. Coriandrum teſticulatum. *Small* or *twin-fruited Coriander.*
Lin. ſpec. 367. *Reich.* 705. *hort. cliff.* 100. *Lour. cochinch.* 180.
C. minus teſticulatum. *Bauh. pin.* 158. *Pluk. alm. t.* 169. *f.* 2. *Mor. f.* 2.
C. min. odorum. *Bauh. hiſt.* 3. 91. *fig. Raii hiſt.* 470.
C. alterum min. odorum. *Ger. emac.* 1012. *f.* 2. *Park. theat.* 918. *f.* 2.
[β. C. ſylveſtre. *Bauh. hiſt.* 91, 92. *f.* 1. *Riv. pent. t.* 72.—foetidiſſimum. *Bauh. pin.* 158. *Mor. ſ.* 9. *t.* 11.
C. alterum foetid. *Park.* 918. *n.* 3. *Raii hiſt.* 470.
Fruits twin.

DESCRIPTIONS, *&c.*

1. Root annual, ſmall. Stem a foot or a foot and half in height, ſmooth, branched. Root-leaves larger, doubly pinnate, pinnules broad, gaſhed on every ſide, ſerrate and even half-two-lobed: upper leaves very finely divided, alſo doubly pinnate; the pinnules linear, ſlender, divided into two or three ſegments. Univerſal involucre one-leafed or none; the three leaflets of the partial involucre ſmall, filiform[a].

Petals white, or reddiſh. It flowers in june and july, in corn fields, by road ſides, and on dunghills. The ſeeds ripen in july and auguſt.

The leaves have a ſtrong diſagreeable ſcent. The ſeeds are grateful to the taſte, and incruſted with ſugar are ſold by the confectioners. The Edinburgh college uſe them as correctors in the bitter infuſion and the preparations of Senna, nothing ſo effectually covering the diſagreeable taſte of that medicine. They have been conſidered as ſuſpicious, if not deleterious; but I have known ſix drams of them taken at once, without any remarkable effect[b]. Native of the South of Europe, China, and Cochinchina.

This plant, though found wild in Eſſex, where it has been long cultivated, about Ipſwich, and in a few other places, is not a native of this country.

2. The ſcent of this is much ſtronger than that of the common ſort. Root annual. Stem angular. Umbel uſually ſimple, very ſeldom compound. Univerſal involucre one-leafed: partial none. Petals not rayed. Anthers purpliſh. Germs twin at bottom[c].

According to Loureiro, the ſtem is almoſt upright, round, pale, ten inches high, with many weak diffuſed branches. Leaves decompound, the ſegments linear, ſlender, ſmooth. Umbels compound, ſmall, concave; both involucres many-cleft, ſubulate. Fruit twin, green tinged with brown, ſtronger both in ſmell and taſte than the common ſort.

Native of the South of Europe, China, and Cochinchina.—Cultivated 1739, by Mr. Miller[d].]

PROPAGATION AND CULTURE.

Theſe plants are propagated by ſowing their ſeeds in the autumn, in an open ſituation, on a bed of good freſh earth; and when the plants are come up, they ſhould be hoed out to about four inches diſtance every way, clearing them from weeds; by which management theſe plants will grow ſtrong, and produce a greater quantity of good ſeeds. The firſt ſort was formerly cultivated in the gardens as a ſalad herb, and in the Eaſt Indies is ſtill much cultivated; for the plant is of great uſe in moſt of their compound diſhes, as a culinary herb, and the ſeeds are alſo much eſteemed for the like purpoſes; but in Europe neither of them are now much uſed.

The ſecond ſort will riſe eaſily from ſeeds, if they are ſown in the autumn; but thoſe which are ſown

[a] Krocker, chiefly from Haller.
[b] Withering.
[c] Linn. ſpec.
[d] Hort. kew.

in the ſpring rarely ſucceed, or at leaſt do not come up till the following ſpring.

[For the field culture of Coriander, ſee Carum or Caraway.

The produce of Coriander is from ten to fourteen hundred weight on an acre, and the price varies from 16s. to 42s. a common price is 24s. for a hundred weight.

If great care be not uſed, the largeſt and beſt part of the ſeed will be loſt. To prevent this, women and children are employed to cut it, plant by plant, and to put it immediately into cloths, in which it is carried to ſome convenient part of the field, and there threſhed upon a ſail-cloth. A few ſtrokes of the flail get the ſeeds clean out, and the threſhers are ready for another bundle in a few minutes.

There is a ready ſale for Coriander ſeed with the diſtillers, druggiſts and confectioners. The former purchaſe very large quantities[e].]

CORIARIA. (*Has its name, from its uſe in tanning hides.*)

Lin. gen. n. 1129. *Reich.* 1235. *Schreb.* 1540. *Juſſ.* 441. *Niſſol. A. G.* 1721. *t.* 12. *Dill. gen.* 12.

Claſſ. 22. 9. Dioecia Decandria.——Polygamia. *Gouan.*

GENERIC CHARACTER.

* *Male.*

CAL. *Perianth* five-leaved, very ſhort; *leaflets* ſubovate, concave.

COR. *Petals* five, very like the calyx, connected.

STAM. *Filaments* ten, length of the corolla. *Anthers* oblong, two-parted.

* *Female.*

CAL. *Perianth* five-leaved, very ſhort; *leaflets* ſubovate, concave.

COR. *Petals* five, cuſpidate, calyciform, converging.

STAM. *Filaments* ten, (five within the calyx; five within the petals,) very ſhort. *Anthers* barren.

PIST. *Germs* five, compreſſed, inwardly conjoined. *Styles* as many, briſtle-form, long. *Stigmas* ſimple.

PER. none: five fleſhy, ovate-lanceolate, three-ſided *petals,* with one of the angles looking inwards, covering the ſeeds.

SEEDS five, kidney-form.

OBS. *Hermaphrodite flowers have been ſeen by others.*

ESSENTIAL CHARACTER.

Cal. five-leaved. *Cor.* five-petalled, very like the calyx.

MALE. *Anthers* two-parted.

FEMALE. *Styles* five. *Seeds* five, covered with ſucculent-berried petals.

SPECIES.

1. Coriaria myrtifolia. *Myrtle-leaved Sumach.*

Lin. ſpec. 1467. *ſyſt.* 891. *Reich.* 4. 270. *hort. upſ.* 299. *cliff.* 462. *Gouan. hort. monſp.* 508. *flor.* 431. *illuſtr.* 80. *Allion. pedem. n.* 1758. *D'Aſſo. aragon. n.* 964.

C. hermaphroditica. *Turr. farſet.* 13. (*fem.*)

Rhus myrtifolia monſpeliaca. *Bauh. pin.* 414. *Raii hiſt.* 1698. *Angl. hortul.* 64. *t.* 20. *f.* 1. *Lob. ic.* 2. 98. *Ger.* 1291. *f.* 2. *emac.* 1474. *f.* 2. *Park. par.* 609. *f.* 5. *theat.* 1450. *f.* 3. *Bauh. hiſt.*

Leaves ovate-oblong.

[2. Coriaria ruſcifolia.

Lin. ſpec. 1467. *Reich.* 4. 270. *Feuill. peruv.* 3. 17. *t.* 12.

Leaves cordate-ovate ſeſſile.

3. Coriaria ſarmentoſa.

Forſt. flor. auſtr. n. 377.

Procumbent diffuſed; leaves cordate-ovate acuminate quite entire five-nerved ſubpetiolate; racemes axillary elongated nodding.]

DESCRIPTIONS, &c.

1. This ſhrub ſeldom grows more than three or four feet high. It creeps at the root, and ſends forth many ſtems.

[In the male plant, the flower-buds are often in pairs from the ſcar of the fallen leaves. Male aments cylindric, oppoſite, in pairs (one from each bud, leafleſs; pairs from one to five, below the polygamous aments. Flowers ſeparated by fleſhy, concave ſcales. Hermaphrodite buds alſo ſolitary or in pairs, above the former, in ſeveral pairs. Aments like the others, except that they have frequently a pair of leaves at the baſe; the flowers are ſeparated by ſimilar ſcales, and have ſome males mixed with the hermaphrodites. The other buds, which occupy the ends of the branches, have male flowers only, in leafleſs aments.

In the female plant, very many flower-buds are placed along the branches, oppoſite by pairs. Aments long, peduncled, more leafy, having from one to four leaves, the outmoſt gradually larger. Raceme looſer, few-flowered; the ſcales ſeparating the flowers are narrower and more acuminate[f].

This plant therefore, according to Gouan, is polygamous, having hermaphrodite and male flowers in the firſt, female and male in the ſecond deſcribed above; hermaphrodite and male on a third. Medicus deſcribes a plant with hermaphrodite flowers only.

It is a native not only of the South of France, but alſo of Spain, and the county of Nice.—Cultivated 1629, by Parkinſon. It flowers from may to auguſt[g].]

The plant with male flowers only was common in England, till that which bears hermaphrodite flowers was raiſed in the Chelſea garden from ſeeds ſent out of Italy, which produced great quantities of ſeeds, that vegetated.

[It is conſiderably aſtringent, and is uſed not only in tanning leather, but in dyeing black colours[h].]

This ſhrub ſending up many ſtems forms a thicket, and therefore is uſeful to fill up vacancies in plantations of ſhrubs; but it is improper for ſmall gardens, becauſe it takes up too much room, and there is no great beauty in the flowers.

[2. Leaves ovate-oblong, ſubcordate, ſubſeſſile. Flowers hermaphrodite.

Native of Chili.

3. Native of New Zealand.]

PROPAGATION AND CULTURE.

1. It may be propagated plentifully from the ſuckers, which are produced from the creeping roots in great abundance; theſe ſhould be taken off in march, and planted into a nurſery to form good roots, where they may continue one or two years, and then muſt be removed to the places where they are to remain.

This plant delights in a loamy ſoil, which is not too ſtiff, and ſhould be placed where it may have ſhelter from the north and eaſt winds; where it will endure the cold of our ordinary winters very well, and will flower better than if it is preſerved in pots and ſheltered in the winter, as hath been by ſome practiſed.

CORIDIS FOLIA. See *Linconia.*

CORINDUM. See *Cardioſpermum.*

CORIOTRAGEMATODENDROS. See *Myrica.*

CORIS. (*A name in Dioſcorides and Pliny.* Κορις *is alſo Cimex, a bug or tick. Others derive it from* κορη, *the pupil of the eye.*)

Lin. gen. n. 243. *Reich.* 260. *Schreb.* 329. *Juſſ.* 96. *Tourn.* 423.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Lyſimachiæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, bellied, converging, five-toothed; externally crowned with ſpines, of which the five ſuperior ones are ſimple; the inferior ones toothed.

COR. one-petalled, irregular. *Tube* the length of the calyx, cylindrical. *Border* flat, five-parted: *diviſions* oblong, emarginate, obtuſe; the two inferior ones ſhorter, and more diſtant.

STAM. *Filaments* five, briſtle-form, length of the corolla; declining. *Anthers* ſimple.

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[e] Agric. Survey of Eſſex. Bath papers, vol. 4. Young's Annals, vol. 21.

[f] Gouan illuſtr. [g] Hort. kew. [h] D'Aſſo.

Pist. *Germ* roundiſh, ſuperior. *Style* filiform, length of the ſtamens, declining. *Stigma* thickiſh.

Per. *Capſule* globoſe, placed in the bottom of the calyx, one-celled, five-valved.

Seeds very many, nearly ovate, ſmall.

ESSENTIAL CHARACTER.

Cor. one-petalled, irregular. *Cal.* ſpinous. *Capſ.* five-valved, ſuperior.

SPECIES.

1. Coris monſpelienſis. *Montpelier Coris.*
Lin. ſpec. 252. *Reich.* 491. *hort. cliff.* 68. *upſ.* 46. *mat. med.* 63. *Villars dauph.* 2. 464. *Dalech. hiſt.* 1158. *Lob. ic.* 402. *Tabern. ic.* 840.
C. cærulea maritima. *Bauh. pin.* 280. *Raii hiſt.* 882. *Garid. aix.* 127. *Mor. hiſt.* 3. 362. *ſ.* 11. *t.* 5. *f.* laſt.
C. cær. monſpeliaca. *Ger. emac.* 544.
C. monſpelienſium. *Park. theat.* 571.
C. monſ. purpurea. *Bauh. hiſt.* 3. 424.
Symphytum petræum. *Camer. epit.* 699.

DESCRIPTION, &c.

This plant ſeldom grows above ſix inches high, and ſpreads near the ſurface of the ground like Heath. In june, when it is full of flowers, it makes a very pretty appearance.

[The ſtem is red. The leaves are alternate, linear, thickiſh, ſpreading. The flowers are in ſpikes[a], purpliſh or blueiſh. Stigma ſimple, not five-cleft[b]. Native of the South of France. Cultivated in 1739[c].

Linneus ſays the root is annual, in the hortus kewenſis it is marked as biennial, and according to Villars it is perennial.]

There are two varieties of this plant, one with a red, and the other with a white flower.

PROPAGATION AND CULTURE.

This may be propagated by ſowing the ſeeds in the ſpring, on a bed of freſh earth; and when the plants are about an inch high, they ſhould be tranſplanted, ſome of them into pots filled with freſh light earth, that they may be ſheltered in winter; and the others into a warm border, where they will endure the cold of our ordinary winters very well, but in ſevere froſt they are generally deſtroyed; for which reaſon, it will be proper to have ſome plants in pots, which may be put under a common hot-bed frame in winter, where they may be covered in froſty weather; but when it is mild, they ſhould have a great ſhare of free air: theſe plants ſometimes produce ripe ſeeds in England, but as they do not conſtantly perfect their ſeeds, it will be proper to increaſe them from ſlips and cuttings, which will take root, if planted about the end of auguſt on a very gentle hot-bed, and ſhaded from the ſun and duly watered.

Coris. See *Euphraſia* and *Hypericum.*

CORISPERMUM. (*From* κόρις, *a bug or tick, and* σπέρμα, *ſeed.*)
Lin. gen. n. 12. *Reich.* 12. *Schreb.* 16. *Juſſ. A. G.* 1712. *Gærtn.* 75. *Juſſ.* 86.
Claſſ. 1. 2. Monandria Digynia.
Nat. order of *Oleraceæ. Atriplices* Juſſ.

GENERIC CHARACTER.

Cal. none. (two-leaved. *Corolla* none, *G.*)

Cor. *Petals* two, compreſſed, incurved, acuminate, oppoſite, equal.

Stam. *Filament* one, (one to three, *G.*) filiform, ſhorter than the petals. *Anther* ſimple.

Pist. *Germ* acute, compreſſed, *Styles* two, (one, *G.*) capillary. *Stigmas* acute.

Per. none.

Seed ſingle, oval, compreſſed, gibbous on one ſide, with the margin acute.

Obs. *In the loweſt flowers there are often two, three, four, or five ſtamens; in the reſt one.*

ESSENTIAL CHARACTER.

Cal. none. *Pet.* two. (*Cal.* two-leaved. *Cor.* none, *G.*) *Seed* one, oval, naked.

SPECIES.

1. Coriſpermum hyſſopifolium. *Hyſſop-leaved Tick-ſeed.*
Lin. ſpec. 6. *Reich.* 10. *hort. upſ.* 2. *cliff.* 3. *Juſſ. act. par.* 1712. *p.* 244. *Gærtn. fruct.* 361. *Pallas roſſ.* 112. *t.* 98. *Gmel. ſib.* 2. 10.
Rhagroſtis ſemine paſtinacæ. *Buxb. cent.* 3. *t.* 55.
Spikes terminating, leaves linear, nerveleſs, awnleſs.
2. Coriſpermum ſquarroſum. *Rough-ſpiked Tick-ſeed.*
Lin. ſpec. 6. *Reich.* 10. *hort. upſ.* 3. *Pallas roſſ.* 113. *t.* 99.
Rhagroſtis fol. arundinaceis. *Buxb. cent.* 3. *t.* 56.
Spikes axillary ſquarroſe, leaves lanceolate-acuminate pungent nerved.

DESCRIPTIONS, &c.

1. [Root annual. Stem varying from a long ſpan to a cubit in height, upright in dry ſoils, but in moiſt ones ſpreading and diffuſed; the branches aſcending; the lower ones oppoſite, in length frequently reaching above the middle of the ſtem; the others alternate, ſtriated with green and red like the ſtem, having pale grooves between. Leaves alternate, ſoft, linear-acute, with a very fine needle's point. From each axil a branchlet terminated by a ſpike of flowers. Spikes more or leſs crowded or elongated, with alternate imbricating bractes, ovate or lanceolate-acuminate, membranaceous with a white or red edge, one-flowered, and increaſing with the fruit. From each bracte proceeds a ſingle flower, which has no corolla, but only a white pellucid little membrane, oppoſite to the bracte, involving the genitals, and as the fruit grows decaying together with the filaments. Stamens in moſt of the flowers three, between the germ and the little membrane, the middle one longer and ſtouter; the ſide ones frequently withering, or wanting. In other ſpikes, often on the ſame plant, the flowers have five ſtamens. The anthers project beyond the corolla, are twin and yellow. Germ very ſmall, ovate; with two very ſmall ſtyles; quickly growing into an oval flat ſeed, a little convex on the outſide, with a ſharp edge round it, and a ſmall inciſure at the place of the ſtyles. The ſeeds are ripening at the baſe of the ſpike, whilſt the flowers are coming out at the top. The ſeed contains a little ſpire, having the radicle at one end, and at the other divided into two leaflets; whence its natural affinity to Salſola and Polycnemum.

It varies much in different parts of the Ruſſian empire; being ſmooth and very ſucculent, becoming red in winter, a foot and half high and more, with very broad bractes, long imbricate ſpikes, and very large ſeeds; or in dry ſoils very ſlender, hoary, with ſmall ſpikes, bractes and ſeeds, or about the lake Baikal, not tall, but very robuſt, with ſhort ſpikes like ſtrobiles, and wide bractes, the whole plant red in winter; or in the Caſpian deſert, a cubit high or more, branching very much, with ſpikes above a ſpan long, and remote bractes.

It is common all over the Ruſſian empire in ſandy ſoils, eſpecially on the banks of lakes and rivers, and in low moiſt places: where it affords paſture for the camels, with the next ſpecies, and the various ſorts of Atriplex and Salſola[d]. It is alſo found in the South of France. It was cultivated by Mr. Miller in 1739[e].

2. This varies in ſize like the foregoing, but not in the proportion of the parts. Root annual. The whole plant dry, more rigid, pubeſcent with a hoary lanugo. Stem and branches round, with neat whitiſh ridges. In ſmall plants there are four oppoſite aſcending branches next the root, often longer than the middle ſtem, which is ſometimes hardly a finger's length, and ſimple. In larger plants, which ſometimes exceed a cubit in height, the ſtem is higher than theſe root-branches, and is branched alternately to the very top. The leaves have five rigid, prominent nerves. Spikes ſeſſile, very ſhort and crowded, muricated all round with very ſpreading ſpineſcent bractes. There is a ſeſſile flower to

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[a] Linn. ſpec.

[b] Forſkæhl.

[c] Hort. kew.

[d] Pallas.

[e] Hort. kew.

each bracte, uſually one-ſtamened, with very fugacious anthers; ſtyles longer; ſeeds ſmaller, not margined, mucronate-bifid with the ſtyles.—Native of Ruſſia, but more confined and local[f]. Cultivated by Mr. Miller in 1759[g].

Gmelin is of opinion that theſe are not ſpecifically different: but neither he nor Linneus ſeem to have been acquainted with the ſecond ſort. Linneus probably made out his firſt ſpecies from the laſt variety mentioned above, and his ſecond from the firſt, ſecond, and third varieties[h].]

PROPAGATION AND CULTURE.

Theſe plants having little beauty are ſeldom cultivated, except in botanic gardens. The ground will be plentifully ſtocked with the firſt ſort if it be permitted to ſcatter its ſeeds.

The ſecond ſort will not grow but in marſhy places, it will ſoon extend over the ſurface of ſtanding water, when once it is eſtabliſhed.

[CORISPERMUM. See *Callitriche.*]

CORK-TREE. See *Quercus.*

[CORNEL. See *Cornus.*

CORNELIA. See *Ammannia.*

CORNELIAN-CHERRY. See *Cornus.*]

CORN-FLAG. See *Gladiolus.*

CORNI SPECIES. See *Cluytia.*

CORN-MARIGOLD. See *Chryſanthemum.*

CORN-SALAD. See *Valeriana.*

[CORNUCOPIÆ. (*So named from the manner in which the flowers grow within their involucre, like a Cornucopia or horn of plenty.*)

Lin. gen. n. 72. *Reich.* 78. *Schreb.* 101. *Juſſ.* 33.
Cornucopioides. *Scheuch.* 3.

Claſſ. 3. 2. Triandria Digynia.

Nat. order of *Gramina* or *Graſſes.*

GENERIC CHARACTER.

CAL. *Perianth* common one-leafed, funnel-form, very large; *mouth* crenated, obtuſe, from ſpreading-upright, many-flowered. *Glume* one-flowered, two-valved; valves oblong, obtuſely acuminate equal.

COR. one-valved; in figure, ſize, and ſituation very much reſembling the valves of the glume of the calyx.

STAM. *Filaments* three, capillary. *Anthers* oblong.

PIST. *Germ* turbinate. *Styles* two, capillary. *Stigmas* cirrhoſe.

PER. none. *Corolla* including the ſeed.

SEED ſingle, turbinate, on one ſide convex, on the other flat.

OBS. *Rather too nearly allied to* Alopecurus.

ESSENTIAL CHARACTER.

Invol. one-leafed, funnel-form, crenate, many-flowered. *Cal.* two-valved. *Cor.* one-valved.

SPECIES.

1. Cornucopiæ cucullatum. *Hooded Cornucopiæ.*
Lin. ſpec. 79. *Reich.* 146. *hort. cliff.* 490. *Haſſelqu. itin.* 452. *edit. angl.* 242. *Pet. gaz. t.* 73. *f.* 5. (*Juncus.*) *Smith ſpicil. t.* 14.
Gramen orientale, vernum, &c. *Scheuch. gram.* 117. *t.* 3. *f.* 1.
Spike beardleſs, with a crenate hood, or *involucre.*

2. Cornucopiæ alopecuroides.
Lin. ſyſt. 103. *Reich.* 146. *mant.* 29.
Spike bearded within a hemiſpheric hood, or *involucre.*

DESCRIPTIONS, *&c.*

1. Root annual, fibrous, branched. Culms numerous, aſcending, jointed, round, ſmooth, ſtriated, branched, leafy, dark purple at the joints. Leaves ſheathing, ſtriated; ſheath inflated, ſhorter than the internodes, ſpreading, pointed. Stipule ſolitary, in the boſom of the leaf, entire. Flowers ſeveral, ariſing from the ſheaths of the upper leaves. Involucre ſlender, incurved, horny, cylindrical, ſtriated, rough when drawn backwards through the hand, gradually ſwelling upwards, and enlarged at the top into an hemiſpherical cup, neatly notched in its margin, purpliſh, durable. Flowers in a little head or ſpike, projecting ſomewhat beyond the involucre, green often tipped with purple. Calyx and corolla ſtriated, obtuſe. Filaments projecting very far. Styles connected at the baſe, ſpreading in the upper part, twiſted, the length of the ſtamens. Stigmas acute. Seed ſmall. Of all graſſes, this is perhaps the moſt ſingular, as well as the moſt uncommon[i].

Native of the vales about Smyrna, whence it was ſent to England by Sherard, when he was conſul at Smyrna: and afterwards to Linneus by Haſſelquiſt.

Introduced at Kew in 1788, by John Sibthorp, M. D.[k] But it has conſtantly been cultivated in the Chelſea garden ſince the time of Rand[l].

2. This very much reſembles our common Foxtail graſs (*Alopecurus pratenſis.*) Culms aſcending, even. Leaves even. Spike terminating, ovate, looſe, with the florets on very ſhort pedicels. Glume of the calyx two-valved, equal, ovate. Glume of the corolla one-valved, the length of the calyx, to which is oppoſed a ſpreading awn, twice the length of the flower. Sheath of the upper leaf ventricoſe, as in *Phalaris.* The ſingular mark of this ſpecies is a hood in form of a pitcher, quite entire, of the ſame conſiſtence with the leaf, ſurrounding the baſe of the ſpike like a common calyx. Obſerved in Italy, by Arduini[m].]

CORNUCOPIÆ. See *Valeriana.*

CORNUS. (*Cornus Plinii,* κράνεια, *Theophr. from cornu, a horn; on account of the horny hardneſs of the fruit.*)

Lin. gen. n. 149. *Reich.* 155. *Schreb.* 194. *Tourn.* 410. *Gærtn.* 26. *Juſſ.* 214. *L'Heritier.*
Virga ſanguinea. *Dill.*

Claſſ. 4. 1. Tetrandria Monogynia.

Nat. order of *Stellatæ* γ. *Caprifolia* Juſſ.

GENERIC CHARACTER.

CAL. *Involucre* generally four-leaved, many-flowered; *leaflets* ovate, the oppoſite ones ſmaller, coloured, deciduous.
Perianth very ſmall, four-toothed, ſuperior, deciduous.

COR. *Petals* four, oblong, acute, flat, ſmaller than the involucre.

STAM. *Filaments* four, ſubulate, erect, longer than the corolla. *Anthers* roundiſh, incumbent.

PIST. *Germ* roundiſh, inferior. *Style* filiform, length of the corolla. *Stigma* obtuſe.

PER. *Drupe* roundiſh, umbilicated.

SEED. *Nut* heart-ſhaped, or oblong, two-celled.

ESSENTIAL CHARACTER.

Invol. generally four-leaved. *Pet.* four, ſuperior. *Drupe* with a two-celled nut.

SPECIES.

1. Cornus florida. *Great-flowered Dogwood.*
Lin. ſpec. 171. *Reich.* 330. *hort. cliff.* 38. *upſ.* 29. *Gron. virg.* 17. *Kalm. canad.* 2. 321. & 3. 104. *Pluk. alm. t.* 26. *f.* 3. *Cateſb. cor. t.* 27. *L'Herit. monogr.* 4. *n.* 3.
Arboreous: involucre very large: leaflets obcordate.

2. Cornus maſcula. *Cornelian Cherry.*
Lin. ſpec. 171. *Reich.* 331. *hort. cliff.* 38. *upſ.* 29. *L'Herit. monogr.* 4. *n.* 4. *Hall. helv. n.* 815. *Scop. carn. n.* 170. *Krock. ſileſ. n.* 244. *Allion. pedem. n.* 873. *Villars dauph.* 2. 308. *Pallas roſſ.* 1. 50. *Blackw. t.* 121. *Gærtn. fruct.* 127. *Plenck, ic. t.* 64.
C. ſylveſtris mas. *Bauh. pin.* 447. *Lob. ic.* 2. 169. *Dod. pempt.* 802. *Duham. arb.* 1. 182. *t.* 74.
C. mas. *Ger.* 1282. *emac.* 1466. *Park. theat.* 1520. *f.* 1. *Raii hiſt.* 1536.
C. mas pumilio. *Cluſ. hiſt.* 1. *t.* 13.
β. C. hortenſis mas. *Bauh. pin.* 447.
C. ſativa ſ. domeſtica. *Bauh. hiſt.* 1. 211.
γ. C. fol. eleganter variegatis. *Du Roi. harb.* 1. 171.
δ. C. hort. mas, fructu ceræ coloris. *Bauh. pin.* 447. 1. *Duham. arb.* 3. *Du Roi.* 171.
Arboreous: umbels equalling the involucre.

[3. Cornus japonica.
Lin. ſyſt. 159. *Thunb. jap.* 63.
Arboreous: umbels exceeding the involucre: leaves ſerrate.]

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[f] Pallas.

[g] Hort. kew.

[h] Pallas.

[i] Smith.

[k] Hort. kew.

[l] Smith.

[m] Linn. mant.

4. Cornus ſanguinea. *Common Dogwood.*
Lin. ſpec. 171. *Reich.* 331. *Fl. ſuec. n.* 139. *hort. cliff.* 38. *Hudſ. angl.* 70. *With.* 160. *Engl. bot. t.* 249. *Relh. cant. n.* 131. *Hall. helv. n.* 816. *Scop. carn. n.* 171. *Neck. gallob.* 90. *Pollich pal. n.* 165. *Krock. ſileſ. n.* 245. *Pallas roſſ.* 1. 50. *Fl. dan. t.* 481. *Villars dauph.* 2. 308. *Duham. arb.* 1. 182. *t.* 75. *L'Herit. corn. n.* 5. *Gærtn. fruct.* 126.
C. foemina. *Bauh. pin.* 447. *Lob. ic.* 2. 169. *Tabern.* 1046. *Garid. aix.* 127. *Ger.* 1283. *emac.* 1467. *Park. theat.* 1521. 3. *Raii hiſt.* 1591. *ſyn.* 460.
Virga ſanguinea. *Dod. pempt.* 782. *Bauh. hiſt.* 1. 214.
Arboreous: cymes depreſſed; branches ſtraight; leaves ovate, concolor.

5. Cornus alba. *White-berried Dogwood.*
Lin. ſyſt. 159. *Reich.* 332. *mant.* 40. *L'Herit. corn. n.* 7. *Pallas fl. roſſ.* 1. 51. *t.* 34. *Ait. hort. kew.* 159.
C. tartarica. *Mill. dict. n.* 7. *fig. t.* 104.
C. ſylveſtris, fructu albo. *Amm. ruth.* 198. *t.* 32.
Arboreous: cymes depreſſed; branches recurved; leaves broad-ovate, hoary underneath.

6. Cornus ſericea. *Blue-berried Dogwood.*
Lin. ſyſt. 159. *Reich.* 332. *mant.* 199. *L'Herit. corn. n.* 6. *t.* 2. *Ait. hort. kew.* 158. *Gron. virg.* 20. *Pluk. phyt. t.* 169. *f.* 3.
C. amomum. *Mill. dict. n.* 5.
Arboreous: cymes naked, depreſſed; branches patulous; leaves ovate, ferruginous-ſilky underneath.

[7. Cornus alternifolia. *Alternate-leaved Dogwood.*
Lin. ſyſt. 159. *ſuppl.* 125. *L'Herit. corn. n.* 11. *t.* 6. *Ait. hort. kew.* 159.
α. C. corallina. *Red-twigged.*
β. C. vireſcens. *Green-twigged.*
Arboreous: leaves alternate.]

8. Cornus ſuecica. *Herbaceous Dogwood.*
Lin. ſpec. 171. *Reich.* 332. *fl. lapp. n.* 65. *t.* 5. *f.* 3. *ſuec. n.* 138. *L'Herit. monogr.* 2. *n.* 1. *With.* 161. *Lightf. ſcot.* 119. *Fl. dan. t.* 5. *Gmel. ſib.* 3. 163. *n.* 33. *Pallas roſſ.* 52. *Dill. elth.* 108. *t.* 91.
C. herbacea. *Hudſ. angl.* 71.
Periclymenum humile. *Bauh. pin.* 302. 3. *Tabern. ic.* 898. —— norvegicum. *Bauh. pin.* 302. 4. *Buxb. act.* 3. 268.
P. parvum prutenicum. *Bauh. hiſt.* 2. 109. *f.* 1.
Chamæpericlymenum. *Cluſ.* 1. 60. 1. *pannon.* 87. *t.* 88. *Ger.* 1113. *emac.* 1296. *n.* 5. *Park. theat.* 1461. *f.* 4. *Raii hiſt.* 655.
Herbaceous: with branches in pairs.

[9. Cornus canadenſis. *Canadian Dogwood.*
Lin. ſpec. 172. *Reich.* 332. *amœn.* 1. 257. *L'Herit. corn. n.* 2. *t.* 1.
Pyrola, alſines flore, braſiliana. *Bauh. pin.* 191. *prodr.* 100.
Herbaceous: with no branches.

10. Cornus circinata.
L'Herit. monogr. 7. *n.* 8. *t.* 3.
Branches warted, leaves orbiculate tomentoſe and hoary underneath, cymes depreſſed.]

11. Cornus ſtricta. *Upright Dogwood.*
L'Herit. corn. n. 9. *t.* 4. *Ait. hort. kew.* 159.
C. foemina. *Mill. dict. n.* 4?
Branches ſtrict: leaves ovate concolor almoſt naked: cymes panicled.

12. Cornus paniculata. *New Holland Dogwood.*
L'Herit. corn. n. 10. *t.* 5. *Ait. hort. kew.* 159.
C. candidiſſima. *Mill. dict. n.* 6?
Branches erect: leaves ovate, hoary underneath; cymes panicled.]

DESCRIPTIONS, &c.

1. This ſort ſeldom riſes above ſeven or eight feet high, but is generally well furniſhed with large leaves. It does not flower here very plentifully, nor does it produce berries in England, though it is very hardy.

There is a variety of it with a roſe-coloured involucre, which was found wild in Virginia by Baniſter, and afterwards by Cateſby. They are great ornaments to the woods in America, by their early flowering in the ſpring before the leaves appear, and by their berries hanging on all the winter.

[Cateſby ſays, that the bloſſoms break forth in the beginning of march, being at firſt not ſo wide as a ſixpence, but increaſing gradually to the breadth of a man's hand, being not of their full bigneſs till about ſix weeks after they begin to open. (This is the involucre.) It is greeniſh white, ſometimes roſe-coloured, and each of the four leaflets has a deep indenture at the end. The berries are from two to ſix in a cluſter, cloſely joined, on peduncles an inch long; they are red, oval, and the ſize of large haws: being bitter, they are little coveted by birds, except in time of dearth. The wood is white, has a cloſe grain, and is very hard like that of Box.]

It is common in our nurſeries, where it is known by the name of Virginia Dogwood, [and was cultivated in 1739, by Mr. Miller[a]. Cateſby ſays, that Fairchild had it in his garden. It flowers in april and may.

2. In its wild ſtate it is a ſhrub, four or five feet in height; but cultivated, it advances into a tree, twenty feet high. Shoots aſh-coloured and pubeſcent. Leaves in pairs, ovate-lanceolate, ſubhirſute. The flowers come out very early in the ſpring, before the leaves. Leaflets of the involucre lanceolate, often reflected, permanent. Peduncles one-flowered, ſomewhat villoſe, from twelve or fifteen to thirty in an umbel. Corolla yellow, ſpreading, and at length reflected, longer than the ſtamens. Top of the ſtyle bent in and papilloſe. Fruit oblong, of a high ſhining ſcarlet colour, the ſize and form of a ſmall Olive or Acorn. The geſtation endures about five months, and the greater part of the flowers drop without fruit[b].]

The Cornelian Cherry is very common in plantations of ſhrubs. If the ſeaſon be mild, the flowers will come out the beginning of february; and though there be no great beauty in them, yet they are produced in plenty at a ſeaſon when few other flowers appear. Formerly it was cultivated for the fruit, which was uſed to make tarts, and a rob de Cornis was kept in the ſhops.

[Cornel, ſays Evelyn, grows with us of good bulk and ſtature, and is exceedingly commended for its durableneſs in wheel-work, pins and wedges, in which it laſts like the hardeſt iron.

Native of France, Ruſſia, Germany, Switzerland, Auſtria, Carniola, Piedmont, the Milaneſe.—Cultivated in 1596, by Gerarde[c].

3. *Stem* erect, ſix feet in height: branches oppoſite, ſtriated, aſh-coloured, ſmooth. *Leaves* at the ends of the branches, oppoſite, petioled, ovate, acuminate, entire at the baſe, nerved, pale underneath, ſmooth, two inches broad and three long. *Petiole* angular, ſmooth. *Flowers* terminating, umbelled, white. *Umbel* decompound, with from three to five rays, much ſpreading. *Peduncles* and *pedicels* half-cylindric, channelled, ſmooth. Leaflets of the *involucre* lanceolate-ſetaceous, deciduous, many times ſhorter than the umbel. *Perianth* four or five-parted, ſmooth; diviſions ovate, acute. *Filaments* ſhorter than the corolla. *Germ* ſuperior; *ſtyle* very ſhort; *ſtigma* three-cornered. *Drupe* ovate, acute, compreſſed, red, ſmooth, the ſize of a ſmall Pea, with the ſtyle permanent. The fleſh thin and ſubacid. The ſtone hard and ſhaped like a lens. The kernel white and hard.—Native of Japan[d]. L'Heritier affirms, that this is a Viburnum.

4. Height from four or five to eight or ten feet. Leaves oppoſite, quite entire but ſometimes with the edge waving, ſtrongly nerved, ſlightly pubeſcent on both ſides, two inches and an half long, one and an half broad: petioles ſmooth, furrowed above, and four lines in length. Peduncles axillary, leafleſs; pedicels ſhort and very cloſe together: forming a five-cleft cyme, again ſubdividing. Small

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[a] Hort. kew.

[b] Haller and Scopoli.

[c] Hort. kew.

[d] Thunberg.

deciduous bractes at the baſe of the peduncles. Calyx four or five-toothed. Petals greeniſh white, lanceolate, revolute. A four-lobed ring ſurrounds the baſe of the ſtyle. Some of the flowers are female. Fruit round, obſcurely umbilicate; very dark-purple: the pulp ſoft and bitter; the ſtone round, bony, marked obſcurely with eight furrows, two-celled, with one plano-convex white ſeed in each cell[e].

Native of Europe in hedges, eſpecially in a calcareous ſoil. It flowers in june, and the berries ripen in auguſt.

This common ſhrub has a variety of names in different parts of our kingdom—as *Female Cornel, Dogberry tree, Hound's-tree, Hound's-berry tree, Prickwood* from its uſe in making ſkewers, *Gaten* or *Gatten-tree, Gater* or *Gatter-tree*.

Our common Dogwood, ſays Evelyn, is like the Cornel for compactneſs, and is made uſe of for cart-timber, and ruſtick inſtruments, for mill-cogs, ſpokes, bobins for bone-lace, and the beſt of tooth-pickers and butchers ſkewers. Being hard and even, it is fit alſo for the turner. In ſome countries abroad they extract an oil from the berries for lamps, by boiling them in water, and preſſing them. Haller obſerves, that theſe berries are very bitter and ſtyptic, but not uſed in medicine.]

Mr. Miller informs us, that the fruit is often brought into our markets, and ſold for Buckthorn berries, from which however it may eaſily be diſtinguiſhed; there being only one ſtone in this, whereas the Buckthorn has four ſtones; the latter alſo ſtains paper green, but the juice of the former is purple. Dogwood is called *Virga ſanguinea* by old authors, from the young ſhoots being of a fine red colour. A variety with variegated leaves is to be found in the nurſeries, but it is not much eſteemed.

5. [This very much reſembles the foregoing; differing only in its recurved branches and white berries. Many of the ſuckers are procumbent[f].

Stem woody, putting out many lateral branches near the ground, ſo that unleſs it is trained while young, it generally ſpreads low. The branches during ſummer are browniſh, but in winter change to a fine red. The flowers are produced in large cymes at the extremity of every ſhoot, towards the end of may, and are white. The fruit alſo becomes finally white; but unleſs theſe ſhrubs are planted in a ſtiff ground, they rarely produce much fruit, except in cold wet ſeaſons.

This ſpecies was firſt diſcovered by Gmelin; and afterwards was found by Meſſerſchmidt near Kamſchatka: it is frequent through all Siberia. Alſo in North America. The ſeeds were firſt ſent by Profeſſor Ammann of Peterſburgh to England[g].

Native of North America and Siberia.—Cultivated 1759, by Mr. Miller[h].

6. This ſhrub grows two fathoms in height, with an upright, round, branched, gray ſtem. Branches oppoſite, round, ſpreading, duſky purple; ſhoots round, with a ring at the joints, almoſt without ſpots and dark red, as in *C. ſanguinea*, the younger ones more or leſs pubeſcent. Leaves acuminate, entire, nerved; the rib and nerves raiſed beneath, ſcored above, ſpreading, flat, three inches long, an inch and half wide. Petioles round on one ſide, grooved on the other, one fourth of the length of the leaves, villoſe, reddiſh. Cymes terminating, peduncled, upright, depreſſed, ſcarcely convex, three or four-parted, with an intermediate ſolitary flower, villoſe, two inches wide. Flowers pedicelled, horizontal, white, with the diſk at firſt white, but afterwards brown, or dark purple.

The leaves are narrower, and deeper veined than in the foregoing; the flowers grow in ſmaller cymes; the fruit is ſmaller, and of a deep blue colour when ripe[i].] The ſhoots are of a beautiful red colour in winter; and in ſummer the leaves being large, of a whitiſh colour on their under ſide; and the bunches of white flowers growing at the extremity of every branch, this ſhrub is valuable; and in autumn, when the large bunches of blue berries are ripe, it makes a fine appearance. Native of North America.

[Cultivated 1759, by Mr. Miller[k].

7. Branches ſubdeterminate, round, gloſſy, dark purple; with whitiſh vague dots or lines. Leaves petioled, ovate, acute, quite entire, gloſſy, marked with lines, pale underneath. Stipules none. Panicles corymbed, flat above, white. Germ obovate. Perianth none. Petals obtuſe, ſeſſile, revolute, white. Filaments twice the length of the petals, from ſpreading erect. Style cylindric, ſhorter than the corolla. Stigma thickiſh.—Native of North America[l].

The branches are ſometimes red, and ſometimes green. It is ſingular in having the leaves alternate; the twigs alſo being dichotomous, this ſhrub has a different appearance from its congeners; the petioles alſo are longer than in the other ſpecies[m]. Cultivated 1760, by Mr. James Gordon. It flowers in ſeptember[n].

8. This elegant plant is about ſix inches high. Stem four-cornered, thinly branched, forked at top. Leaves oval, oppoſite, ſmooth, ſeſſile, ribbed with five nerves, the lower ones rounder. The involucre conſiſts of four white leaves reſembling petals, in the centre of which are twenty or more ſmall blackiſh flowers, on ſhort peduncles; the flowers are very ſmall, in a ſimple umbel: they are ſucceeded by a cluſter of berries which are red when ripe; in each of them is a heart-ſhaped ſtone. The berries have a ſweet wateriſh taſte, and are acceptable to children: they are ſuppoſed by the highlanders to create an appetite, and hence the Erſe name, Lus-a-chraſis, *Plant of gluttony*[o].

Native of the north of Europe, and the whole northern tract of the Ruſſian empire from the Baltic to the E. ocean; Cheviot and other hills in the north of England; and in mooriſh places by rivulets on the ſides of the highland mountains in Scotland.

It is commonly known under the name of *Dwarf Honeyſuckle*: and flowers in june.

9. This is only a hand in height, and has the habit of Trientalis or Paris. Stems ſeveral, upright, herbaceous, four-cornered, purpliſh, having ſome oppoſite, ſlightly-claſping leaves at bottom, which wither and fall off. The proper leaves are in whorls from four to ſix together, ſolitary at the top of each ſtalk; they are ſeſſile, roundiſh or ovate, acuminate, entire, nerved, have ſcarcely conſpicuous hairs ſcattered over the upper ſurface, are bright green, paler underneath, ſpreading, flat, eighteen lines long, and an inch broad. Umbels involucred, terminating, ſolitary, peduncled, upright, white. Flowers pedicelled, upright, white, with a violet-coloured bottom. Leaflets of the involucre ſeſſile, ſubcordate, acuminate, entire, marked with lines, white, ſometimes red at the tip, horizontal, the two inner ones ſmaller: the whole involucre is fifteen lines in diameter[p]. (Linneus ſays it is longer than in the foregoing ſort.)

Pallas ſuſpects it to be only a variety of that, and ſays that the ſpecimens of C. ſuecica or herbacea found in Kamtſchatka and Bering's iſland, exactly correſpond with the garden ſpecimens of C. canadenſis ſent from England, and the wild ones from Newfoundland.

Native of Canada, Labrador, and Newfoundland. Introduced 1774, by John Fothergill, M.D. It flowers in auguſt[q].

10. This ſhrub is the height of a man. Stem upright, branched, gray. Branches oppoſite, ſomewhat ſpreading, round, very thick, green, with browniſh warts; twigs like the branches, with rings at the joints, ſlightly tinged with purple. Suckers

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[e] Haller, Scopoli, Pollich, Gærtner.
[f] Linn. mant.
[g] Mill. fig.
[h] Hort. kew.
[i] Mill. fig. 70.
[k] Hort. kew.
[l] Linn. ſuppl.
[m] L'Heritier.
[n] Hort. kew.
[o] Withering & Lightfoot.
[p] L'Heritier.
[q] Hort. kew.

purple, with duſky linear ſpots. Leaves acuminate, entire or nearly ſo, with ſemiconcentric nerves, prominent beneath, ſcored above, the under ſurface glaucous; they are ſpreading, flat, four inches in length and breadth; the younger ones tomentoſe underneath. Petioles an inch long, rounded on one ſide, channelled on the other, ending in a claſping ring, and ſpotted like the ſuckers. Cymes terminating, ſolitary, peduncled, upright, without any involucre, three or five-parted, pubeſcent, three inches wide. Flowers pedicelled, upright, white, five lines wide. Peduncles round, tubercled with minute, ſubulate, looſe, caducous bractes, ſpotted like the ſuckers and petioles. Pedicels dotted with purple. Some cymes, inſtead of an involucre, have a two-leaved, oppoſite, ſubulate bracte, growing to the peduncle, decurrent and reflex. The proper perianth is acute, upright and permanent. Petals linear-lanceolate, at firſt ſpreading, afterwards reflex, ſeſſile, inſerted below the crown of the germ. Filaments inſerted at the petals, from erect diverging: anthers oblong, two-celled, peltate. Germ ſilky, whitiſh: ſtigma capitate, ſlightly quadrangular or polygonal. Fruit a berry-form drupe, hollowed at the baſe, retaining the ſtyle, ſoft, pale blue turning whitiſh, three lines in diameter: nut roundiſh, flatted, nerved, a line and half in diameter.

It is diſtinguiſhed by its orbicular, wrinkled, very green leaves, the cymes bracted at bottom, and its very thick tubercled branches.

It flowers in the ſummer, frequently twice, but very rarely ripens a few of the fruit in autumn.

It is a native of Penſylvania, and has been long cultivated, but not commonly, in France.

11. This grows to the height of two fathoms. Stems ſeveral, upright, browniſh. Branches oppoſite, round, in younger plants ſtrict, in older ones patulous: the twigs, and eſpecially the ſuckers, ſtiffiſh, having rings at the joints, purple, warted cloſely at the baſe. Leaves acuminate, entire; midrib purpliſh at the baſe; nerves remote, confluent at the tip, prominent beneath, ſcored above, ſmooth, bright green ſcarcely paler beneath, ſpreading, flat, from two to three inches long, from twelve to fifteen lines broad: petioles erect, only one ſixth of the length of the leaf, gibboſe on one ſide, channelled on the other, purple. Cymes terminating, with two branchlets coming out together from the uppermoſt leaves, peduncled, panicled, five-parted, bracted, from eighteen to twenty-four lines in diameter. Flowers pedicelled, white, with the diſk only red, four lines in diameter. Bractes minute, caducous. Perianth four-parted to the very baſe; ſegments linear, acute, ſpreading; it is ſubpubeſcent and permanent. Petals inſerted below the crown of the germ, ſeſſile, lanceolate, ſpreading, longer than the calyx. Filaments inſerted as the petals, ſlender, ſpreading a little, ſcarcely longer than the petals: anthers oblong, two-celled, peltate, incumbent, pale blue. Germ oblong, truncate, with a nectareous crown: ſtyle ſhorter than the ſtamens: ſtigma capitate. Drupe ſoft, blue, white within, from two to three lines in diameter. Nut ovate, two lines in length.

This has the habit of C. ſanguinea and ſericea, but recedes far from them, in having the flowers in panicles. Theſe are ſmaller than in C. paniculata; and the anthers are blue.

It was introduced long ſince from North America, but is yet ſcarce. The fruit appears too late to ripen here. The leaves continue green till froſt comes on.

12. This ſhrub is the height of a man. Stems very many, upright, much branched, round, gray. Branches oppoſite, patulous, like the ſtems. Twigs and ſuckers ſtiffiſh, having rings at the joints, pale purple, warted. Leaves acuminate, almoſt entire; the nerves very lax, prominent beneath, ſcored above; bright green, beneath glaucous, ſpreading; from two to three inches long, from fifteen to eighteen lines broad: the upper ones, whilſt young, reddiſh. Petioles one third or one fourth only of the length of the leaves, round on one ſide, channelled on the other, when young ſcarcely ending in a ring, purpliſh. Thyrſes or panicles terminating, with two branchlets coming out together from the uppermoſt leaves, ſolitary, peduncled, upright, without any involucre, three inches wide. Peduncles round, purpliſh when bearing fruit. Flowers pedicelled, upright, white, three lines in diameter. Perianth four-parted, pubeſcent, permanent; the teeth very ſmall, narrow and ſharp. Petals five, inſerted below the crown of the germ, narrow-lanceolate, acute, ſpreading, afterwards turned back, larger than the calyx. Filaments inſerted as the petals, ſetaceous, diverging, the length of the corolla: anthers oblong, two-celled, peltate. Germ globular, truncate, pubeſcent, with a nectareous crown, ſtyle ſcarcely ſhorter than the ſtamens: ſtigma capitate, depreſſed. Drupe retaining the ſtyle, ſcarcely excavated at the baſe, white, three lines in diameter. Nut roundiſh, marked with lines.

It is diſtinct from all the other ſorts in having the cymes elongated into a thyrſe or panicle. It is handſome, and very full of flowers, which come out in the ſpring, or early in the ſummer; in autumn it is loaded with fruit during ſeveral months[r].

Native of North America. This and the foregoing ſort were cultivated by Mr. Miller in 1758[s].]

Theſe American ſorts are equally hardy with our common Dogwood, grow as tall, and make a much better appearance.

[Moſt ſpecies of Cornus are Shrubs, ſome of which become ſmall trees; few are herbaceous. In the latter, the uppermoſt leaves are in whorls; in the former they are oppoſite except in the ſeventh, which has them alternate. The flowers are involucred or not, in umbels or cymes; hence Monſ. L'Heritier has made two diviſions of this genus: the firſt comprehending the *Involucred umbelled* ſpecies—1. florida. 2. maſcula. 8. ſuecica. 9. canadenſis: the ſecond, thoſe which have naked *cymes*; that is, all the reſt. The cymes are either depreſſed, or elongated into a ſort of thyrſe. The flowers are white, with ſome ſweetneſs. The fruit is red in C. ſuecica, canadenſis, florida and maſcula; white in C. paniculata and alba; blue in C. ſericea, circinata and ſtricta; blackiſh purple or brown in C. ſanguinea and alternifolia. The wood has a particular ſmell, and in moſt of the ſpecies is hard and tough, particularly in the ſecond, of which the modern Indians make their arrows, as the ancients did their ſpears[t].

———" bona bello
" Cornus." *Virgil.*]

PROPAGATION AND CULTURE.

All the ſorts of Dogwood may be propagated by their ſeeds, which, if ſown in autumn ſoon after they are ripe, will moſt of them come up the following ſpring; but if the ſeeds are not ſown in autumn, they will lie a year in the ground before the plants will appear, and when the year proves dry, they will ſometimes remain two years in the ground; therefore the place ſhould not be diſturbed where theſe ſeeds are ſown, under two years, if the plants ſhould not come up ſooner. When the plants are come up, they ſhould be duly watered in dry weather, and kept clean from weeds; and the autumn following they may be removed, and planted in beds in the nurſery, where they may remain two years, by which time they will be fit to tranſplant where they are to remain. The beſt ſeaſon for this is the autumn. They are alſo propagated by ſuckers, and laying down the branches. Moſt of the ſorts produce plenty of ſuckers, (eſpecially when they are planted on a moiſt light ſoil,) which may be taken off from the old plants in autumn, and planted into a nurſery for a year or two, and then may be tranſplanted into the places where they are to remain; but thoſe plants which are propagated by ſuckers,

[r] L'Heritier. [s] Hort. kew. [t] L'Heritier.

rarely have ſo good roots as thoſe which are propagated by layers; and being much more inclinable to ſhoot out ſuckers, they are not near ſo valuable as plants raiſed from layers.

[Some of the ſcarcer ſorts from America are ſometimes engrafted into the fourth or fifth.]

8. The eighth ſort is very difficult to preſerve in gardens; the only method is, to remove the plants from the places of their natural growth, with good balls of earth to their roots, and plant them in a moiſt ſhady ſituation, where they are not annoyed by the roots of other plants. In ſuch a ſituation they may be preſerved two or three years, but it rarely happens that they will continue much longer.

Cornus. See *Amyris, Laurus, Memecylon.*

CORNUTIA. (*So called by Plumier from Jacob Cornutus, a phyſician of Paris, who publiſhed a hiſtory of Canadian plants,* 1635.)

Lin. gen. n. 766. *Reich.* 825. *Schreb.* 1028. *Juſſ.* 107. *Plum.* 17. *Agnanthus. Vaill. A. G.* 1722.

Claſſ. 14. 1. Didynamia Gymnoſpermia.
Nat. order of *Perſonatæ. Vitices* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, roundiſh, very ſmall, tubular, five-toothed, permanent.

Cor. one-petalled, ringent; *Tube* cylindric, much longer than the calyx. *Border* four-cleft, *upper diviſion* erect, roundiſh; *lateral* ones diſtant; *lower* roundiſh, entire.

Stam. *Filaments* four, of which two project beyond the tube of the corolla. *Anthers* ſimple, inclining.

Pist. *Germ* roundiſh; *Style* very long, two-parted; *Stigmas* thickiſh.

Per. *Berry* globoſe, at the baſe comprehended by the calyx.

Seed ſingle, kidney-form.

ESSENTIAL CHARACTER.

Cal. five-toothed. *Stam.* longer than the corolla. *Style* very long. *Berry* one-ſeeded.

SPECIES.

1. Cornutia pyramidata. *Hoary-leaved Cornutia.*
Lin. ſpec. 875. *Reich.* 3. 168. *hort. cliff.* 319. *Plum. gen.* 32. *ic.* 106. *f.* 1.
Agnanthus viburni folio. *Vaill. act. par.* 1722. 273.
Leaves oppoſite, ovate, flowers in terminating corymbs.

[2. Cornutia quinata.
Lour. cochinch. 387.
Leaves quinate, lanceolate-ovate, flowers in racemes.]

DESCRIPTIONS, &c.

1. It grows to the height of ten or twelve feet. The branches are four-cornered, and grow ſtraggling. Leaves oppoſite, [ovate, hoary, on very ſhort petioles, acuminate, deciduous. The petiole in falling is broken off a line diſtant from the branch, and remains a hard, truncate, blunt, perennial proceſs, ſupporting the branches that come out from the axils. Flowers in corymbs at the ends of the branches[u]:] they are of a fine blue colour, uſually appear in autumn, and ſometimes remain in beauty two months and more.

This plant was firſt diſcovered by Plumier in America. It is found in plenty in ſeveral of the iſlands in the Weſt Indies, as alſo at Campeachy and La Vera Cruz, from both of which places ſeeds were ſent to Mr. Miller, firſt by Dr. Houſtoun, and afterwards by Mr. Robert Millar.

[2. This is a middle-ſized tree, with ſpreading, round branches. Leaves acuminate, quite entire, ſmooth, on a long common petiole. Flowers greeniſh yellow. Corolla ſomewhat funnel-ſhaped; the upper lip trifid, the lower bifid and ſhorter. Native of China, in the woods near Canton[x].]

PROPAGATION AND CULTURE.

1. It is propagated by ſeeds, which ſhould be ſown early in the ſpring on a hot-bed; and when the plants are come up, they ſhould be tranſplanted each into a ſeparate halfpenny pot, filled with light freſh earth, and plunged into a hot-bed of tanners bark, obſerving to ſhade them until they have taken root; after which they ſhould have freſh air let into the bed, in proportion to the warmth of the ſeaſon, and ſhould be frequently watered, for it naturally grows on ſwampy ſoils. When the plants have filled theſe pots with their roots, they ſhould be ſhifted into others of a larger ſize, and plunged into a hot-bed again, where they ſhould be continued till october, when they muſt be removed into the bark-ſtove, and plunged into the tan, for otherwiſe it will be very difficult to preſerve them through the winter. The ſtove in which theſe plants are placed ſhould be kept to the temperate heat marked on Mr. Fowler's thermometers, which will agree better with them than a hotter ſtove. The third year from ſeeds theſe plants will flower, when they make a fine appearance in the ſtove, but they never perfect their ſeeds in England.

Theſe may alſo be propagated by cuttings, which, if planted into pots filled with earth, and plunged into a bark-bed, obſerving to ſhade and water them, will take root, and muſt be afterwards treated as the ſeedling plants.

Cornutia and Cornutioides. See *Premna.*

Corona imperialis, & regalis. See *Fritillaria.*

Corona solis. See *Buphthalmum, Helianthus, Silphium.*

Coronaria. See *Agroſtemma.*

CORONILLA. (*Diminutive from corona, a crown; the flowers crowning the branches in a corymb.*)

Lin. gen. n. 883. *Reich.* 956. *Schreb.* 1198. *Gærtn. t.* 155. *Juſſ.* 361. *Tourn.* 419. *Emerus Tourn.* 418. *Mill. dict. Securidaca. Tourn.* 224. *Gærtn. t.* 153. *Mill. dict.*

Claſſ. 17. 4. Diadelphia Decandria.
Nat. order of *Papilionaceæ,* or *Leguminoſæ.*

GENERIC CHARACTER.

Cal. *Umbellule* ſimple:
Perianth one-leafed, very ſhort, compreſſed, bifid, erect: the *three inferior teeth* ſmaller; the *two ſuperior* conjoined; permanent.

Cor. papilionaceous.
Standard heart-ſhaped, reflected on all ſides, ſcarce longer than the wings.
Wings ovate, converging at top, gaping at bottom, obtuſe.
Keel compreſſed, acuminate, aſcending, uſually ſhorter than the wings.

Stam. *Filaments* diadelphous (ſingle and nine-cleft), aſcending at almoſt a right angle, the tips widiſh. *Anthers* ſimple, ſmall.

Pist. *Germ* columnar, oblong. *Style* briſtled, aſcending. *Stigma* ſmall, obtuſe.

Per. *Legume* very long, columnar, ſtraight, contracted with an iſthmus between each ſeed; two-valved, one-celled, parting by joints.

Seeds many.

Obs. *In* Coronilla *of* Tourn. *the Legume is columnar as if jointed: ſeeds longiſh.*
In Securidaca Tourn. *the Legume is compreſſed, with one ſuture, flat, the other narrow. Seeds quadrangular.*
In Emerus Tourn. *the claws of the corolla are longer than the calyx: the Legume narrow and ſubulate: ſeeds cylindric.*

ESSENTIAL CHARACTER.

Cal. two-lipped $\frac{2}{3}$: the upper teeth connate. *Standard* ſcarcely longer than the wings. *Legume* contracted between the ſeeds.

SPECIES.

1. Coronilla Emerus. *Scorpion Sena.*
Lin. ſpec. 1046. *Reich.* 3. 490. *hort. cliff.* 363. 4; *fl. ſuec. n.* 636. *Hall. helv. n.* 389. *Scop. carn. n.* 911. *Villars dauph.* 3. 395.
C. major. *Riv. tetr. t.* 97.
Emerus *Cæſalp.* 117. major. *Mill. dict. n.* 1. *fig. t.* 132. *f.* 1.
Colutea ſiliquoſa f. ſcorpioides major. *Bauh. pin.* 397.
C. ſcorpioides. *Ger.* 1116. *f.* 2. *emac.* 1299. *f.* 2. *Bauh. hiſt.* 1. 381. *Raii hiſt.* 923.—major. *Park. theat.* 226. *n.* 2.
β. Col. fil. minor. *Bauh. pin.* 397.

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[u] Linn. hort. cliff.

[x] Loureiro.

Col. ſcorpioides humilis. *Ger.* 1117. *f.* 3. *emac.* 1300. *f.* 3. *Bauh. hiſt.* 1. 382. 1. *Raii hiſt.* 924.—humilior. *Park. theat.* 227. *f.* 3.
Emerus minor. *Mill. dict. n.* 2. *fig.* 132. *f.* 2.
Shrubby: peduncles with about three flowers; claw of the corolla three times the length of the calyx; ſtem angular.

2. Coronilla juncea. *Linear-leaved Coronilla.*
Lin. ſpec. 1047. *Reich.* 3. 490. *Barr. ic.* 133. (*Dorycnium.*)
Colutea caule geniſtæ fungoſo. *Bauh. hiſt.* 1. 383. *f.* 2. *Raii hiſt.* 925.
Polygala major maſſiliotica. *Bauh. pin.* 349.
Shrubby: leaflets quinate and ternate, linear-lanceolate, ſomewhat fleſhy obtuſe.

3. Coronilla valentina. *Small ſhrubby Coronilla.*
Lin. ſpec. 1047. *ſyſt.* 669. *Reich.* 3. 491. *hort. upſ.* 234. *cliff.* 363. 1. *Gouan. monſp.* 377. *Mill. fig. t.* 107. *Retz. obſ.* 2. *n.* 69. *Curt. mag. t.* 185. *Gærtn. fruct.* 2. 344.
Polygala altera. *Bauh. pin.* 349. *Riv. tetr. t.* 92.
P. valentina. *Cluſ. hiſt.* 1. 98. *Park. theat.* 227. *f.* 5. *Bauh. hiſt.* 1. 383. *f.* 1.
Coronilla ſ. Colutea minima. *Lob. ic.* 2. 78. *Ger.* 1118. *f.* 5. *emac.* 1300. *f.* 5. *Raii hiſt.* 924. 5.
Shrubby: leaflets about nine; ſtipules ſuborbiculate.

4. Coronilla glauca. *Great ſhrubby Coronilla.*
Lin. ſpec. 1047. *ſyſt.* 669. *Reich.* 3. 491. *amœn.* 4. 285. *mant.* 444. *Mill. fig. t.* 289. *f.* 1. *Curt. mag. t.* 13. *Retz. obſ.* 2. *n.* 70.
Colutea ſcorpioides altera. *Cluſ. pannon. ic.* 46. *Gouan. monſp.* 378.—maritima glauco fol. *Bauh. pin.* 397. *prodr.* 157. *Raii hiſt.* 924.
Shrubby: leaflets ſeven, very obtuſe; ſtipules lanceolate.

[5. Coronilla coronata. *Crowned Coronilla.*
Lin. ſpec. 1047. *ſyſt.* 669. *Reich.* 3. 492. *Jacqu. auſtr.* 1. *t.* 95. *Hall. helv. n.* 388. *Jungh. cent.* 1. *f.* 4.
C. montana. *Riv. tetr. t.* 93. *Scop. carn. n.* 912. *t.* 44.
Colutea ſcorpioides 2. *Cluſ. hiſt.* 1. 98.—ſiliquoſa minor coronata. *Bauh. pin.* 397. *Raii hiſt.* 924.—montana Cluſii. *Ger.* 1117. *f.* 4. *emac.* 1300. *f.* 4. *Bauh. hiſt.* 382. *f.* 2.
Shrubby: leaflets nine, obovate, the inmoſt approximating to the ſtem; ſtipule oppoſite to the leaf, two-parted.]

6. Coronilla minima. *Leaſt Coronilla.*
Lin. ſpec. 1048. *ſyſt.* 670. *Reich.* 3. 492. *mant.* 444. *amœn.* 4. 327. *Jacqu. auſtr.* 3. *t.* 271. *Villars dauph.* 3. 396.
Ferrum equinum, ſiliquis in ſummitate. *Bauh. pin.* 349.—gallicum. *Park. theat.* 1092. 5. *Raii hiſt.* 925. 1.
Polygalon Cortuſi. *Bauh. hiſt.* 2. 351.
Lotus enneaphyllos. *Dalech. hiſt.* 510.
Underſhrubby, procumbent: leaflets nine, ovate; ſtipule oppoſite to the leaf, emarginate; legumes angular, knotty.

7. Coronilla argentea. *Silvery-leaved Coronilla.*
Lin. ſpec. 1048. *Reich.* 3. 493. *Mill. fig. t.* 106.
Colutea ſcorpioides odorata. *Alp. exot.* 17. *Raii hiſt.* 925. 9.
Shrubby: leaflets eleven, ſilky, the outmoſt larger than the reſt.

8. Coronilla Securidaca. *Hatchet Vetch.*
Lin. ſpec. 1048. *ſyſt.* 670. *Reich.* 3. 493. *hort. cliff.* 363. 3. *upſ.* 234.
Securidaca lutea. *Mill. dict. fig. t.* 232.—major. *Bauh. pin.* 348. *Raii hiſt.* 921.—vera. *Cluſ. hiſt.* 2. 236. *Mor. hiſt. ſ.* 2. *t.* 6. *f.* 10.
S. legitima. *Gærtn. fruct.* 2. 337.
Hedyſarum primum. *Dod. pempt.* 546. *Dalech. hiſt.* 445. *f.* 2 & 4.—majus. *Ger.* 1056. *f.* 1. *emac.* 1233. *f.* 1. *Park. theat.* 1087. *f.* 1.
Herbaceous: legumes ſickle-ſword-ſhaped; leaflets very many.

9. Coronilla varia. *Purple Coronilla.*
Lin. ſpec. 1048. *ſyſt.* 670. *Reich.* 3. 493. *hort. cliff.* 363. 2. *upſ.* 235. *Hall. helv. n.* 387. *Scop. carn. n.* 913. *Pollich. pal. n.* 691. *Riv. tetr. t.* 94. *Villars dauph.* 3. 397. *Garid. aix.* 129. *t.* 25. *Krock. ſileſ. n.* 201. *Mill. fig. t.* 106. *p.* 71. *Curt. magaz.* 258. *Fl. ruſt. t.* 15.
Hedyſarum purpureum. *Tabern. hiſt.* 516.
Securidaca 2. altera ſpecies. *Cluſ. hiſt.* 2. 237.—dumetorum major, fl. vario, ſiliquis articulatis. *Bauh. pin.* 349.—major articulata. *Park. theat.* 1088. 3. 1089. *fig.*
Herbaceous: legumes erect cylindric ſwelling numerous; leaflets very many ſmooth.

10. Coronilla cretica. *Cretan Coronilla.*
Lin. ſpec. 1048. *Reich.* 3. 494. *mant.* 445. *Jacqu. hort.* 1. *t.* 25. *Retz. obſ.* 1. 24.
C. cretica herbacea, fl. parvo purpuraſcente. *Tourn. cor.* 44.
Herbaceous: legumes five together, erect, columnar, jointed; leaflets eleven.

[11. Coronilla ſcandens. *Climbing Coronilla.*
Lin. ſpec. 1048. *Reich.* 3. 494. *Plum. ic.* 107. *f.* 3.
Stem climbing, flaccid.

12. Coronilla cochinchinenſis.
Lour. cochinch. 452.
Suffruticoſe, leaflets about fifteen pairs, peduncles ſubtriflorous, legumes erect toruloſe.]

13. Coronilla hiſpanica. *Spaniſh Coronilla.*
Mill. dict. n. 4.
Shrubby, leaflets nine, emarginate, ſtipules large, roundiſh.

14. Coronilla orientalis. *Levant Coronilla.*
Mill. dict. n. 8.
C. orient. herbacea, fl. magno luteo. *Tournef. cor.* 44.
Herbaceous, legumes numerous radiate thick, jointed, leaflets glaucous underneath.

DESCRIPTIONS, &c.

1. [Height from two to ſix feet, (eight or nine in gardens.) Stem not very ſtraight, branched and brachiate: (ſo weak as ſometimes to want ſupport.) Leaflets three or four pairs, gradually larger, almoſt cordate, glaucous, ſmooth. Peduncles umbelled, with from three to five flowers. Calyx broad, four-toothed, longer than the peduncle. Corolla yellow: ſtandard cordate, broad, erect or reflex, marked with lines at the baſe, very remote from the other petals; wings a little ſhorter than the keel, which is wide, with a ſharp beak. Before the claw of the ſtandard is a nectareous ſcale. Legume long, with a claw at the end, and the joints obſcurely diſtinct. Seeds cylindric [a].]

Mr. Miller, who kept this ſpecies diſtinct from the Coronillas, under its old name of *Emerus*, divided it into *greater* and *leſs*. The former, he ſays, is very common in the Engliſh gardens, but the latter in very few, and not known till he procured the ſeeds from Italy. The latter does not riſe to more than half the height, but has larger leaves; the flowers alſo are rather larger, and are on ſhorter peduncles. The leaves, fermented in a vat, in the ſame manner as is practiſed with Indigo, will afford a dye very nearly equal to what is procured from that plant.

Mr. Miller has a third ſort, which he names *Emerus herbacea*, diſcovered by Plumier in the French Weſt India iſlands, and by Houſtoun at La Vera Cruz. Stem herbaceous, upright, three feet high. Leaflets about twenty pairs, blunt, deep green. Flowers ſolitary, axillary, on peduncles two inches long, large, pale yellow. Legumes ſlender, compreſſed, more than ſix inches long, toruloſe, with a border on each ſide.

[The common ſort is a native of France, Germany, Switzerland, Auſtria, Carniola, Savoy.

I found it flowering in april, about Geneva, in many places.

Cultivated in 1596, by Gerarde [b].]

2. This riſes from two to four feet high, with many ſlender woody branches. The flowers ſtand upon pretty long axillary peduncles, in ſmall

[a] Haller & Scopoli.

[b] Hort. kew.

bunches; they are of a bright yellow colour, and appear for ſix or ſeven months together, but have not produced ſeeds.

[It has branches like Broom; and ſmall leaves, that are ſomewhat fleſhy[c].

Native of the South of France.

Cultivated 1768, by Mr. Miller[d].]

3. This riſes three or four feet high. Flowers on long axillary peduncles in cloſe bunches. [*Leaflets* nine or eleven oblong-cordate or wedge-form retuſe, with a ſmall point or none, glaucous, ſomewhat fleſhy. *Stipules* large, cordate, white, edged with green. *Flowers* ſmall, deep yellow: claw of the ſtandard ſcarcely receding[e]: wings converging and concealing the keel. Joints of the legume from three to ſeven, elliptic, turgidly lenticular, valveleſs. Seeds ovate-oblong, ſlightly compreſſed, of a red-ferruginous colour[f].

It approaches very near to the *glauca*; but the leaflets are ſmaller, more numerous, and more truly glaucous; the ſtipules, which in the *glauca* are ſmall, narrow and pointed, in the *valentina* are large, almoſt round, and in the young plant ſtrikingly conſpicuous; as the plant comes into flower they drop off: this is not ſo much diſpoſed to flower the year through as the *glauca*, but produces its bloſſoms chiefly in may, june and july: the flowers of the *glauca* ſmell more ſtrongly in the day-time, thoſe of the *valentina* at all times diffuſe a very powerful odour: the latter are more diſpoſed to produce ſeed-veſſels[g]. Linneus remarks, that early in the ſpring the leaves have the colour of Rue; hence Mr. Curtis names it Rue-leaved Coronilla.

Native of Spain and Italy.

Cultivated 1656, by Mr. John Tradeſcant, jun.[h]]

4. This ſeldom is more than three or four feet high, with a woody branching ſtem. [Leaflets five or ſeven, glaucous, wedge-form, ſeldom obcordate, with a ſmall reflex point. Stipules ſmall, ſublanceolate. Flowers bright yellow, in a roundiſh bunch. Wings gaping widely at bottom, ſo as to diſcover the whole keel[i]. This, ſays Linneus, has little or no ſmell in the night. During the day the flowers are remarkably fragrant.—Native of the South of France. Cultivated 1739, in the botanic garden at Chelſea[k]. It is diſtinct from C. valentina in having the ſtems not erect, but decumbent. If it has never more than ſeven leaflets, it cannot be the plant figured by Miller in t. 289. f. 1., which indeed has large broad ſtipules, and more reſembles the *valentina*. Flowering from ſeptember to may; indeed almoſt the whole year.

5. Stems erect, little branched, round, ſmooth, about eighteen inches in height, woody at bottom only. Leaves unequally pinnate: leaflets four, five or ſix pairs, glaucous, ſmooth, ovate or retuſe, ending in a point; the end leaflet more obtuſe. Peduncles to three inches in length, round, ſmooth, ſupporting from twenty to twenty-ſix flowers on pedicels three, or blank lines in length. Calyx a line long, yellowiſh: corolla yellow; ſtandard ſeparate, not very large, reflex, ovate, obtuſe: wings ovate, not hooked, a little longer than the keel, which is broad and ſharply beaked. Legumes an inch long, round, deflected, ſcarcely contracted between the ſeeds, terminated by the aſcending ſtyle. The end of the keel is apt to be green, and this with the glaucous hue of the leaves, indicates that a blue colour may be produced from theſe yellow flowers by putreſcence[l].

Native of the ſouthern countries of Europe.—Introduced 1776, by Joſeph Nicholas de Jacquin, M. D. It flowers in july[m].

6. Root perennial. Stems ſeveral, woody, branched, two or three inches long, and proſtrate. Hence ſpring, annual, herbaceous, round branches, pale green, alſo proſtrate, leafleſs at top, and ending in a little bunch of flowers. Leaflets five pairs at moſt, obovate, ovate-roundiſh, or orbicular, blunt, quite entire, thick, glaucous on both ſides, veinleſs, ſmall, on very ſhort and ſlender petioles, having the taſte of Rue; end leaflet obcordate: midrib round on one ſide, grooved on the other. Stipule one-leafed, membranaceous, pale, converging ſo as to embrace the baſe of the leaf, bifid at top on the back, often deciduous. Flowers about ſix, yellow, ſweet-ſmelling. Calyx ſmall, green. Wings of the corolla very concave, blunt, twice as long as the keel. Legumes pendulous, ſlightly four-cornered, brown, jointed, rugged. Seeds oblong, brown. The whole plant is very ſmooth[n].

Stem, according to Linneus, the ſtature of *Lotus corniculata*. The loweſt leaflets of the petioles approximating to the ſtem (as in *C. coronata* and *varia*) like ſtipules, ſpreading, expanded in a plane, not leſs than the reſt.

Native of the ſouthern countries of Europe. Cultivated 1683, by Mr. James Sutherland[o].

7. This is a very humble ſhrub, rarely growing more than two feet high, when planted in a good ſoil; but in a dry barren place, not much above one foot. The ſtem is hard and woody, from which the branches are produced on every ſide near the ground, ſo as to form a low buſhy ſhrub. At the joints where the leaves are produced are two ear-ſhaped ſtipules. The flowers are on long ſlender axillary peduncles: they are yellow, and have a ſtrong ſweet ſcent: as the plants always produce great plenty of them, they make a fine appearance during the month of may, which is their ſeaſon for flowering. The ſeeds ripen in auguſt and ſeptember.—The ſilvery colour of this plant is occaſioned by its growing on a poor dry ſoil; and if it is removed into better ground, it will take a glaucous colour; and the contrary.

Native of the iſland of Crete[p].]

8. Root annual, compoſed of a few ſlender fibres, which run pretty deep in the ground. Stems herbaceous, trailing, a foot and half long, dividing into ſeveral branches. Leaves unequally pinnate, compoſed of ſeven or eight pairs of oval, ſmooth, blunt, emarginate leaflets, of a deep green colour; the innermoſt larger, and diminiſhing in ſize to the end. Peduncles axillary, in pairs; ſlender, from four to ſix inches long, with a large cluſter of yellow flowers at the top. [Legumes near four inches long, compreſſed, a little bent like a ſickle, but ſhaped like a broad ſword, terminated by the ſtigma which is ſhort, clawed, but not jointed; in the middle it is pubeſcent, and where the ſeeds lie obſcurely toruloſe; at the ſides it is ſmooth, and has a broad margin; within it is divided into ſeveral cells, but has only two valves; the ſeminal ſuture is divided by a deep furrow: partitions membranaceous, very thin, permanent. Seeds about twelve, of an oblong quadrangular form, compreſſed, ſmooth, of a red ferruginous colour[q].

It ſleeps with the leaflets converging above the petiole, and bent towards the baſe of it[r].

Native of Spain. Cultivated 1596, by Gerarde. Flowering in july[s].

9. Root perennial, creeping widely. Stems from four to ſix feet in height when ſupported, otherwiſe trailing. Leaves unequally pinnate; leaflets oblong, ſmall, ſome in pairs, others alternate, deep green; the loweſt uſually approximate to the ſtem, like ſtipules, as in *C. coronata*, or are very ſmall. The flowers come out many together in roundiſh bunches, on peduncles which are about the ſame length with the leaves. The corolla varies from a deep to a light purple, to whitiſh and even wholly white; and ſometimes there is a mixture of both. The legumes are ſlender, and from two to three inches in length.

Linneus obſerves, that the loweſt leaflets uſually approximate to the ſtem, like ſtipules, as in *C. coronata*, or are very ſmall. The peduncles are the length of the leaves.

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[c] Linn. ſpec.
[d] Hort. kew.
[e] Retz.
[f] Gærtner.
[g] Curtis.
[h] Hort. kew.
[i] Retz.
[k] Hort. kew.
[l] Haller & Scopoli.
[m] Hort. kew.
[n] Jacquin.
[o] Hort. kew.
[p] Mill. fig.
[q] Gærtner.
[r] Linn. ſyſt.
[s] Hort. kew.

Native of France, Germany, &c. flowering from june to autumn. Cultivated in the time of Parkinſon, 1640[t]: as an ornamental plant.

This plant was formerly propoſed to be cultivated as a proper food for cattle; and it was found that it grew very readily, and might be very beneficial to the farmer. Mr. Miller informs us that he remembers to have ſeen a large ſpot of ground planted with it at Deepden near Dorking in Surry, at a ſeat of the Honourable Mr. Howard; where, although it had been neglected for ſome years, it was growing ſo rank as to get the better of all the weeds, brambles, &c. He found ſome of the branches upwards of five feet long, and very tender their whole length; ſo that a ſmall ſpot of ground will ſupply a conſiderable quantity of fodder, eſpecially in dry ſeaſons. Horſes and cows ſeemed to eat it greedily[u].

Mr. Curtis remarks, that its bitterneſs will be an objection to its being cultivated for cattle. A gentleman, however, who has lately ſown it on my recommendation, aſſures me that cows eat it very readily.

10. Stems aſcending, angular, even, two or three feet long. Leaflets fifteen, ſmooth, very obtuſe, with a point; the odd one not larger than the others. Stipules ſmall, patulous. Involucres very ſmall, many-leaved, mortified at top. Corollas blood-red; the ſtandard marked with purple veins; the wings convex on the outſide; the keel dark purple at the end. Legumes bent in[x], acuminate,] near two inches long.

Native of Candia, whence Tournefort ſent the ſeeds to the Royal garden at Paris.

[Cultivated 1731, by Mr. Miller[y].]

11. This has a ſlender, hairy, twining ſtalk, of a brown colour, twiſting round any of the ſhrubs which ſtand near it, whereby it riſes eight or ten feet high; for the moſt part compoſed of five oval leaflets, one inch long, and half an inch broad, of a deep green. The flowers come out by pairs at each joint, ſtanding on very ſhort ſeparate peduncles erect; they are large, and of a pale yellow; theſe are ſucceeded by taper jointed pods, more than three inches long, which are covered with ſhort, ſoft, white, hairy down, and ſtand erect.

Diſcovered by Father Plumier in South America. Dr. Houſtoun ſent the ſeeds from Carthagena to Mr. Miller.

[12. Stem four feet high, upright, branched. Leaflets oblong, blunt, with a ſlender point. Flowers yellow, axillary. Calyx five-toothed, ſhort; the teeth nearly equal. Legume upright, filiform, toruloſe. Seeds ſubcylindric.

Native of Cochinchina[z].]

13. Mr. Miller deſcribes this ſort as being like the *glauca*, but the leaves having fewer leaflets; [in the ſpecific character, however, he ſays that the leaflets are eleven in this, whereas the *glauca* has only ſeven. From the largeneſs of the ſtipules I ſhould ſuppoſe it to be the ſame with the *Valentina*.] According to Miller, the flowers are larger than thoſe of *glauca*, and have little ſcent.

14. Root perennial. Stem annual, erect, upwards of two feet high. Leaflets five or ſix pairs, oblong. Peduncles ſtrong, upwards of ſix inches in length, ſupporting large bunches of yellow flowers, ſucceeded by ſhort thick pods about an inch long. It flowers in june and july, and in warm ſeaſons the ſeeds will ripen in autumn.

Diſcovered by Tournefort in the Levant, whence he ſent the ſeeds to Paris. There is a variety with large white flowers.

PROPAGATION AND CULTURE.

1. This ſhrub is eaſily propagated by ſowing the ſeeds, which it commonly produces in great quantity, in march, upon a bed of light ſandy earth. Keep it clear from weeds, and in very dry weather refreſh it often with water, but gently, ſo as not to waſh the ſeeds out of the ground. When the plants are come up, watering in dry weather will promote their growth. At michaelmas, if the plants have thriven well, draw out the largeſt, and tranſplant them into a nurſery, in rows at three feet diſtance, and one foot aſunder in each row. The reſt of the young plants may remain another year before they are tranſplanted into the nurſery, where they ſhould continue two years, when they will be fit to plant out where they are to remain. If they are left in the nurſery longer, they are apt to make downright roots, the cutting off which is often fatal to the ſhrub; and in removing them at any time, care ſhould be taken not to break or wound the roots.

It may alſo be propagated by laying down the tender branches, which will take root in about a year's time, and may then be tranſplanted into a nurſery, and managed in the ſame manner as the ſeedling plants.

2, 4, 7. Theſe are propagated by ſowing the ſeeds in the ſpring, either upon a gentle hot-bed, or on a warm border of light freſh earth; and when the plants are come up about two inches high, they ſhould be tranſplanted either into pots, or a bed of good rich earth, at about four or five inches diſtance every way, where they may remain until they have obtained ſtrength enough to plant out for good; which ſhould be either into pots filled with good freſh earth, or a warm ſituated border; in which, if the winter is not too ſevere, they will abide very well, provided they are in a dry ſoil.

Some plants of the ſecond ſort ſhould be ſheltered under a common frame in winter, becauſe they are often deſtroyed in hard froſts; but in mild weather they ſhould be expoſed to the air, otherwiſe they will draw up weak.

3, 5, 6. Theſe are propagated by ſeeds; which may be ſown on a bed of light earth in april, and when the plants are fit to tranſplant, ſome of them ſhould be planted in a warm border, cloſe to a warm wall or pale, to which the branches ſhould be trained: obſerving to ſhade them from the ſun till they have taken freſh root, and alſo to refreſh them with water when they require it. After they are well rooted, they will require no other culture but to keep them clean from weeds, and faſten their branches to the wall; the next year they will flower, and if they are on a dry ſoil, and in a warm ſituation, they will continue many years. Some of theſe plants ſhould be put into pots, that they may be removed into ſhelter in winter; where, if they are not too tenderly treated, they will flower great part of that ſeaſon; but theſe will rarely produce ſeeds, whereas thoſe in the full ground generally do, provided they are covered with mats in froſty weather.

8. Sow the ſeeds in borders of light freſh earth in the ſpring, where the plants are to abide, allowing them at leaſt two feet diſtance.

9. The roots creep very far under ground, by which it increaſes greatly, and when permitted to remain unremoved two or three years, it will overbear what plants grow near it; for which reaſon the roots ſhould be confined, and it ſhould be planted at a diſtance from any other plants. It will grow in almoſt any ſoil and ſituation, but thrives beſt in a warm ſunny expoſure, in which the flowers will be much fairer, and in greater quantities.

10. Sow the ſeeds on a bed of light earth in the ſpring, where the plants are deſigned to remain; thin them where too cloſe, and keep them clean from weeds. It is an annual, flowering in june, and ripening the ſeeds in autumn.—Native of the Archipelago, whence Tournefort ſent the ſeeds to Paris.

11. This plant is propagated by ſeeds, which ſhould be ſown early in the ſpring on a moderate hot-bed; and when the plants are come up, they ſhould be each tranſplanted into a halfpenny pot filled with freſh rich earth, and plunged into a hot-bed of tanners bark, obſerving to ſhade them until they have taken root; after which time they ſhould have air and water in proportion to the warmth of

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[t] Hort. kew. [u] Mill. fig. [x] Linn.
[y] Hort. kew. [z] Loureiro.

the ſeaſon; and when they have filled theſe pots with their roots, they ſhould be ſhifted into pots of a larger ſize, and plunged into the hot-bed again, where they muſt remain until autumn, when they ſhould be removed into the ſtove, and plunged into the tan. Theſe plants muſt be conſtantly kept in the bark-ſtove, and placed among plants which require a moderate heat; where they will thrive and flower, and ſhould be ſupported by tall ſticks, round which they will twine as Hops do; for if they have not this ſupport, they will twiſt round other plants, and ſpoil them. Theſe are very proper plants to place againſt an eſpalier on the back part of the ſtove, amongſt other climbing plants, where they will make an agreeable variety.

If the plants are carefully managed in the winter, they may be preſerved two or three years, and will annually flower in july, and ſometimes they will produce ripe ſeeds in England.

14. This ſort is propagated by ſeeds, which ſhould be ſown on a warm border of light earth in the ſpring, and when the plants come up they muſt be carefully cleaned from weeds; when they are fit to remove, they ſhould be tranſplanted into a warm border, where they are to remain, ſhading them from the ſun till they have taken freſh root, after which they will require no farther care in ſummer, but to keep them clean from weeds; and in autumn, when the ſtalks are decayed, if the ſurface of the ground is covered with ſome old tan to keep out the froſt, it will be a ſecure method to preſerve the roots. The ſecond year the plants will flower, and, if the ſame care is taken in winter, the roots may be continued ſome years.

Coronilla. See *Galega.*

Coronopus. See *Anthyllis, Cochlearia, Plantago.*

[CORRIGIŎLA. (*Diminutive from Corrigia, a thong of leather, or ſhoe latchet.*)

Lin. gen. n. 378. *Reich.* 409. *Schreb.* 516. *Gærtn.* 75. *Juſſ.* 313. *Polygonifolia Dill. gen.* 3.

Claſſ. 5. 3. Pentandria Trigynia.

Nat. order of *Holoraceæ. Portulaceæ* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* five-leaved: *leaflets* ovate, concave, ſpreading, ſize of the corolla, membranaceous on the margin, permanent.

Cor. *Petals* five, ovate, ſpreading, ſcarce larger than the calyx.

Stam. *Filaments* five, ſubulate, ſmall. *Anthers* ſimple.

Pist. *Germ* ovate, three-cornered. *Style* none. *Stigmas* three, obtuſe. (Styles two. *G.*)

Per. none. Calyx converging.

Seed ſingle, ovate, three-ſided. (Nut ſmall, rounded-three-cornered. *G.*)

ESSENTIAL CHARACTER.

Cal. five-leaved. *Pet.* five. *Seed* one, three-ſided.

SPECIES.

1. Corrigiola litoralis. *Baſtard Knot-graſs.*

Lin. ſpec. 388. *Reich.* 743. *hort. upſ.* 70. *cliff.* 112. *Hall. helv. n.* 842. *Krock. ſileſ. n.* 483. *Fl. dan. t.* 334. *Gærtn. fruct.* 1. 358.

Polygonifolia. *Dill. giſs. app.* 95. *t.* 3. *Ephem. nat. cur. cent.* 6. *app. t.* 9. *f.* 20.

Polygonum littoreum minus, floſculis ſpadiceo-albicantibus. *Bauh. pin.* 281. *prodr.* 131. *Mor. hiſt.* 2. 593. *ſ.* 5. *t.* 29. *f.* 1. *Raii hiſt.* 213.

P. vel Linifolia per terram ſparſa. *Bauh. hiſt.* 3. 379.

P. alterum germanicum. *Park. theat.* 446. *n.* 8.

Alſine paluſtris minor, folio oblongo repens. *Lind. alſat. t.* 2.

DESCRIPTION, &c.

Stems many, ſlender, round, with a few branches at the end, two or three inches long, covered with leaves. Theſe are alternate, of a kind of ſpatulate form, acuminate, ſmall, ſeſſile, of a glaucous hue. Stipules in pairs, acute, ſilvery. Flowers in glomerate racemes, ſeſſile, terminating. Calyx of a whitiſh bay colour, converging: corolla white[a]. The fruit is a ſmall nut, covered with the permanent flower; it is cruſtaceous, wrinkled and tubercled, brown, one-celled and valveleſs. It incloſes a ſingle, ſubglobular, ſmooth, rufeſcent ſeed. A filiform umbilical chord aſcends from the baſe of the nut to the top of the ſeed. The embryo is roundiſh, inverted, pale yellow, and ſurrounds the albumen like a ring[b]. It flowers in june and july; and is annual.

Native of France, Germany, Denmark, Switzerland, Piedmont, in ſandy ſoils, uſually near the ſea or rivers.—Found by Mr. Hudſon on Slapham ſands beyond Dartmouth, and near the Star point.

Corrigiola. See *Illecebrum.*

Corruda. See *Aſparagus.*

Cortex papetarius. See *Dialium.*

Cortex caryophylloides. See *Laurus.*]

CORTŪSA. (*So named by Matthiolus, in honour of his friend Jacob Ant. Cortuſus, profeſſor of botany at Padua.*

Lin. gen. n. 198. *Reich.* 211. *Schreb.* 259. *Boerh. ind.* 206. *Gærtn.* 50. *Juſſ.* 96.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Preciæ. Lyſimachiæ* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* five-cleft, ſpreading, very ſmall, permanent: *Diviſions* lanceolate, three-toothed.

Cor. one-petalled, wheel-ſhaped. *Tube* ſcarce any; *Border* flat, five-parted, ample, *diviſions* ovate, acute; *Throat* with an elevated ring.

Stam. *Filaments* five, obtuſe; *Anthers* two-plated, oblong, erect, affixed to the outward part.

Pist. *Germ* ovate. *Style* filiform, longer than the corolla. *Stigma* almoſt headed.

Per. *Capſule* oval, acuminate, half-five-valved.

Seeds numerous, compreſſed, cornered.

(Recept. columnar, free. *G.*)

ESSENTIAL CHARACTER.

Cor. wheel-ſhaped (funnel-ſhaped. *G.*), the throat having an elevated ring. *Capſ.* one-celled, oval, five-valved at the end.

SPECIES.

1. Cortuſa Matthioli.

Lin. ſpec. 206. *Reich.* 413. *hort. cliff.* 50. *Allion. act. helv.* 4. 271. *fl. pedem. n.* 340. *t.* 5. *f.* 3. *Krock. ſileſ. n.* 297. *Cluſ. hiſt.* 1. 307. *Gærtn. fruct.* 231. *t.* 50.

Sanicula montana latifolia laciniata. *Bauh. pin.* 243.

S. alpina, ſ. Cortuſa Matth. *Ger.* 645. *f.* 4. *emac.* 788. *f.* 3. *Park.* 533. 4. *Raii hiſt.* 1084.

Calyxes ſhorter than the corolla.

2. Cortuſa Gmelini.

Lin. ſpec. 206. *ſyſt.* 193. *Reich.* 414. *amœn.* 2. 340. *Gmel. ſib.* 4. 79. *t.* 43. *f.* 1. *Gærtn. fruct.* 232.

Calyxes longer than the corolla.

DESCRIPTIONS, &c.

1. This plant ſends out many oblong ſmooth leaves, a little indented on the edges, and forming a ſort of head, like the Auricula. The peduncles come out in the centre of the leaves, riſe about four inches high, and ſupport an umbel of flowers, each on a ſlender, ſhort pedicel; they are of a fleſh colour, and ſpread open like thoſe of the Auricula.

[Leaves petioled, cordate, villoſe, toothed. Scapes eight or nine inches in height, erect, round, ſmooth at the top; pedicels many, one-flowered, umbelled, with ſtipules underneath. Corolla white or gold colour within, reddiſh violet or purple on the outſide. Diviſions of the calyx obtuſe, reflected[c]. Capſule ovate-oblong, marked with a flattiſh furrow on each ſide, two-valved, the valves when ripe frequently bifid at the end[d].

Native of the Alps, Auſtria, Sileſia, Siberia, flowering in april and may. According to Allioni it is biennial. Cultivated 1596, by Gerarde[e].]

2. Very like the firſt, but the flowers much ſmaller, and the calyxes larger. [Leaves reniform-cordate, lobed, with notches, the lobes rounded; they have

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[a] Krocker.

[b] Gærtner.

[c] Krocker.

[d] Gærtner.

[e] Hort. kew.

hairs ſcattered over them, and the petioles are long. The ſcapes are higher than the leaves. The umbel has about three flowers: the corolla is white, and the leaflets of the involucre are ovate[f]. Capſule ſmall, ovate-globular, in a bell-ſhaped calyx, gaping at top into five oblong revolute ſegments. Seeds about twenty, ſubovate, variouſly angled, rough-dotted, reddiſh brown.—This is a genuine ſpecies of Androſace, and has nothing in common with Cortuſa but the long petioles of the leaves[g].

Native of Siberia.]

PROPAGATION AND CULTURE.

Theſe plants are with great difficulty kept in a garden. The only method by which I could ever preſerve them, has been by planting them in pots, and placing them in a ſhady ſituation, where they were duly watered in dry weather; in this place they conſtantly remained both ſummer and winter, for the cold will not deſtroy them; the earth for theſe plants ſhould be light, and not too rich, for dung is very injurious to them. As they very rarely produce any ſeeds in England, the only method to propagate them is, by parting the roots in the ſame manner as is practiſed for Auriculas; the beſt time for this is about Michaelmas, ſoon after which the leaves decay.

[Cortusa. See *Buchnera*, *Heuchera*, *Mitella*, *Thalia*, *Tiarella*, *Verbaſcum*.

Corydalis. See *Fumaria*.]

CORYLUS. (*Derivation uncertain; according to ſome, from* καρυα, *a walnut.*)

Engl. *The Haſel*, or *Nut-tree*.
Fr. *Coudrier*, *Noiſettier*.

Lin. gen. n. 1074. *Reich.* 1172. *Schreb.* 1450. *Gærtn. t.* 89. *Tourn.* 347. *Malp.* 220. 221. 224. *Juſſ.* 410.

Claſſ. 21. 8. Monoecia Polyandria.

Nat. order of *Amentaceæ*.

GENERIC CHARACTER.

* *Male flowers* diſpoſed in a long ament.

Cal. *Ament common* imbricated on every ſide, cylindric, permanent.

Scales one-flowered, narrower at the baſe, wider at the top, and more obtuſe, inflex, three-cleft; *middle diviſion* equal in length to the others, but as wide again, and covering the others.

Cor. none.

Stam. *Filaments* eight, (ſix or eight. *G.*) very ſhort, growing to the interior ſide of the calycine ſcale. *Anthers* ovate-oblong, ſhorter than the calyx, erect.

* *Female flowers* remote from the males, on a very ſmall ſubglobular ament, in the ſame plant, ſeſſile, included within the bud.

Cal. *Perianth* two-leaved, (one-leafed. *Juſſ.*) leathery, lacerated on the margin, erect, length of the fruit, during the time of floreſcence ſcarcely viſible on account of its ſmallneſs.

Cor. none.

Pist. *Germ* roundiſh, very ſmall. *Styles* two, ſetaceous, much longer than the calyx, coloured. *Stigmas* ſimple.

Per. none.

Seed. *Nut* ovate, ſcalped as it were at the baſe, but little compreſſed at the tip, ſlightly pointed. (Kernels one or two. *Juſſ.*)

Obs. *This genus is very nearly allied to* Carpinus.

ESSENTIAL CHARACTER.

Male. *Cal.* one-leafed, three-cleft, ſcale-form, one-flowered. *Cor.* none. *Stam.* eight.

Fem. *Cal.* two-leaved (one-leafed. *Juſſ.*) lacerated. *Cor.* none. *Styles* two. *Nut* ovate.

SPECIES.

1. Corylus Avellana.

Lin. ſpec. 1417. *Reich.* 4. 169. *hort. cliff.* 448. *fl. ſuec. n.* 873. *mat. med.* 204. *hort. upſ.* 286. *Ait. hort. kew.* 4. 363. *Gærtn. fruct.* 2. 53. *Pallas roſs.* 1. 2. *p.* 22.

α. C. ſylveſtris. *Common Haſel-nut tree.*

Bauh. pin. 418. *Lob. ic.* 192. 2. *Fuchſ.* 398. *Ger.* 1250. 2. *emac.* 1438. 2. *Park.* 1415. 5. *Blackw.* 293. *Berg. phyt.* 2. 71. *Hudſ. angl.* 423. *With.* 1090. *Lightf.* 586. *Hall. helv. n.* 1625. *Scop. carn. n.* 1192. *Pollich. pal. n.* 912. *Allion. pedem. n.* 1979. *Raii hiſt.* 1379. *Evel. ſylva. ed. Hunt.* 220. *fig.*

β. C. alba. *White Filbert-nut tree.*

C. ſativa, fructu albo minore ſ. vulgaris. *Bauh. pin.* 417.

γ. C. rubra. *Red Filbert-nut tree.*

C. ſativa, fr. oblongo rubente. *Bauh. pin.* 418. *Duham. arb.* 188. *t.* 77.

C. maxima. *Mill. dict. n.* 2.

Nux Avellana ſ. Corylus. *Ger.* 1250. 1. *emac.* 1438. 1.

δ. C. grandis. *Cob-nut tree.*

C. ſat. fr. rotundo maximo. *Bauh. pin.* 418.

ε. C. glomerata. *Cluſter-nut tree.*

C. nucibus in racemum congeſtis. *Bauh. pin.* 418.

Stipules lanceolate; leaves roundiſh-cordate from obtuſe acuminate; branchlets hairy.

[2. Corylus roſtrata. *American Cuckold-nut tree.*

Ait. hort. kew. 3. 364. *Gron. virg.* 151.

Stipules lanceolate; leaves oblong-cordate, acute; branchlets ſmooth; calyxes of the fruit beaked.]

3. Corylus Colurna. *Conſtantinople* or *Byzantine Haſel-nut tree.*

Lin. ſpec. 1417. *Reich.* 4. 169. *hort. cliff.* 448. 2.

C. byzantina. *Herm. lugdb.* 91. *Seba muſ.* 1. *t.* 27. *f.* 2.

Avellana peregrina humilis. *Bauh. pin.* 418.

A. pumila byzantina. *Cluſ. hiſt.* 1. 11. *Ger.* 1251. 3. *emac.* 1439. 3. *Park. theat.* 1415. 4. *Raii hiſt.* 1380.

Stipules linear, acute.

DESCRIPTIONS, &c.

1. [The common Haſel-nut or Nut-tree, is properly a ſhrub. The trunk is covered with a whitiſh cloven bark, which is ſmooth on the branches, frequently of a bay colour, and ſpotted with white; on the ſhoots it is ſometimes ſmooth, ſometimes hairy, aſh-coloured and green, with white tubercles. Leaves alternate, gaſh-ſerrate, wrinkled, with hairs on both ſides ſtanding out, dark green above, bright green beneath, on very hairy round petioles, half an inch in length: the midrib beneath is white and hairy; from that ſeveral white nerves proceed vertically; and between theſe is a veiny net[a].

The male catkins appear in autumn, and wait for the expanſion of the female gems in the ſpring. The ſtyles are of a bright red colour, long and ſetaceous[b]. The flowering branches, eſpecially thoſe which bear the fertile flowers, are ſet with ſhort fine hairs terminating in globules. The catkins are in pairs, of a yellowiſh green colour: the middle ſegment of the ſcales pointed at the end. Anthers hairy[c].]

β. γ. White and Red Filberts. The ſhrubs of theſe varieties grow more erect than the common Haſel, and the ſtipules are different in ſhape. Mr. Miller having found theſe not to vary, except in the ſize and colour of the fruit, makes them a diſtinct ſpecies.

[The involucre is tubular, fleſhy at bottom, turgid, thick, torn at top; the nut ovate-oblong and large. The outer ſkin of the kernel, in γ, dark red.

δ. The Cob-nut has a very large round fruit.]

ε. The Cluſter-nut has the fruit growing in great cluſters at the ends of the branches.

[The haſel, ſays Swinburn, has the name Avellana from Avellino, a city of the kingdom of Naples, about which it is cultivated. It covers the whole face of the neighbouring valley, and in good years brings in a profit of 60,000 ducats (£.11,250). The nuts are moſtly of the large round filbert, which we call Spaniſh. They were originally imported into Italy from Pontus, and known among the Romans by the appellation of *Nux Pontica*, which in proceſs of time was changed into that of *Nux Avellana*, from the place where they had been propagated with the greateſt ſucceſs.]

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[f] Linn. ſyſt.

[g] Gærtner.

[a] Pollich.

[b] Lightfoot.

[c] Withering.

The common haſel-nut is wild in many woods and coppices in England, whence the fruit is gathered in plenty, and ſent to the London markets by the country people.

[It alſo ſerves very well for thickening woods; and when allowed to grow, will make poles of twenty feet, but it is generally cut down ſooner for walking ſticks, fiſhing rods, withes for faggotting, &c. for which purpoſes it is eſteemed a profitable wood.

The uſes of it recited by Evelyn are—for poles, ſpars, hoops, forks, angling-rods, faggots, cudgels, coals, and ſpringes to catch birds, withes and bands, the chips to purify wine, hurdles and wattling. He might have added, crates, ſpringles to faſten down thatch, the roots for inlaying or ſtaining. Where yeaſt is ſcarce, they twiſt the twigs, and ſteep them in ale during its fermentation, then hang them up to dry, and when they brew put them into the wort.

[2. This is remarkable for the length of the calyx, which continues to cover the nut entirely even after it is ripe.

Native of Virginia, in Dragon Swamps [d]. Introduced in 1745, by Archibald Duke of Argyle [e].

3. The leaves in this are a little laciniated at top. The raceme of nuts is very large [f].] The nuts themſelves are roundiſh, and in ſhape like thoſe of the common Haſel, but more than twice their ſize. The cups or involucres are alſo very large, ſo as almoſt to cover the nut, and are deeply cut at the brim.

Native of Conſtantinople. [Whence it was brought to Europe firſt in 1582, and again four years after, by David Ungnad Baron in Zorneck. Cluſius informs us, that when he left Frankfort in 1593, there was a ſhrub there above the height of a man, which had not then borne fruit, nor did it bear any two years after, though it continued to grow and flouriſh [g]. Linneus mentions a very large tree of it in the Leyden garden, in 1736, ſown there by Cluſius above a century before [h]. Cultivated here in 1665, by Mr. John Rea [i].]

PROPAGATION AND CULTURE.

All theſe ſorts may be propagated by ſowing their nuts in february; which, in order to preſerve them good, ſhould be kept in ſand in a moiſt cellar, where the vermin cannot come at them to deſtroy them, nor ſhould the external air be excluded from them, which would occaſion their growing mouldy.

The manner of ſowing the ſeeds being well known to every one, I need not here mention it, eſpecially ſince it is not the ſureſt way to obtain the ſorts deſired; for they ſeldom prove ſo good as the nuts which were ſown, or at leaſt not one in four of them will; and the method of propagating them by layers being not only the ſureſt, but alſo moſt expeditious, is what I would recommend to every one who would cultivate theſe trees for the ſake of their fruits.

[Having the ground well plowed and harrowed, let drills be drawn one yard aſunder, into theſe drop the nuts at about ten inches diſtance, and let them be covered with two inches of earth. They muſt be carefully weeded and thinned till the plants are left a yard aſunder each way. Or they may be raiſed in a nurſery, drawn from thence when they are from a foot to two feet high, and planted finally at the diſtance before mentioned. In twelve years they may be cut down for poles, but may afterwards be cut every ſeventh or eighth year.

The Filbert can only be kept true to its kind by ſuckers or layers; which laſt make the beſt trees. In ſome parts of Kent plantations of Filberts are much attended to. The trees are never ſuffered to riſe above ſix feet in height, and are regularly pruned like Gooſeberry buſhes. They are planted at the diſtance of twelve feet, and when full ſpread, the cup formed by the branches is ſix feet diameter. The ſpaces are cultivated with hoeing crops, the vigour of the trees depending on the ſtirring of the ground [k].

It is the uſual mode in Kent to raiſe them in hop-grounds, where ſometimes cherry, but more commonly apple-trees are alſo planted. They know nothing of raiſing them from layers, but do it from ſuckers, which it is the beſt way to train previouſly in a nurſery. The beſt ſoil is a ſtrong loam, with a clayey or marley bottom, in Kent termed coomey, whereon they bear greatly; the fruit is large and fine, and not maggotty. An acre has ſometimes been ſold for £.50 [l].

Corymbifera. See *Achillea.*]

CORYMBIUM. (*From* κόρυμβος, *a corymb.*)
Lin. gen. n. 1004. *Reich.* 1089. *Schreb.* 1361. *Gærtn. t.* 86. *Juſſ.* 176.
Claſſ. 19. 6. Syngeneſia Monogamia.
Nat. order of *Compoſitæ Diſcoideæ. Cinarocephalæ* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* two-leaved, one-flowered, inferior, long, priſmatic, ſix-cornered; *leaflets* erect, converging longitudinally, triangular on the back, truncated, obſcurely three-toothed, permanent: having two very ſmall leaflets at the baſe. (having a very ſhort four or five-leaved calycle. *Juſſ.*

Cor. one-petalled, equal. *Tube* very ſhort. *Border* five-parted, ſpreading: *diviſions* lanceolate.

Stam. *Filaments* five, ſimple, erect, ſeated on the tube. *Anthers* oblong, erect, ſhorter than the corolla, growing together into a cylinder.

Pist. *Germ* within the calyx, inferior to the corolla, hirſute. *Style* ſimple, erect, length of the corolla. *Stigma* oblong, two-parted, ſpreading.

Per. none. Calyx unchanged.

Seed ſingle, oblong, almoſt the length of the calyx, covered with a wool reſembling down; in the manner of a pappus: (crowned with a pitcher-ſhaped chaffy calycle.) *Juſſ.*)

Rec. naked.

Obs. *The calyx varies in ſhape.* R.

ESSENTIAL CHARACTER.

Cal. two-leaved, one-flowered, priſmatic. *Cor.* one-petalled, regular. *Seed* one, below the corolla, woolly.

SPECIES.

1. Corymbium ſcabrum.
Lin. ſyſt. 799. *Reich.* 3. 952. *ſuppl.* 392. *mant.* 120. *Burm. afr.* 189. *t.* 70. *f.* 1. *Gærtn. fruct.* 2. 42.
C. africanum. *Lin. ſpec.* 1317. *hort. cliff.* 494. *Mill. dict. n.* 1.
Bupleurifolia. *Pluk. alm. t.* 272. *f.* 5.
Leaves lanceolate channelled nerved recurved, ſmooth ſhorter than the ſtem.

[2. Corymbium glabrum.
Lin. ſyſt. 799. *Reich.* 3. 952. *ſuppl.* 392.
Bupleuro ſimilis. *Pluk. alm. t.* 272. *f.* 4.
Very ſmooth; leaves enſiform plane nerved.

3. Corymbium filiforme.
Lin. ſyſt. 799. *ſuppl.* 392.
Leaves filiform very ſmooth erect, ſhorter than the ſtem.

4. Corymbium villoſum.
Lin. ſyſt. 799. *ſuppl.* 392.
Villoſe-woolly; ſtem-leaves claſping ſubulate ſtraight plane.]

DESCRIPTIONS, &c.

1. It riſes with an erect rough ſtalk about a foot high, with a ſingle leaf at each joint, which half embraces the ſtalk. The leaves are long, narrow, and triangular, having a downy ſubſtance intermixed with them at their baſe; the upper part of the ſtalk divides into ſeveral peduncles, which are terminated by purple flowers.

[Bulb ſubglobular, formed from the withered roots of the leaves. Stem purpliſh, ſcabrous. Leaves radical, filiform-ruſhy or ſetaceous, not broadiſh or channelled [m].

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[d] Gronovius.
[e] Hort. kew.
[f] Linn. cliff.
[g] Hiſt.
[h] Cliff.
[i] Hort. kew.
[k] Hunter's Evelyn.
[l] Belcher in Young's Annals, 8. 186.
[m] Linn. mant.

Corymb ſtrict, with twin flowers cloſe together: bractes four or five, linear. Calyx club-ſhaped, with navicular valves, not involving each other[n]. Perhaps it may be only a variety of C. filiforme[o]. Native of the Cape of Good Hope.

2. Panicle lax, diffuſe. Flowers diſtinct. Bractes two or three, minute. Calyx cylindric, with one valve embracing the other[p].

3, 4. Theſe, as well as the foregoing, are natives of the Cape of Good Hope.]

PROPAGATION AND CULTURE.

1. It is propagated by ſeeds, which ſhould be ſown in a ſmall pot filled with light earth as ſoon as they are received from abroad; the pots ſhould be plunged into a bed of tanner's bark, where the heat is near ſpent, and covered with a common frame in winter, to protect the ſeeds from froſt, ſnow, and hard rains. In the ſpring, if the pots are removed into a moderate hot-bed, the plants will ſoon appear: when they are about an inch high, they ſhould be each tranſplanted into a ſeparate ſmall pot, obſerving to ſhade them until they have got new roots; ſoon after which they ſhould be gradually inured to the open air, and in june they ſhould be placed abroad in a ſheltered ſituation; where they may remain till october, when they ſhould be placed in a common frame, where they may be protected from froſt, being too tender to live abroad in England.

[CORYNOCARPUS. (*From* κορύνη, *a club, and* καρπος, *a fruit.*)

Forſt. gen. n. 16. *Lin. ſuppl.* 21. *Schreb.* 394. *Juſſ.* 288.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Berberides.* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* inferior, five-leaved: *leaflets* oblong, concave.

Cor. *Petals* five, roundiſh, narrowed at the baſe, erect. *Nectary.* Leaflets five, erect, ſhaped like the petals, but narrower, ſcarcely ſhorter, having a globular gland at the baſe, alternate with the petals.

Stam. *Filaments* five, ſubulate, from the baſe of the petals. *Anthers* oblong.

Pist. *Germ* ſuperior, globular. *Style* ſhort, filiform. *Stigma* obtuſe.

Per. *Nut* turbinate-club-ſhaped, one-ſeeded.

Seed. *Nucleus* oblong? an oblong kernel.

ESSENTIAL CHARACTER.

Nectaries five, petal-ſhaped, alternate with the petals, glandulous at the baſe.

SPECIES.

1. Corynocarpus lævigata.

Lin. ſyſt. 242. *ſuppl.* 156.

DESCRIPTION, &c.

Leaves alternate, petioled, obovate or wedge-ſhaped, ſubemarginate, entire, veined, very ſmooth. Panicle terminating, ſeſſile, large, wrinkled. Flowers white.—Native of New Zealand[a].

CORYPHA. (*From* κορυφη, *the top of any thing.*)

Lin. gen. n. 1221. *Reich.* 1337. *Schreb.* 1690. *Muſ. Cliff.* 11. *Gærtn. t.* 7. *Juſſ.* 39. *Codda-panna. H. M.* 2. 12.

Appendix. Palmæ.

Nat. order of *Palms.*

GENERIC CHARACTER.

Cal. *Spathe* univerſal compound, *Spadix* branching.

Cor. three-parted. *Petals* ovate, obtuſe, ſpreading.

Stam. *Filaments* ſix, ſubulate, longer than the corolla. *Anthers* adnate.

Pist. *Germ* roundiſh. *Style* ſubulate, ſhort. *Stigma* ſimple.

Per. *Berry* globoſe, large, one-celled.

Seed ſingle, bony, large, globoſe.

Obs. Browne *deſcribes his Corypha in a different manner:* is it therefore of a different genus?

Cal. *Spadix* ſimply branched, imbricated with proper ſpathes. *Perianth* none.

Cor. none.

Stam. *Filaments* ſix, ſhort, growing into the ſides of the germ. *Anthers* oblong.

Pist. *Germ* globoſe, ſmall; *Style* ſimple, ſhort. *Stigma* headed, ſomewhat funnel-form.

Per. *Drupe* one-celled.

Seed. *Nut*, with a bony aril.

ESSENTIAL CHARACTER.

Flowers hermaphrodite, ſix-ſtamened. *Spathe* many-leaved (none. *Cal.* ſix-leaved. *G.*) *Cor.* three-petalled (none. *G.*) *Piſt.* one. *Berry* globoſe, ſuperior, one-ſeeded. *Seed* bony, globoſe.

SPECIES.

1. Corypha umbraculifera. *Great Fan-Palm.*

Lin. ſpec. 1657. *ſyſt.* 984. *Reich.* 4. 633. *hort. cliff.* 482. *Gærtn. fruct.* 18.

Palma montana, fol. plicatili flabelliformi maximo ſemel tantum frugifera. *Raii hiſt.* 1367.

Codda-panna. *Rheed. mal.* 3. *p.* 1. *t.* 1—12.

Saribus. *Rumph. amb.* 1. 42. *t.* 8.

Fronds pinnate-palmate plaited, and having a thread between them; ſtipes ciliate-ſpiny.

2. Corypha minor.

Lin. ſyſt. 984. *Jacqu. hort. vind.* 3. *p.* 8. *t.* 8.

Fronds palmate fan-ſhaped plaited ſubbifid, having a few threads interpoſed; ſtipes unarmed.

DESCRIPTIONS, &c.

1. The cruſty covering of the ſeed cannot be accounted a ſhell, and therefore the pericarp is not a drupe; becauſe this cruſt forms the very papilla with which the embryo is covered[b].

This tree ſcarcely flowers before it is thirty or forty years old[c].

One ſpecies of this tree, which is the *Codda-panna* of the hortus malabaricus is very large; it has palmate-pinnatifid leaves, with a petiole (or ſtipe) of tender thorns; a ſecond, which is the *Saribus* of Rumphius, has the leaves plaited in a radiate form palmate-peltate, with the petiole as in the other; a third ſmaller, which is the *Sabal* of Adanſon, with palmate leaves, an unarmed petiole, and a fruit in the ſhape of a pea. Perhaps theſe may be different ſorts[d].

Rumphius is of opinion that his *Saribus* is a diſtinct ſpecies from the *Codda-panna* of the Hortus Malabaricus, and Loureiro deſcribes it as ſuch. The latter has alſo two other ſpecies; one which he calls *Corypha africana*, an inhabitant of the eaſtern coaſt of Africa; and the other, *Corypha pilearia*, which is figured in Rumphius, vol. 1. *t.* 9. and is *Rhapis Liguala.*

Native of Malabar and the iſland of Ceylon. The Marqueſas and Friendly iſlands.

Cultivated before 1742, by Robert James Lord Petre[e].

Knox deſcribes the great Fan Palm under the name of *Tallipot.* It is as big and tall as a ſhip's maſt, and very ſtraight. The leaves are of great uſe, one being ſo broad and large that it will cover fifteen or twenty men. Being dried, it is very ſtrong and limber; and though it be very broad when open, yet it will fold cloſe like a fan, and then is no bigger than a man's arm. The whole leaf ſpread is round, but is cut into triangular pieces for uſe: theſe they lay upon their heads as they travel, with the narrow end foremoſt, to make their way through thickets. Soldiers all carry them, not only to ſhade them from the ſun, and to keep them dry in caſe of rain on their march, but to make their tents for them to lie under. Theſe leaves all grow on the top of the tree. It bears no fruit until the laſt year of its life, and then yellow bloſſoms moſt lovely to behold, but ſmelling very ſtrongly, come out on the top, and ſpread abroad in great branches: theſe come to a fruit round and very hard, as big as our largeſt cherries; in ſuch abundance that one tree will yield ſeed enough for a country; but not good to eat. The flowers ſmell ſo ſtrong, that they cut down the trees where they are near houſes. The trunk within is a pith only, which they beat in a mortar to flour, and bake cakes of it, which taſte much like white bread[f].

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[n] Dav. van Royen, in Linn. ſyſt.

[o] Linn. ſuppl.

[p] Dav. van. Royen, in Linn. ſyſt.

[a] Linn. ſuppl.

[b] Gærtner.

[c] Linn. ex hort. malab.

[d] Juſſieu.

[e] Hort. kew.

[f] Hiſt. of Ceylon, p. 15.

The leaves alſo ſerve for covering their houſes, and for writing on with an iron ſtyle. Moſt of the books which are ſhown in Europe for the Egyptian papyrus, are made from the leaves of this Palm.

2. Leaves ſubradical, ſmooth, rigid, ſtriated; petiole without prickles, channelled or flat above, round underneath; the ſegments of the leaf are enſiform and acute. Spadix erect, round, ſmooth, from three to five feet high, axillary, clothed with membranaceous ſheathing ſpathes, whence iſſue along the whole of the ſpadix panicled racemes, angular, ſmooth and firm. Flowers ſeſſile, ſmall, without ſcent, all hermaphrodite, numerous. Perianth three-leaved, ſmall, permanent, whitiſh; leaflets roundiſh, concave, very blunt. Petals three, oblong, blunt, concave, deciduous, white, ſpreading. Filaments thick, white, the length of the corolla; three alternate with the petals, the other three lying on the petals ſo that the anthers only emerge from their tops: theſe are ſagittate and incumbent. Germ ſuperior, three-cornered-roundiſh, pale; ſtyle conical, three-furrowed, erect, white, a little ſhorter than the ſtamens; ſtigma blunt. Fruit the ſize of a pea, and of a ſweet taſte, ſmooth, black, not very ſucculent. Shell membranaceous, thin, brittle, browniſh, containing a flatted-roundiſh, bony, ſhining kernel.

It flowered firſt in Europe in the imperial garden at Schoenbrunn, in 1773 [g].]

Costmary. See *Tanacetum*.

COSTUS. (Κόστος, Gr. *a name borrowed from the Arabic.*)

Lin. gen. n. 3. *Reich.* 3. *Schreb.* 4. *Muſ. Cliff.* 14. § 2. 3. *Juſſ.* 63.

Claſſ. 1. 1. Monandria Monogynia.

Nat. order of *Scitamineæ*.—*Cannæ* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* three-toothed, very ſmall, ſuperior.

Cor. *Petals* three, lanceolate, ſomewhat erect, concave, equal. *Nectary* one-leafed, large, oblong, tubular-inflated; two-lipped: *Lower lip* broader, longer than the corolla: *Border* ſpreading, three-cleft; middle diviſion three-parted: *Upper lip* lanceolate, ſhorter, doing the office of a filament.

Stam. The office of a *Filament* is performed by the upper lip of the nectary, to which grows a two-parted *Anther*.

Pist. *Germ* inferior, roundiſh; *Style* filiform, length of the filament. *Stigma* headed, compreſſed, emarginate.

Per. *Capſule* roundiſh, crowned, three-celled, three-valved.

Seeds many, three-cornered.

Obs. *Linneus now calls the* Nectary *an interior ringent Corolla, whoſe upper lip is three-parted, and the middle emarginate.* R.

Juſſieu calls the corolla an interior calyx.

ESSENTIAL CHARACTER.

Cor. inner, inflated, ringent: the lower lip trifid.

SPECIES.

1. Coſtus arabicus. *Arabian Coſtus.*

Lin. ſpec. 2. *Reich.* 3. *upſ.* 2. *fl. zeyl.* 5. *mat. med.* 34. *Jacqu. collect.* 1. 143. *ic. rar.* 1. *t.* 1. *Blackw. t.* 394. *Bauh. pin.* 36. *Raii hiſt.* 1347.

Tsjana-kua. *Rheed. mal.* 11. 15. *t.* 8?

Leaves ſilky underneath.

[2. Coſtus glabratus.

Swartz prodr. 12. *Linn. hort. cliff.* 2. *Mer. ſurin. t.* 36.

Leaves ſmooth on both ſides, ſpike few-flowered, ſcales leafy at the tip, the upper ones faſtigiate.

3. Coſtus ſpicatus.

Swartz prodr. 12.

Alpinia ſpicata. *Lin. ſyſt.* 51. 2. *Jacqu. amer.* 1. *t.* 1.

Leaves ſmooth on both ſides, ſpike many-flowered, ſubovate, cloſely imbricate, ſcales ovate, ſimple.

4. Coſtus malaccenſis.

Retz. obſ. 3. 71. *n.* 18.

Leaves very finely tomentoſe underneath, raceme terminating, bunches ſix-flowered.

DESCRIPTIONS, *&c.*

1. Root perennial, irregular, two inches thick, knotty. Stems annual, ſimple, round, three or four feet high, near an inch in diameter at bottom, fleſhy, with a ſtrong bark, ſheathed all over. Leaves alternate, lanceolate, acuminate, quite entire, coriaceous, the largeſt a foot long, on a ſhort, thick, ſheathing petiole; green and ſmooth above, paler and very ſoft underneath. Spike very handſome, terminating, ſubſeſſile, ſolitary, erect, cloſe, as big as the hand cloſed. A pair of ſpathes to each ſeſſile flower; the outer ovate, acute, concave, coriaceous, broad, blood-red, the other oblong, only one third of the breadth, concave, purple at the tip, placed on the right ſide of the flower, which it embraces. Calyx in the flower green, with a purple tip, in the fruit entirely blood-red. Petal and nectary fleſh-coloured; ſometimes almoſt white. Anthers white. Seeds black, without ſmell, but having an unpleaſant taſte: there is a white fungoſe ſubſtance adhering to the baſe by which they are connected together [h].

Native of the Eaſt Indies. Cultivated 1752, by Mr. Miller [i].]

The roots were formerly imported from India, and were much uſed in medicine; but of late years they have not been regarded, the roots of Ginger being generally ſubſtituted for them.

[2. Spike or head of flowers imbricate, with ovate, blunt, concave ſcales, each one-flowered, permanent, green, not coloured [k].

Native of the Weſt Indies.

3. Root perennial, fleſhy, irregular, white. Stems ſomewhat jointed, almoſt upright, round, ſmooth, one or two feet in height. Leaves oblong, acuminate, attenuated at the baſe, ſhining, quite entire, alternate, on a very ſhort round petiole; the floral leaves below the ſpike commonly in fours. Spike conical, ſolitary. Spathes very cloſely imbricate, ſcarlet, thick, coriaceous, one-flowered. Flowers yellow without ſcent, quickly withering [l].

Native of the Caribbee iſlands, by the ſide of torrents.

In Martinico it is called *Canne de riviere*, and a decoction of the roots and ſtalks is often given in the Gonorrhœa, &c. as a cooling drink [m].

4. Stems ſeveral, approximating, upright, ſimple, a little compreſſed, ſmooth, clothed with the ſheaths of the leaves, half as high again as a man, ſomewhat incurved towards the top. Leaves alternate, ſubbifarious, the lower ones ſpreading, the upper ones almoſt upright, oblong, acuminate, roughened with briſtle-ſhaped toothlets on the edge; above ſmooth, even, with remotiſh nerves at an acute angle, bright green, a foot and half long, and more than a hand broad. Petioles faſtened to the ſheaths, ſemicylindric, channelled, ſmooth, ſhort. Sheaths opening on the ſide, ſmooth, ſtriated, longer than the ſpace between them, the mouth ovate-oblong, membranaceous, ciliate, acute. Raceme terminating, emerging from the ſheaths of the upper leaves, on one ſide, looſe, nodding. Common peduncle incurved, jointed towards the middle, ſheathed, round, ſomewhat hairy, red, more than a hand long, ſcarcely the thickneſs of the little finger. Partial peduncles involucred at the baſe, and ſomewhat compreſſed, becoming afterwards almoſt round, club-ſhaped at top, hairy, curved, much longer than the bunches of flowers. Theſe are crowded, ſeſſile, commonly ſix-flowered and involucred. Each flower has alſo its proper involucre. The involucre near the middle is faſtened to the common peduncle, and ſurrounds it at the baſe; it is inflated, oblong, acuminate, ending in a long twiſted apex, ſtriated, hairy, membranaceous, larger than the reſt, pale red. The ſecond, third and fourth are longer than the partial peduncles, but the reſt are ſmall; they are all inflated, membranaceous, and of one colour. The involucres of the bundles of flowers are perforated

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[g] Jacquin.

[h] Jacqu. collect.

[i] Hort. kew.

[k] Linn. cliff.

[l] Jacqu. amer.

[m] Ibid.

or bell-ſhaped, ſubtriquetrous, obſcurely toothed at the edge, membranaceous, ſmooth, ſhorter than the calyxes. All the flowers, eſpecially the laſt, are on very ſhort, club-ſhaped pedicels, ſomewhat compreſſed.

Native of thick woods near Tſing, in the neighbourhood of Malacca.

Characters of the fructification are given by Swartz, in his obſervations, from the three firſt ſpecies. Of the firſt by Jacquin in his Collectanea: of the ſecond by Linneus in his Hortus Cliffortianus: of the third by Jacquin in his Hiſtoria Stirpium Americanarum: and of the fourth by Retzius in his Obſervationes.]

PROPAGATION AND CULTURE.

Theſe are propagated by parting the roots; the beſt time for doing this is in the ſpring, before the roots put out new ſtalks. The roots muſt not be divided too ſmall, becauſe that will prevent their flowering. They ſhould be planted in pots, filled with light kitchen-garden earth, and plunged into the tan-bed in the ſtove, where they ſhould conſtantly remain, and may be treated in the ſame manner as the Ginger, which is fully treated of under the article AMOMUM.

[COTA. See *Anthemis.*]

COTINUS. See *Rhus.*

COTONEA MALUS. See *Cydonia.*

COTONEASTER. See *Meſpilus.*

[COTSCJOPIRI. See *Gardenia.*

COTTAM. See *Mentha.*

COTTON. See *Goſſypium.*

COTTON-GRASS. See *Eriophorum.*

COTTON, SILK. See *Bombax.*

COTTON THISTLE. See *Onopordum.*

COTTON-WEED. See *Athanaſia, Filago.*]

COTŬLA. (*From* κοτυλη, *a cavity or hollow.*)

Lin. gen. n. 968. *Reich.* 1050. *Schreb.* 1310. *Gærtn. t.* 165. *Juſſ.* 184. *Vaill. A. G.* 1719. *f.* 3. 21. 15. *Ananthocyclus Vaill. A. G.* 1719. *f.* 5. 24. *Dill. elth.* 23. *f.* 25. 26. *Lanciſia Pont. diſſ.*

Claſſ. 19. 2. Syngeneſia Polygamia Superflua.

Nat. order of *Compoſitæ Diſcoideæ, or Compound Radiated flowers.*—Corymbiferæ *Juſſ.*

GENERIC CHARACTER.

CAL. *Common* convex, divided into about ſixteen ovate parts, of which eight are exterior: of theſe the inferior ones are rather bigger than the interior ones.

COR. *Compound*, the length of the calyx, a little convex: *corollules* hermaphrodite, numerous in the diſk; *females* in the circumference more than twenty.

Proper of the hermaphrodites tubular, four-cleft, unequal: the outer *diviſion* larger. Of the *females* ſcarce any.

STAM. In the hermaphrodites *Filaments* four, very ſmall. *Anthers* tubular, the length of the corollule.

PIST. In the hermaphrodites *Germ* obovate; *Style* filiform. *Stigmas* two, obtuſe.

In the females, *Germ* obovate, compreſſed, two-edged, larger. *Style* filiform, length of the hermaphrodite. *Stigmas* two, ſimple.

PER. none. Calyx unchanged, permanent.

SEEDS of the hermaphrodites ſolitary, ſmaller, ovate-three-ſided, the interior angle obſcure. *Down* marginated; of the *females* ſolitary, larger, cordate, on one ſide flat, on the other gibbous, ſurrounded by an obtuſe border. *Down* bordered.

REC. almoſt naked, flat.

OBS. *In ſome the flowers are floſcular, in others radiated.* R.

C. Capenſis *has the calyx imbricated, and ſcarcely chaffy.*

ESSENTIAL CHARACTER.

Recept. almoſt naked. *Down* margined. *Corollules* of the diſk four-cleft; in the ray ſcarcely any.

SPECIES.

1. Cotula Anthemoides. *Dwarf Cotula.*
Lin. ſpec. 1256. *ſyſt.* 774. *Reich.* 3. 854. *Murr. prodr.* 230. *hort. cliff.* 417. 3. *Lour. cochinch.* 493.
Ananthocyclus. *Vaill. act.* 1719. *p.* 381. *Dill. elth.* 26. *t.* 23. *f.* 25.
Chryſanthemum. *Pluk. alm. t.* 274. *f.* 6.
[β. Artemiſia nilotica.
Lin. ſpec. 1188. *amæn.* 4. 289.
Leaves pinnate-multifid, dilated; flowers floſcular.

2. Cotula aurea. *Golden Cotula.*
Lin. ſpec. 1257. *ſyſt.* 774. *Reich.* 3. 855.
Leaves pinnate-ſetaceous, multifid; flowers floſcular, drooping.

3. Cotula ſtricta. *Silvery Cotula.*
Lin. ſyſt. 774. *Reich.* 3. 855. *mant.* 287.
Lidbeckia pectinata. *Berg. cap.* 306. *t.* 5. *f.* 9.
Lanciſia. *Gærtn. fruct.* 2. 422.
Leaves pinnatifid plane naked dotted; ſtem erect ſtrict; flowers radiate.]

4. Cotula coronopifolia. *Buck's-horn Cotula.*
Lin. ſpec. 1257. *Reich.* 3. 855. *hort. cliff.* 417. 2. *upſ.* 266. *Fl. dan. t.* 341. *Gærtn. fruct.* 2. 388.
Ananthocyclus. *Vaill. act.* 1719. *p.* 381. *Dill. elth.* 27. *t.* 23. *f.* 26.
Chryſanthemum. *Breyn. cent.* 156. *t.* 76.
Bellis. *Herm. lugdb.* 86. *Mor. hiſt.* 3. 30. *n.* 24. *ſ.* 6. *t.* 6. *f. ult.*
Leaves lanceolate-linear ſtem-claſping toothed; flowers floſcular.

[5. Cotula umbellata. *Umbelled Cotula.*
Lin. ſyſt. 774. *ſuppl.* 378.
Leaves lanceolate hirſute; flowers umbelled, ſtem erect.

6. Cotula quinqueloba.
Lin. ſyſt. 775. *ſuppl.* 377.
Leaves five-lobed ſubtomentoſe; ſtems erect.

7. Cotula viſcoſa. *Viſcid Cotula.*
Lin. ſpec. 1257. *Reich.* 3. 856. *hort. cliff.* 417. 4.
Lanciſia viſcoſa. *Gærtn. fruct.* 2. 422.
Leaves alternate lyrate-pinnate; flowers radiate.]

8. Cotula turbinata.
Lin. ſpec. 1258. *Reich.* 3. 856. *mant.* 473. *hort. cliff.* 417. 1. *upſ.* 266. *Vaill. act.* 1718. *p.* 380.
Lanciſia turbinata. *Gærtn. fruct.* 2. 422.
Chamæmelum æthiopicum lanuginoſum. *Breyn. cent.* 148. *t.* 73. *Mor. hiſt.* 3. 36. *ſ.* 6. *t.* 12. *f.* 14.
Receptacles underneath inflated turbinate; flowers radiate.

[9. Cotula tanacetifolia. *Tanſy-leaved Cotula.*
Lin. ſyſt. 775. *Reich.* 3. 856. *Berg. cap.* 242. *obſ.* 1.
Millefolium. *Pluk. mant. t.* 430. *f.* 7.
Leaves tripinnate, the ſmall ſegments acute; ſtem erect; flowers floſcular corymbed.

10. Cotula capenſis.
Lin. ſyſt. 775. *Reich.* 3. 857. *mant.* 287.
Lanciſia. *Gærtn. fruct.* 2. 422.
Matricaria capenſis. *Lin. mant.* 115.
M. Africana. *Berg. cap.* 296.
Chamæmelum. *Raii ſuppl.* 224. 17. *Pluk. mant.* 45.
Leaves pinnate, ſomewhat fleſhy and columnar, the loweſt ſubbipinnate; flowers radiate.

11. Cotula pilulifera.
Lin. ſyſt. 775. *ſuppl.* 378.
Leaves bipinnate; heads globular; ſtem erect.

12. Cotula ſericea. *Silky-leaved Cotula.*
Lin. ſyſt. 775. *ſuppl.* 377.
Leaves ſuperdecompound tomentoſe linear.

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13. Cotula pyrethraria.
Lin. mant. 116. *Reich.* 3. 857.
Leaves oppoſite ovate crenate petioled; peduncles one-flowered.

14. Cotula minuta.
Forſt. fl. auſtr. n. 301.
Leaves alternate, almoſt ſtem-claſping, oblong, toothed, flowers ſolitary, ſeſſile, oppoſite to the leaf.

15. Cotula bicolor.
Forſt. fl. auſtr. n. 540.

DESCRIPTIONS, *&c.*

1. Root annual. Stem about ſix inches high, at firſt erect, then procumbent, ſcarcely flexuoſe, tender, pubeſcent: branches alternate, more conſpicuouſly pubeſcent, incurved, turned up, ſpreading. Leaves pinnatifid-ſinuate; ſegments diſtant, ſparingly ſerrate or entire, blunt; they are ſmooth,

ſpreading, alternate, ſeſſile. Peduncles one-flowered, filiform, erect, villoſe. Flowers drooping, much compreſſed before they open, the ſize of a lentil. Florets yellow. Leaflets of the calyx ovate-oblong, obtuſe, concave, with a white membranaceous edge. Corollets in the ray none, but naked piſtils concealed beneath the calycine leaflets, with a bifid ſtigma. Seeds of the ray roundiſh compreſſed, flat on the inſide, a little keeled on the outſide: of the diſk rather oblong, almoſt triquetrous. Down none. Receptacle naked[a].

Native of Spain and the iſland of St. Helena. Cultivated 1732 by James Sherard, M.D.[b]

β. So nearly allied to *C. anthemoides*, that it is doubtful which genus it belongs to. Flowers nearly globular; leaflets of the calyx equal, with a membranaceous edge. Native of Egypt[c].

2. The flowers have no chaffs; the florets are four-cleft. Native of Spain and other ſouthern parts of Europe. Annual[d].

3. Stem herbaceous, five feet high, erect, ſomewhat angular, even, (as is the whole plant,) covered with a blueiſh dew. Leaves alternate, ſeſſile, lanceolate, with ſcattered hairs and crowded hollow dots, eſpecially underneath. Peduncles terminating, almoſt leafleſs, one-flowered. Calyx many-leaved, equal; leaflets lanceolate, acuminate, ciliate. Corollets of the diſk four-cleft[e]. This and ſome of the other ſpecies (viſcoſa, turbinata, capenſis) having radiate flowers, are ſeparated under the name of *Lancisia* by Pontedera and Adanſon[f]. Juſſieu reduces this to the *Lidbeckia* of Bergius; and the *turbinata* to the *Cenia* of Commerſon. Native of the Cape of Good Hope.—It flowers in may and june. Introduced 1774, by Mr. Francis Maſſon[g].]

4. This ſort is an annual plant, which ſends out trailing ſtalks about ſix inches long, with ſucculent leaves, in ſhape like thoſe of Buckſhorn Plantain. The flowers grow from the diviſions of the ſtalks upon ſhort weak foot-ſtalks, being deſtitute of rays; they are of a ſulphur colour, and appear in july. The flowers of this and the eighth ſort ſtand erect, when they firſt appear, but ſo ſoon as the florets are impregnated, and their colour changes, the foot-ſtalks become very flaccid toward the top, and the flowers hang downward; but when the ſeeds are ripe, the foot-ſtalks become ſtiff, and the heads ſtand erect for the winds to diſperſe the ſeeds.

[Receptacle conical, depreſſed, tubercled, naked, rayed with the pedicels of the female florets. Seeds of the ray larger, obovate, emarginate at the tip, on a filiform pedicel, flattiſh or grooved on one ſide, keeled with an obtuſe angle on the other, ſmooth, compreſſedly triquetrous, whitiſh, bald. Seeds of the diſk ſmaller, oblong-elliptic, flattiſh, with a whitiſh rim, but rufeſcent in the middle, ſeſſile, ſmooth, bald. No rim at the vertex of the ſeed[h].

This is a Cape plant; but has now eſtabliſhed itſelf in Europe. Cultivated in 1714[i].

5. Stems round, hirſute, a foot and half in height. Leaves alternate, much crowded, narrow-lanceolate, reſembling thoſe of *Protea argentea*, hirſute on both ſides, almoſt a finger's length. Umbel terminating, five-flowered. Peduncles one-flowered, hirſute, with ſome alternate almoſt leafy ſcales. Calyx ſubimbricate, villoſe; the inmoſt ſcales higher than the diſk, ſubulate, even on the inſide, and coloured. Corolla without any ray; diſk hemiſpheric. Seeds flatted, obovate, crowned; the edge obſcure, ſcarcely three-lobed. Receptacle naked.—Native of the Cape[k].

6. Stems ſimple, ſubpubeſcent. Leaves petioled, alternate, hoary underneath; lobes half-ovate, equal, mucronate. Peduncles one or two, long: (bracte lanceolate, ſmall) one-flowered, erect. Calyx with equal, pubeſcent ſcales.—It agrees very much in the flower with *C. ſtricta*; and they might make a ſeparate genus.—Native of the Cape[l].

7. This is a procumbent plant, or at leaſt declining, putting forth many ſuckers from the root. Stem a ſpan high. Leaves very like thoſe of common Groundſel (Senecio vulgaris), ſinuated, villoſe, viſcid. Flowers like thoſe of the firſt ſpecies, but on ſhorter peduncles, and with the calyx more rounded: the florets alſo much reſemble thoſe of C. anthemoides, but the females have a very ſlender linear corolla. Seeds naked, inſerted into the corolla on the inner ſide, near the tip. Receptacle conical, naked.

Found by Houſtoun at La Vera Cruz, and ſent to Linneus by Miller[m].]

8. This ſends out many branching ſtalks, which ſpread on the ground. Leaves very finely divided, covered with a cottony ſubſtance. Flowers ſolitary, on long peduncles, from the ſide of the branches; they have a narrow border of white rays, with a pale yellow diſk. [Receptacle fiſtulous, with minute equal calycine leaflets at the edge of it. Ray of the corolla very ſhort, ovate, white, red underneath[n]. Seeds difform, thoſe in the ray on pedicels[o]. Annual. Native of the Cape of Good Hope.

Cultivated 1713, in the botanic garden at Chelſea. It flowers in july and auguſt[p].

9. Stem ſcarcely ſuffruticoſe, but rather entirely herbaceous, more than a foot high, upright, ſlightly angular, firm, pubeſcent, pale green, very much branched on every ſide. Branches ſcattered, almoſt ſimple, nearly erect, clothed all over with leaves and rudiments of branches, axillary, ſlender, corymbiferous. Stem-leaves ſcattered, at the origin of the branches, pinnate-multifid; pinnas almoſt oppoſite, doubly pinnatifid, glaucous, ſubvilloſe, petioled. Branch-leaves alſo petioled, pinnate; pinnas almoſt oppoſite, linear, toothed, blunt; teeth ovate-acute. Petioles linear, channelled above, convex beneath, claſping, appendicled at the baſe with ſtipules or gaſhed leaflets. Corymb of flowers compound, faſtigiate, large, terminating, conſiſting of ſeveral corymbiferous branches. Peduncles long, grooved, pubeſcent, ſubumbelled, one-flowered, with linear, alternate ſcales[q]. Scarcely any female florets; thoſe of the diſk four-cleft. Annual[r]. Native of the Cape of Good Hope.

10. This has the appearance of Chamomile. Stems many, very much branched, diffuſed, a ſpan in height, round, ſomewhat gloſſy. Leaves naked, without dots; the rib ſcarcely flatted; with cylindric teeth purpliſh or browniſh at the end. Peduncles terminating, longiſh, one-flowered, ſtriated. Calyx imbricate, a little ſcarioſe. Corollets of the ray diſtant, ſubpedicelled, marked with lines, neutral, white—of the diſk four-cleft. Diſk convex, yellow. Receptacle half-ovate. Annual. Native of the Cape[s].

11. Stem erect, ſubfaſtigiate, with a panicle. Leaves bijugous, like thoſe of Tanſey. Heads without any ray; florets four-cleft. Native of the Cape[t].

12. Root perennial. Stems herbaceous, ſhort, tomentoſe, ſimple, procumbent, white. Leaves petioled, white, ſilky, like thoſe of Wormwood. Scapes terminating, ſolitary, very long, naked. Flowers ſolitary, like thoſe of the fourth ſpecies. Calyx hemiſpheric, with the ſcales nearly equal, obtuſe and ſcarioſe at the end. Corolla floſcular, ſhorter than the calyx, yellow. Native of the Cape[u].

13. Stem herbaceous, dichotomous. Leaves ſomewhat obtuſe, ſlender. Peduncles terminating from the forks of the ſtem, longer than the leaves. Flower exactly ovate, white, with four-cleft corollets. Chaffs the length of the florets[x].

14. Native of New Caledonia. Found ſeptember 13th, 1774.

15. Native of the iſle of Tanna in the South Seas.]

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[a] Murr. prodr.
[b] Dill. elth.
[c] Linn. ſpec.
[d] Linn.
[e] Linn. mant.
[f] Gærtner.
[g] Hort. kew.
[h] Gærtner.
[i] Hort. kew. from Philoſ. tranſ.
[k] Linn. ſuppl.
[l] Ibid.

[m] Linn. cliff.
[n] Linn. mant.
[o] Gærtner from Pontedera.
[p] Hort. kew.
[q] Bergius.
[r] Linn. ſyſt.
[s] Linn. mant.
[t] Linn. ſuppl.
[u] Ibid.
[x] Linn. mant.

PROPAGATION AND CULTURE.

1, 2. If the ſeeds be permitted to ſcatter, the plants will come up in the ſpring, and require no other care but to keep them clean from weeds, and thin the plants where they are too cloſe.

3. This, and the other Cape ſorts muſt be raiſed on a moderate hot-bed in the ſpring, and when the plants have obtained ſtrength, they may be tranſplanted into a warm border; where they will ripen their ſeeds very well. [They all flouriſh beſt, however, under the protection of the dry ſtove; and ſeveral of them may be increaſed not only from ſeeds, but freely from cuttings.

Cotula. See *Anacyclus*; *Anthemis*; *Chryſanthemum*, *Eclipta*.

Cotula Spilanthus. See *Spilanthus urens*.

——— Verbeſina. See *Lavenia*.

COTYLEDON. (*The ſame with* κοτυλὴ, *cavitas, a hollow.* Κοτυληδὼν *of Dioſcorides.*)

Lin. gen. 578. *Reich.* 628. *Schreb.* 788. *Dill. elth.* 95. *Tourn.* 19.

Claſſ. 10. 5. Decandria Pentagynia.

Nat. order of *Succulentæ—Sempervivæ* Juſſ. 307.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, five-cleft, acute, very ſmall.

Cor. *Petal* bell-ſhaped, five-cleft.

Nectary conſiſting of a concave ſcale, ſeated at the exterior baſe of each germ.

Stam. *Filaments* ten, ſubulate, ſtraight, the length of the corolla. *Anthers* erect, four-furrowed.

Pist. *Germs* five, oblong, thickiſh, ending in ſubulate *ſtyles*, which are longer than the ſtamens. *Stigmas* ſimple.

Per. *Capſules* five, oblong, bellied, acuminate, one-valved; gaping longitudinally inwards.

Seeds very many, ſmall.

Obs. *In* C. laciniata *one fifth part of the number in all the parts of fructification is excluded.*

ESSENTIAL CHARACTER.

Cal. five-cleft. *Cor.* one-petalled; with five nectareous ſcales at the baſe of the germ. *Capſ.* five.

SPECIES.

1. Cotyledon orbiculata. *Round-leaved Navel-wort.*
Lin. ſpec. 614. *Reich.* 2. 377. *hort. cliff.* 176. 2. *Herm. lugdb.* 349. *t.* 551. *Mor. hiſt.* 3. 474. *ſ.* 12. *t.* 7. *f.* 39. (Sedum.)
α. *Oval-leaved Navel-wort.*
Leaves ovate-ſpatulate, ſtem erect.
β. *Oblong-leaved Navel-wort.*
Leaves oblong-ſpatulate, ſtem erect.
γ. *Branching Navel-wort.* Mill. dict. n. 6.
Leaves ovate-ſpatulate, ſtem very much branched and divaricated.
δ. *Round leaved Navel-wort.* Mill. dict. n. 5.
Leaves orbiculate-ſpatulate, ſtem erect.
Ait. hort. kew. 2. 106.
Leaves ovate-ſpatulate, obtuſe with a point, even; flowers panicled.

2. Cotyledon ſpuria. *Narrow-leaved Navel-wort.*
Lin. ſpec. 614. *ſyſt.* 428. *Reich.* 2. 377. *mant. Comm. rar. t.* 23. *Burm. afr.* 43. *t.* 19. *f.* 1.
Sedum afric. teretifolium, fl. hemerocallidis. *Mor. f.* 40.
Leaves ſpatulate, obtuſe with a point, naked.

3. Cotyledon ſpinoſa.
Lin. ſpec. 615. *ſyſt.* 428. *Murr. comm. gott.* 1776. 33. *t.* 5.
Craſſula ſpinoſa. *Lin. ſyſt. ed.* 13. *mant.* 388. *Gmel. ſib.* 4. 173. *t.* 67. *f.* 2.
Leaves oblong, ſpiny-mucronate; ſtem ſpiked.

4. Cotyledon hemiſphærica. *Thick-leaved Navel-wort.*
Lin. ſpec. 614. *Reich.* 2. 377. *hort. cliff.* 176. 3. *Dill. elth.* 112. *t.* 95. *f.* 111.
Leaves ſuborbiculate dotted with ſcurf, convex underneath, flowers ſubſeſſile.

5. Cotyledon ſerrata. *Notch-leaved Navel-wort.*
Lin. ſpec. 614. *Reich.* 2. 378. *hort. cliff.* 497. *Dill. elth.* 113. *t.* 95. *f.* 112. *Lour. cochinch.* 287.
Leaves oval crenate, ſtem ſpiked.

6. Cotyledon Umbilicus. *Common Navel-wort, Kidney-wort,* or *Wall Pennywort.*
Lin. ſpec. 615. *Reich.* 2. 378.
[α. C. repens. *Lin. ſpec. Yellow Navel-wort.*
C. lutea. *Hudſ. angl.* 194. *With.* 464. *Dodart. mem.* 265. *t.* 73. *Raii hiſt.* 1878. 2. *Mor. hiſt.* 3. 471. *n.* 5. (*Sedum.*)
Leaves peltate-crenate, ſtem almoſt ſimple, flowers erect, bractes toothed.]
β. C. tuberoſa. *Lin. ſpec. Common Navel-wort.*
C. Umbilicus. *Hudſ. angl.* 194. *With.* 463. *Lightf.* 233. *Blackw. t.* 263. *Cluſ. hiſt.* 2. 63. 1.
C. major. *Bauh. pin.* 285. *Raii hiſt.* 1878.
C. vera radice tuberoſa. *Bauh. hiſt.* 3. 684. 1.
Sedum. *Mor. hiſt.* 3. 470. *ſ.* 12. *t.* 10. *f.* 4.
Umbilicus Veneris. *Ger.* 423. 1. *emac.* 528. 1.—vulgaris. *Park. theat.* 740. 1.
Leaves peltate-crenate, ſtem almoſt ſimple, flowers pendulous, bractes entire.

[7. Cotyledon hiſpanica. *Spaniſh Navel-wort.*
Lin. ſpec. 615. *Reich.* 2. 379. *Loefl. itin. t.* 1. *Shaw. afr.* 177.
β. *Shaw. afr. t.* 178.
Leaves oblong, almoſt columnar, flowers faſcicled.

8. Cotyledon papillaris.
Lin. ſyſt. 428. *ſuppl.* 242.
Leaves oppoſite columnar-ovate, flowers corymbed.

9. Cotyledon mamillaris.
Lin. ſyſt. 429. *ſuppl.* 242.
Leaves alternate columnar-ovate, flowers alternate, ſubſeſſile.

10. Cotyledon triflora.
Lin. ſyſt. 429. *ſuppl.* 242.
Leaves ovate entire, flowers ſubpeduncled, in threes.

11. Cotyledon Cacalioides.
Lin. ſyſt. 429. *ſuppl.* 242.
Leaves columnar, flowers corymbed, ſtem ſhrubby.

12. Cotyledon reticulata.
Lin. ſyſt. 429. *ſuppl.* 242.
Leaves columnar, flowers net-corymbed, ſtem ſhrubby.

13. Cotyledon paniculata.
Lin. ſyſt. 429. *ſuppl.* 242.
Leaves oblong-ovate ſeſſile, panicle divaricated, racemed, ſtem ſhrubby.]

14. Cotyledon laciniata. *Cut-leaved Navel-wort.*
Lin. ſpec. 615. *ſyſt.* 429. *Reich.* 2. 378. *hort. cliff.* 175. 1. *Boerh. lugdb.* 1. *t.* 288. *Lour. cochinch.* 286.
Telephium. *Pluk. alm.* 362. *t.* 228. *f.* 3. *Bont. jav.* 132.
Planta Anatis. *Rumph. amb.* 5. 275. *t.* 95.
Leaves pinnatifid; flowers four-cleft, in a panicle.

[15. Cotyledon nudicaulis.
Lin. ſyſt. 429.
C. integra. *Medic. in comm. palat.* 3. 200. *t.* 9.
C. deficiens. *Forſk. ægypt.* 89.
Leaves ſpatulate-ovate, flowers four-cleft, in a cyme.

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16. Cotyledon faſcicularis. *Cluſter-leaved Navel-wort.*
Ait. hort. kew. 2. 106. *Burm. afr.* 41. *t.* 18.
Leaves wedge-ſhaped faſcicled terminating, trunk thickened, branches fleſhy ſubconic.

17. Cotyledon viſcoſa.
Vahl ſymb. 2. 51.
C. Mucizonia. *Ortega monogr. cum. fig.*
Leaves columnar, racemes terminating, villoſe-viſcid, ſtem branched.

18. Cotyledon lanceolata.
Vahl ſymb. 2. 51. *Forſk. ægypt.* 89.
Leaves lanceolate, ſerrate at the tip, panicle villoſe, flowers quadrifid.

19. Cotyledon alternans.
Vahl ſymb. 2. 51.
C. orbiculata. *Forſk. arab.* 112.
Leaves orbiculate-ſpatulate, quite entire, flowers panicled, ſmooth, quadrifid.

DESCRIPTIONS, &c.

1. This and moſt of the other ſpecies are natives of the Cape of Good Hope.—The firſt ſort varies much in the form of the leaves, &c. Some of theſe varieties are made diſtinct ſpecies, and are thus deſcribed by Mr. Miller.]

γ. This has a ſhort thick ſucculent ſtalk, which rarely riſes more than a foot high, branching out on every ſide, ſo as to ſpread over the pots in which it is planted. The branches become woody by age, and are cloſely beſet by thick round leaves of a grayiſh colour, with purple borders, plane on their upper ſide, but convex on their under, and very fleſhy, of an herbaceous colour within, and full of moiſture.

δ. This alſo has a thick ſucculent ſtalk, which by age becomes woody, and riſes three or four feet high, ſending out crooked branches, which grow irregular, with thick fleſhy ſucculent leaves about two inches long, and near as wide towards the top; they are narrow at the baſe, and rounded at the top, of a ſea green colour, with a purple edge, which is frequently irregularly indented. Flowers on thick ſucculent peduncles, from the ends of the branches, near a foot long, naked, and ſupporting eight or ten flowers, hanging down, tube long, brims turning back. Stamens and ſtyles longer than the tube, and hanging down.

[Introduced 1690, by Mr. Bentick. They flower from july to ſeptember[a].]

2. This has a ſhort greeniſh ſucculent ſtalk, ſeldom more than a ſpan high, dividing into ſeveral irregular branches. Leaves thick, ſucculent, four inches long, half an inch broad, and as much in thickneſs, having a broad concave furrow on their upper ſide, and convex on the under, bright green, with a purple tip. Peduncles terminating, near a foot high. Flowers on ſhort pedicels, yellow; tubes long, brims reflex, tipped with purple. Stamens longer than the tube.

[Stem very thick, with obtuſe branches, leafy at the end only. Leaves naturally oppoſite, (in monſtrous plants alternate) ſpatulate-lanceolate, fleſhy, obtuſe, petioled. Scape terminating, a foot high, ſubumbelled and divaricated[b].

Cultivated 1731, by Mr. Miller[c].

3. This is a perennial plant, a long ſpan in height. Stem, for one third part at bottom, where it is covered with leaves, perpendicular; the other two thirds, which are clothed with flowers, bent in form of an S, thick, angular, ſtiff. Leaves very much crowded, imbricate all round, ſucculent, compreſſed, flattiſh above, angular on the back, ending in a prominent bump, having a flexile white ſpine at the tip; the loweſt thinner, longer, broader and abrupt, with a cartilaginous border at the end, and ſpreading; the upper ones narrower, and more erect. Spike terminating, compound at the baſe: the loweſt ſpikelets elongated, many-flowered, ſpreading, peduncled, but the flowers ſeſſile; the ſpikelets above theſe are very ſhort, and have few flowers or four heaped together; above theſe the flowers are ſolitary and ſeſſile to the top of the ſtalk. Under each ſpikelet and flower is a ſucculent, ſubulate, incurved bracte, ending in a ſpine. Perianth five-parted, the parts connected at the baſe, nearly equal, lanceolate, concave, acute, converging. Corolla four times as long as the perianth, conſiſting of five white, linear, converging concave petals, connected at the baſe. Nectary ſurrounding the germ, compoſed of five roundiſh, concave, emarginate, yellow ſcales. Filaments almoſt equal, longer than the corolla: anthers cordate. Piſtils a little ſhorter than the ſtamens: germs ſuperior, ending in divaricate ſtyles[d].]

Native of Siberia, whence it was brought to the imperial garden at Peterſburgh. Mr. Miller received it from Dr. Anmann. It flowers in april, and ſometimes bears ſeed in England.

4. This has a thick ſucculent ſtalk, rarely more than a ſpan high, dividing into many branches. Leaves ſhort, thick, ſucculent, not more than half an inch long, and a quarter of an inch broad, grayiſh with green ſpots, ſeſſile. Peduncles terminating, ſix inches long, naked, ſupporting five or ſix flowers, alternate, ſeſſile, greeniſh, with purple tips.

[Cultivated 1732, by James Sherard, M.D.[e].]

5. Stalk upright, ſucculent. Leaves oblong, thick, ſucculent, alternate. Flowers purpliſh, in a looſe ſpike, two or three joined on the ſame peduncle, which is very ſhort. It is a biennial plant, and the ſeeds ripen in autumn.

Native of Candia and Siberia.

[Cultivated 1732, by Dr. Sherard[f].

6. Mr. Hudſon has diſtinguiſhed the yellow from the common Navel-wort, by the circumſtances of the flowers being upright, and the bractes toothed in the firſt, whereas in the ſecond, the flowers hang down, and the bractes are entire. Moriſon remarks alſo, that the root of the yellow Navel-wort is not round like a turnep, but oblong and creeping; the leaves larger and growing more cloſe, not ſo perfectly peltate, but more open about the inſertion of the petiole.—Mr. Woodward obſerves that the flowers are not always pendant in the ſmaller ſpecimens of common Navel-wort.

α. Yellow Navel-wort is found in Somerſetſhire, and in the weſt riding of Yorkſhire[g].

β. Root tuberous, roundiſh. The whole plant is ſucculent, and has a ſhining, froſted appearance. Stem nearly upright, ſlightly angular, from ſix to nine inches high, frequently purple. Leaves thick, fleſhy, circular, concave on the upper ſurface, with a hollow dimple nearly in the centre, juſt oppoſite to the inſertion of the petiole, which is round.] From this appearance this plant has the name of Navel-wort. The lower leaves in ſome plants are kidney-ſhaped. The ſtem-leaves reſemble the root-leaves, but are not ſo exactly circular, and the petiole not fixed ſo near the centre. Flowers in long terminating bunches, of a white greeniſh hue. The ſpike is ſometimes ſimple, ſometimes branched towards the bottom. At the baſe of each peduncle is a lanceolate bracte. Segments of the calyx lanceolate-ovate, extending more than half way down. Corolla tubular, five-cornered, the ſides flat; ſhrivelling, permanent: the ſegments acute, ſtriated. Nectary and anthers yellow. Filaments alternately longer and ſhorter[h].

Native of Judæa, Spain, Portugal, Italy, Britain: on moiſt rocks and walls. With us in an old gravel pit at Highberry-barn, near London. At Peterborough, Northampton—and Thorpe, between Peterborough and Wandesford. Slate-pit rocks at Smithland in Leiceſterſhire.—Church Brampton in Northamptonſhire. About Troutbeck in Weſtmoreland. In Cornwall and other parts of the weſt. Godſtow bridge in Oxfordſhire. About Malvern in Worceſterſhire. Skipton-Mallet in Somerſetſhire. Caernarvonſhire and Merionethſhire in Wales. In ſome of the Scotch iſlands—as Arran, Y-columbkil, &c.—It flowers from june to auguſt.

7. Root fibroſe. Stem ſimple, columnar, almoſt erect, a finger's length in height. Leaves bluntiſh, ſeſſile, ſomewhat hairy, flattiſh above, dotted with duſky red. Flowers in a terminating corymb. Corollas funnel-ſhaped, duſky red on the outſide, ſomewhat hairy: border plane, acute, red above, with three purple ſtreaks, and a purple tip. Filaments thickiſh and a little prominent: anthers very ſmall. Calyx ſhort.—The appearance of the herb is that of Sedum album.—Native of Africa, the Levant, and Spain.—Biennial[i].

8—13. Found at the Cape of Good Hope by Thunberg.—The 11th has its trivial name, from its yellow flowers reſembling thoſe of Cacalia. As the 12th alſo has from its reſemblance to Statice reticulata[k].

14. Stem leafy to the very top. Leaves dilated at the baſe, the ſegments three or five, unequally ſerrate, except the floral ones, which are linear and entire. The infloreſcence panicled. Calyx very

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[a] Hort. kew.

[b] Linn. mant.

[c] Hort. kew.

[d] Murray.

[e] Dill. elth.

[f] Ibid.

[g] Hudſon.

[h] Linn. With, Stokes, Hudſ. Woodw. Mſs.

[i] Linn. ſpec.

[k] Linn. ſuppl.

ſmooth and glaucous, as is alſo the corolla; the border of which is yellow on both ſides, uſually four-cleft, but in ſome few flowers five-cleft. Stamens eight ſhort, two long[l].]

According to Miller, the ſtem is upright, about a foot high, jointed and ſucculent. Leaves broad, deeply cut on their edges, of a grayiſh colour, oppoſite, almoſt embracing. Peduncles terminating, about ſix inches long, ſuſtaining ſeven or eight ſmall flowers of a deep yellow colour. Stamens not longer than the ſhort tube.

[Native of Egypt and the Eaſt Indies. It flowers in july and auguſt, and was cultivated by Mr. Miller in 1731[m].

15. Stem at the end almoſt naked. Leaves obſcurely ſerrate, linear at the baſe. Infloreſcence cymed; the peduncles dichotomous. Calyx and corolla pubeſcent on the outſide; the border of the latter ſcarlet on the upper ſurface, paler on the lower. Stamens eight, as in the foregoing, from which it is diſtinct[n].

16. This has been confounded with the ſecond ſort, and ſhould be placed next to it. It flowers from july to ſeptember; and was cultivated in 1759, by Mr. Miller[o].]

17. This has the appearance of a Sedum. Root annual. Stem filiform, brachiate, a palm in height. Leaves fleſhy, obtuſe. Peduncles at the ends of the branches, commonly ſimple, ſeldom branched. Flowers racemed, diſtant. Pedicels capillary, looſe. Leaflets of the calyx lanceolate, villoſe-viſcid. Corolla bell-ſhaped, pale yellow, with purple ſtreaks. Native of the mountains of Spain near Toledo, and elſewhere.

18. This reſembles Cotyledon laciniata in habit, infloreſcence, and ovate yellow corollas; but differs in having lanceolate leaves; and the ſtem, peduncles, calyx and corolla villoſe.

19. The whole of this plant is ſmooth. Partial peduncles alternate. Corolla ovate, like that of C. laciniata, membranaceous, narrowed at top; the ſegments lanceolate, reddiſh-yellow[p].]

PROPAGATION AND CULTURE.

1, 2, 4, 8—13, 16. The African kinds are all propagated by planting cuttings in any of the ſummer months, which ſhould be laid in a dry place for a fortnight or three weeks after they are taken from the plant, before they are planted; for theſe abound with juice through every part of the plant, which will certainly rot the cuttings, if they are not ſuffered to lie out of the ground, that the wounded part may heal over, and the great redundancy of ſap evaporate. The ſoil in which theſe plants thrive beſt, is one third freſh light earth from a paſture, one third ſand, and the other third part lime-rubbiſh and rotten tan, in equal quantities; theſe ſhould be well mixed, and laid in a heap ſix or eight months before it is uſed, turning it over five or ſix times, that the parts may the better incorporate; and before it is uſed, it will be proper to paſs it through a ſcreen, to ſeparate the large ſtones, clods, &c. therefrom.

Having prepared the earth, and your cuttings being in a fit order for planting, you muſt fill as many halfpenny pots with earth as you have cuttings to plant; then put one cutting in the middle of each pot about two or three inches deep or more, according to their ſtrength; then give them a little water to ſettle the earth cloſe about them, and ſet the pots in a warm ſhady place for about a week, to prepare the cuttings for putting forth roots; after which they ſhould be plunged into a moderate hot-bed of tanners bark, which will greatly facilitate their rooting; but obſerve to give them air, by raiſing the glaſſes at all times when the weather will permit, as alſo to ſhade the glaſſes in the heat of the day.

In about ſix weeks or two months time after planting, theſe cuttings will be rooted, when you muſt begin to expoſe them to the open air by degrees, firſt drawing the pots out of the tan, and ſetting them on the top, then raiſe the glaſſes very high in the day-time; and in about a week after remove the pots into a green-houſe, and there harden them for another week; after which they may be expoſed to the open air in a well defended place, obſerving not to ſet them in a place too much expoſed to the ſun, until they have been inured to the open air for ſome time.

In this place the plants may remain until the beginning of october, at which time you ſhould remove them into the conſervatory, placing them as near the windows as poſſible at firſt, letting them have as much free open air as the ſeaſon will permit, by keeping the windows open whenever the weather is good; and now you muſt begin to abate your waterings, giving it to them ſparingly; but you ſhould not ſuffer their leaves to ſhrink for want of moiſture, which is another extreme ſome people run into for want of a little obſervation; for when they are ſuffered to ſhrink for want of ſufficient moiſture to keep their veſſels diſtended, they are rendered incapable of diſcharging this moiſture whenever they receive it again. The 14th ſort ſhould be placed in a moderate ſtove in winter, nor muſt it be ſet abroad till midſummer, for it is much tenderer than any of the others.

The beſt method to treat moſt of theſe plants is, to place them in an open, airy, dry glaſs-caſe, among Ficoideſes and African Houſeleeks, where they may enjoy as much of the ſun-ſhine as poſſible, and have a free, dry, open air; for if theſe are placed in a common green-houſe among ſhrubby plants, which perſpire freely, theſe ſucculent plants imbibe too much of the damp air, and thereby becoming too replete with moiſture, often caſt their leaves, and ſometimes their branches decay, and the whole plant periſhes.

3. This ſort requires a very ſhady ſituation, for if it be expoſed to the ſun in ſummer, the plants will ſoon decay. It is propagated by off-ſets like the Houſeleek; and requires a pretty ſtrong ſoil.

5, 6, 7. If theſe ſorts be ſown upon a wall, they will thrive better than in the ground, and be leſs liable to ſuffer by froſt; ſo that where the ſeeds ſcatter themſelves on walls or rock-work, the plants thrive better than when they are cultivated.

14, 15. Theſe ſorts require a warm ſtove to preſerve them through the winter in England, nor ſhould they be expoſed abroad in ſummer; for if they receive much wet, the ſtalks are very ſubject to rot; ſo that they ſhould conſtantly remain either in the ſtove, or in ſummer ſhould be placed in an airy glaſs-caſe with other tender ſucculent plants, where they may have free air in warm weather, and be ſcreened from cold and wet; but in autumn they muſt be removed into the ſtove, where they ſhould be kept in a moderate temperature of warmth: theſe are propagated by cuttings, which ſhould be taken off in ſummer, and planted into ſmall pots, and plunged into a moderate hot-bed, and when they have taken root, they ſhould be removed into the ſtove. They muſt have but little water, eſpecially in winter.

[Cotyledon. See *Craſſula, Saxifraga, Sedum, Sempervivum.*
Cotyledon aquatica. See *Hydrocotyle.*
Cotyledonoides. See *Craſſula.* Cavalam. See *Cratæva*.
Coventry-bells. See *Campanula.*
Coumarouna. See *Dipteryx.*]
Courbaril. See *Hymenæa.*
[Coutoubea. See *Picrium.*
Cow-itch. See *Dolichos.*
Cow-Parsley. See *Chærophyllum.*
Cow-quakes. See *Briza.*]
Cowslip. See *Primula.*
[——— Virginian. See *Dodecatheon.*
Cow-weed. See *Chærophyllum.*]
Crab-tree. See *Malus.*
[Cracca. See *Ervum, Vicia.*
Crake-berry. See *Empetrum.*]

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[l] Murr. in ſyſt. [m] Hort. kew. [n] Murr. in ſyſt. [o] Hort. kew. [p] Vahl.

CRAMBE. (*From* κραμβος, *ſiccus; on account of its growing in dry places? Rather from* κοραμβλη, *on account of its ſuppoſed quality of dimming the eye-ſight.*) *Lin. gen.* 825. *Reich.* 889. *Schreb.* 1071. *Juſſ.* 242. *Tourn.* 100. *Rapiſtrum Tourn.* 99.

Claſſ. 15. 2. Tetradynamia Siliquoſa.

Nat. order of *Siliquoſæ, Cruciformes* or *Cruciferæ.*

GENERIC CHARACTER.

CAL. *Perianth* four leaved; *leaflets* ovate, channelled, ſomewhat ſpreading, deciduous.

COR. four-petalled, cruciform. *Petals* large, obtuſe, broad, ſpreading; *claws* erect-ſpreading, length of the calyx.

STAM. *Filaments* ſix, two the length of the calyx; four longer, with a two-cleft tip. *Anthers* ſimple, on the exterior branch of the filaments.

A *melliferous gland* between the corolla and the longer ſtamens on each ſide.

PIST. *Germ* oblong. *Style* none. *Stigma* thickiſh.

PER. *Berry* dry, globoſe, one-celled, deciduous.

SEED ſingle, roundiſh.

ESSENTIAL CHARACTER.

Filaments the four longer, two-cleft at the end, one only of the tips bearing an anther. *Berry* dry, globoſe, deciduous.

SPECIES.

1. Crambe maritima. *Sea Colewort.*
   Lin. ſpec. 937. *Reich.* 3. 290. *fl. ſuec. n.* 615. *hort. cliff.* 340. *Hudſ. angl.* 299. *With.* 718. *Lightf.* 364. *Fl. dan. t.* 316.
   Braſſica maritima monoſpermos. *Bauh. pin.* 112. *Park. theat.* 270. 4. *Lob. ic.* 1. 245. *Raii hiſt.* 838. *Pet. brit. t.* 48. *f.* 12.—marina anglica. *Ger.* 248. 16. *emac.* 315. 15.—marina repens monoſpermos. *Mor.* 5. *ſ.* 3. *t.* 2. *f.* 16.
   β. Crambe ſuecica. *Mill. dict. n.* 2.
   Leaves and ſtem ſmooth.
2. Crambe orientalis.
   Lin. ſpec. 937. *Reich.* 3. 290. *Pall. itin.* 3. 584.
   Leaves ſcabrous, ſtem ſmooth.
3. Crambe hiſpanica. *Spaniſh Colewort.*
   Lin. ſpec. 937. *Reich.* 3. 290. *hort. upſ.* 193. *cliff.* 340.
   Myagrum ſphærocarpon. *Jacqu. obſ.* 2. 20. *t.* 41.
   Rapiſtrum. *Corn. canad. t.* 148. *Mor. hiſt.* 2. 266. *ſ.* 3. *t.* 13. *f.* 1.
   Leaves and ſtem ſcabrous.

[4. Crambe Tataria.
   Lin. ſyſt. 604. *Jacqu. miſc.* 2. 274. *t.* 25.
   Tataria ungarica. *Cluſ. hiſt.* 191. *Bauh. hiſt.* 3. 2. 163. *Bauh. pin.* 153.
   Leaves decompound-multifid.

5. Crambe fruticoſa. *Shrubby Colewort.*
   Lin. ſyſt. 604. *ſuppl.* 299.
   Shrubby; leaves ovate pinnatifid ſerrate hoary; racemes in a diſhevelled dichotomous panicle.
6. Crambe ſtrigoſa. *Rough-leaved ſhrubby Colewort.*
   L'Herit. ſtirp. nov. 6. 151. *t.* 72. *Ait. hort. kew.* 2. 408.
   Myagrum arboreſcens. *Jacqu. ic. collect.* 1. 39.
   Fruteſcent; leaves at the baſe unequal two-eared, ſtrigoſe.]

DESCRIPTIONS, &c.

1. The roots creep under ground, whereby it propagates very faſt. [The whole plant is ſmooth. The lower leaves are petioled, very large and ſpreading on the ground, variouſly waved, jagged and indented; ſmooth, glaucous, ſometimes tinged with purple: many ſtalks ariſe among theſe, two feet high, ſpreading and much branched, bearing ſimilar, but ſeſſile leaves. The flowers on long peduncles, white. Fruit at firſt ovate, terminated by the blunt ſtigma, afterwards nearly ſpherical: the ſize of large Peas[a].

On the ſandy and beachy coaſts of Sweden, Denmark, Britain: as at Rooſebeck in Low Furneſs, Lancaſhire; near Megaviſſey, in Cornwall; between Whitſtable and the iſle of Thanet; near Colcheſter; about Lyde in Kent, and elſewhere on the Eſſex and Kentiſh ſhores; thoſe of Suſſex and Dorſetſhire in great plenty, and elſewhere: flowering in may and june.

The young leaves, covered up with ſand, and blanched, are boiled and eaten as a great delicacy[b]. When full grown, they are ſaid to occaſion giddineſs. All ſorts of cattle eat them.

There is one variety with jagged leaves; and another with yellowiſh bloſſoms[c].]

β. The ſeeds of this were ſent me from Peterſburgh for the common ſort, from which it differs greatly. This has a perennial root, which ſends out ſeveral oblong, ſmooth, pointed leaves, irregularly cut on their ſides into acute ſegments almoſt to the midrib; theſe are very ſmooth, and of a ſea-green colour: between theſe ariſes the ſtalk, which grows three feet high, garniſhed below by oblong pointed leaves, which are acutely indented on their edges. The ſtalks branch out into many ſmaller, and theſe ſubdivide again into leſs, which have looſe ſpikes of white flowers like thoſe of the common ſort, which are ſucceeded by ſeeds of the ſame form. This differs greatly from the firſt in the ſhape of its leaves, which are longer, ending in points, and the ſegments do the ſame; whereas thoſe of the other are blunt, and not half ſo deeply cut. The ſtalks riſe more than twice the height of the firſt, branch out more, and the branches grow more erect; and theſe differences are conſtant, where the plants of both ſorts grow in the ſame ſoil.

2. This has a biennial root, from which ariſe many leaves in the ſpring, that are alternately divided to the midrib; and theſe diviſions are again alternately cut on their edges into many points, ſo that they have the appearance of pinnate leaves, and are of a grayiſh colour. Stems two feet high, branching, terminated by looſe panicles of ſmall white flowers, coming out in june. The ſeeds ripen in autumn. Native of the Levant.

3. [Root whitiſh, annual, fuſiform. Stems very branching, angular, near three feet high, rugged, with ſtiff pungent reflex hairs, and terminating in wand-like racemes, the firſt quite ſimple and very long, the following ones branched. Leaves roundiſh, veined, wrinkled, ſomewhat rugged, unequally tooth-repand, on angular petioles, having a ſingle appendix on each ſide at top; one of theſe is frequently deficient, but ſeldom both. Flowers in corymbs; calyxes yellowiſh; petals white. Fruits brown, ſhining, placed on a cylindric barren body, in which there is no trace of a cell, and this on a peduncle an inch in length[d].] It flowers in june, and the ſeeds ripen in autumn. Native of Spain and Italy.

[Cultivated 1759, by Mr. Miller[e].

4. Root perennial, fuſiform, as thick as the human arm, from two to four feet long, round, brown or blackiſh on the outſide when freſh, within fleſhy, white, with a tinge of dirty yellow, of a ſweet taſte. Stem from two to three feet high, angular, upright, ſmooth, branched. The root-leaves that firſt come out are often ſmall and entire; but afterwards theſe with the leaves on the ſtem and branches are diverſely and irregularly multifid, ſometimes very large, decompoundly or ſuperdecompoundly pinnatifid, dividing finally into oblong toothed ſharp ſegments, ſomewhat glaucous, ſmooth on both ſides, the upper ones are ſimple and oblong. Petioles angular, in the larger leaves ſmooth; but in the ſmaller ones, both theſe and the ribs are very thick and protuberant; they and the veins being ſomewhat hiſpid, with whitiſh hairs. The leaves, however, vary extremely in form and hairineſs, not only in different plants, but in the ſame individual. Flowers very numerous in terminating branched corymbs, ſmelling ſtrong of honey. Calyx greeniſh yellow. Petals white. Anthers greeniſh. Germ green, with a yellow ſtigma. Fruit the ſize of a pea, with a green ſhining fleſhy ſkin, becoming wrinkled and pale as it ripens. Seed blackiſh on the outſide: kernel pale yellow, with a ſubacrid and rather unpleaſant taſte.

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[a] Woodw. Mſſ. & Lightf.

[b] Lightf.

[c] Withering.

[d] Jacquin.

[e] Hort. kew.

It flowers about the middle of april, and the fruits ripen in june, but few of them come to maturity.

Native of Hungary, Tartary, Moravia, and Bohemia. Firſt noticed and deſcribed by Cluſius, who received it from Balthaſar de Bathyan, for the botanic garden at Vienna. Profeſſor Jacquin procured it again from Hungary in 1777.

The roots are eaten in a ſcarcity of bread by the Tartars and Hungarians; the hares alſo are very fond of them[f].

According to Jacquin, this is the Crambe orientalis of Linneus, and the fifth ſpecies of Royen; but probably not Rapiſtrum orientale acanthi folio of Tournefort, which is the true Crambe orientalis; and is deſcribed in obſ. bot. in the ſecond volume of Jacquin's miſcellanea, p. 337.

5. A ſtiff ſhrub, with leafy branches. Leaves alternate, petioled, deeply toothed, pinnatifid, or pinnate, with the diviſions ſerrate: hoary. The branchlets terminate in a large, diffuſed panicle, with alternate, divaricate, racemed branchlets; the racemes ſhort[g].

It approaches nearer to the character of Myagrum than of Crambe; for the filaments are not forked, and the ſilicles are almoſt two-jointed. The two genera might be very well united, and this removed to the order Siliculoſa[h].

Found by Maſſon, in the higheſt rocks of the iſland of Madeira[i].

Introduced 1777. It flowers moſt part of the year[k].

6. This is a rugged ſhrub. Stem erect, round, looſely branched, aſh-coloured, the height of a man. Leaves alternate, oblong-ovate, either undivided or eared, obliquely ſubcordate, acuminate, unequally toothed, wrinkled, nerved, bright green on both ſides, ſpreading, reclined: petioles round on one ſide, channelled on the other, ſtrigoſe. Panicles terminating, very long, compoſed of alternate compound racemes, peduncled, divaricate. Flowers pedicelled, erect, white. The leaves are four times as big as thoſe of C. fruticoſa, not hoary; and the ſtrigæ are ſtronger, but more lax[l].

Found in the Canary iſlands by Maſſon. Introduced 1779. It flowers in may and june[m].]

PROPAGATION AND CULTURE.

1. As this generally grows upon the gravelly ſhore, where the tide overflows it, the inhabitants obſerve where the gravel is thruſt up by the ſhoots of this plant, open it, and cut the ſhoots before they come out, and are expoſed to the open air, whereby the ſhoots appear as if they were blanched; and when they are cut ſo young, they are very tender and ſweet; but if they are ſuffered to grow till they are green, they become tough and bitter. This plant may be propagated in a garden, by ſowing the ſeed ſoon after it is ripe, in a ſandy or gravelly ſoil, where it will thrive exceedingly, and increaſe greatly by its creeping roots, which will ſoon overſpread a large ſpot of ground, if encouraged; but the heads will not be fit to cut until the plants have had one year's growth: and in order to have it good, the bed in which the plants grow ſhould, at michaelmas, be covered over with ſand or gravel about four or five inches thick, which will allow a proper depth for the ſhoots to be cut before they appear above ground; and if this is repeated every autumn, in the ſame manner as is practiſed in earthing of Aſparagus-beds, the plants will require no other culture. This may be cut for uſe in april and may, while it is young; but if the ſhoots are ſuffered to remain, they will produce fine regular heads of white flowers, which appear very handſome, and will perfect their ſeeds, by which they may be propagated.

[We are obliged to the Rev. Mr. Laurents for a more particular account of the culture of Sea Colewort or Sea Cale, which he obtained from the Weſt of England.

Prepare the bed intended to receive the ſeeds as for Aſparagus. Sow them in march. Before they are put into the ground, bruiſe the outer coat without wounding the ſeeds, to accelerate their growth. Set three ſeeds in a triangular form ſix inches apart, leaving a ſpace of two feet between the triangles. Bury the ſeeds three inches deep.

The plants will make their appearance in four or five months, but they ſhould not be cut until the third ſpring. About the end of november, when the leaves are rotten, clear them away, and cover the bed with a coat of half rotten dung.

In the ſecond year, about march, when the plants are beginning to perforate the ſurface, take or rake off lightly the coat of dung, and give the plants full liberty to grow. In november, or ſooner if the leaves be rotten, clear them off, and cover as in the former year.

In the third year, immediately after removing the dung in the ſpring, cover the plants with a thick coat of ſand or coal aſhes, or ſmall pebbles. As they grow, continue to keep them from the air, until they are cut for uſe.

In cutting them, remove the ſand, aſhes or pebbles, and then cover the roots again. Some of the plants will bear cutting two or three times in a ſeaſon.

After the laſt cutting is finiſhed, remove the cover, and let the plants grow until the leaves are decayed; and then clear and cover for the winter.

Some cover their plants with earthen pans or large garden pots, putting a tileſherd over the hole, for all air muſt be ſecluded in order to have them white[n].

2. May be propagated in the ſame manner.

3. Muſt be propagated by the ſeeds.

[5, 6. Are inhabitants of the green-houſe. The others are hardy. The two laſt grow freely from cuttings.

Crambe. See *Bunias* & *Myagrum*.

Cranberry. See *Vaccinium*.]

Crane's-bill. See *Erodium, Geranium, Pelargonium*.

[CRANICHIS. (*From* Κρανος, *a helmet.*)

Lin. gen. Schreb. n. 1374. *Swartz prodr.* 120.

Claſſ. 20. 1. Gynandria Diandria.

Nat. order of *Orchideæ*.

GENERIC CHARACTER.

Cal. *Spathes* wandering. *Perianth* none.

Cor. *Petals* five, oblong, ſubhorizontal: the three outer (or two upper lateral, and one anterior) ovate-lanceolate, equal, ſpreading; the two inner anterior ſcarcely ſmaller, more ſlender, ovate-lanceolate, erect.

Nectary or upper petal (between the outer ſuperior petals) galeate or vaulted, erect, ovate, gibbous, ſlightly keeled, entire at the tip, often bifid at the baſe, dotted within, covering and embracing the genitals behind.

Stam. *Anthers* two or four, pedicelled, placed on the apex of the ſtyle, turned towards the helmet; with an upright two-celled lid, faſtened to the column of the ſtyle in front; they are covered at the back.

Pist. *Germ* obovate, oblique, inferior. *Style* an erect column, ſhorter than the helmet, dilated at the tip, obtuſe, bearing the ſtamens at the back. *Stigma* funnel-form between the column of the ſtyle and the lid of the ſtamens.

Per. *Capſule* oblong or obovate, attenuated at the baſe, three-cornered, three-keeled, one-celled, opening under the ribs, cohering at the tip and baſe.

Seeds numerous, very ſmall, like ſand or ſaw-duſt, affixed to a columnar receptacle.

ESSENTIAL CHARACTER.

Nectary galeated.

SPECIES.

1. Cranichis aphylla.

Swartz prodr. 120.

Bulbs in bundles, columnar acute, ſcape almoſt naked, petals converging.

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[f] Jacquin miſcell.

[g] Linn. ſuppl.

[h] Murr. in ſyſt.

[i] Suppl.

[k] Hort. kew.

[l] L'Heritier.

[m] Hort. kew.

[n] Young's Annals, vol. 3, p. 295.

2. Cranichis oligantha.
Swartz prodr. 120.
Bulbs in bundles, club-ſhaped, leaves petioled oblong acuminate ſhining, ſcape almoſt naked, ſpike filiform, petals converging.

3. Cranichis diphylla.
Swartz prodr. 120.
Bulbs in bundles, filiform naked, leaves petioled cordate acuminate twin, ſcape almoſt naked.

4. Cranichis ſtachyodes.
Swartz prodr. 120.
Bulbs in bundles, columnar obtuſe, leaves petioled ovate acuminate, ſcape ſheathed, ſpike columnar, petals revolute.

5. Cranichis muſcoſa.
Swartz prodr. 120.
Bulbs filiform in bundles, tomentoſe, root-leaves petioled ovate, ſtem-leaves ſheathed, nectary dotted within.

All theſe are natives of Jamaica.]

CRANIOLARIA. (*From* κρανιον, *a ſkull. So named from the figure of the ſeed-veſſel.*)
Lin. gen. 752. *Reich.* 810.
Claſſ. 14. 2. Didynamia Angioſpermia.
Nat. order of *Perſonatæ.—Bignoniæ* Juſſ. 140.

GENERIC CHARACTER.

CAL. *Perianth inferior* four-leaved; *leaflets* linear, ſhort, ſpreading, permanent. *Perianth ſuperior* ovate, inflated, large, cut lengthwiſe on one ſide.

COR. one-petalled, unequal; *Tube* very long, very narrow. *Border* flat, two-lipped; *upper lip* entire, roundiſh: like the other diviſions, but larger. *Lower lip* three-cleft; *diviſions* roundiſh; the middle one wider.

STAM. *Filaments* four, length of the tube of the corolla, of which two are ſomewhat ſhorter. *Anthers* ſimple.

PIST. *Germ* ovate. *Style* thread-form, length of the tube of the corolla. *Stigma* thickiſh, obtuſe.

PER. coriaceous, ovate, ſharp on both ſides, two-valved.

SEED. *Nut* woody, depreſſed, ſharpened on both ſides, with a bent two-parted point, marked on each ſide with three-toothed furrows, (of the figure of a quadruped's ſkull,) two-cleft on the ſides.

OBS. *This genus is too nearly allied to* Martynia, *but the corolla is more equal.*
In Cr. annua *the inferior calyx is two-leaved.* R.

ESSENTIAL CHARACTER.

Cal. double of the flower: perianth four-leaved; ſpathe one-leafed. *Cor.* tube very long.—*Capſ.* of Martynia.

SPECIES.

1. Craniolaria annua.
Lin. ſyſt. 558. *Reich.* 3. 141. *mant.* 417. *Jacqu. amer.* 173. *t.* 110. *amer. pict.* 86. *t.* 166. *Ehret. pict.* 1. *f.* 2.
Martynia Craniolaria. *Gloxin. obſ. bot.* p. 11. & 14.
Leaves cordate angled; outer calyx two-leaved.

DESCRIPTION, &c.

1. [This is an annual plant, two feet high, the whole of it villoſe and extremely viſcid, from a ſingle and very ſhort trunk divided into dichotomous, round thick branches, procumbent at the baſe, but above the middle erect, diffuſed. Leaves large, oppoſite, half five-lobed; the lobes ſubovate, repand-toothed, acute: petiole reddiſh, hairy, dividing at the end, and bordering the leaf on each ſide at the baſe. Racemes ſimple, looſe, upright, near a foot in length, and containing about ten flowers, in all the diviſions of the ſtem, accompanied by a ſolitary one-flowered peduncle. Other ſhorter irregular racemes terminate all the branchlets, and ſpring from the axils of ſome leaves. Flowers handſome, but without ſcent, hirſute. Calyx green. Corolla white, with three large dark purple ſpots at the bottom of the throat. There is a very ſhort rudiment of a fifth filament under the diviſion of the upper lip. Pericarp at firſt green, but yellow when ripe. Nut black, abiding ſome days after the pericarp has fallen, not opening, or even ſeparable with conſiderable force, though it appears to be four-valved. The proper peduncles are ſupported by a bracte reſembling the calycine appendicles. The throat of the corolla, which is more clammy than any part of the plant, generally has abundance of very ſmall flies, which are attracted by the honey juice, and being entangled in it, there meet their death [a].

Linneus obſerves, that the calyx is ovate, diſſected above longitudinally, and has two bractes at the baſe. It reſembles Martynia annua, but the tube of the corolla is very long [b]. (ſeven or eight inches.)

The root, which is brown without, but white within, round, fleſhy, thick, has a ſweet taſte, and is eaten freſh with milk, or preſerved with ſugar. It is uſed in the Spaniſh Weſt-Indies for the ſame purpoſes as that of Scorzonera is in Europe; and is called there by the ſame name [c].]

It was diſcovered in the neighbourhood of Carthagena in New Spain by William Houſtoun, M.D. who ſent the ſeeds to England.

PROPAGATION AND CULTURE. See MARTYNIA.

CRANIOLARIA. See *Geſneria* and *Martynia.*

CRANTZIA. See *Tricera.*

[CRANZIA. (*So named by Schreber in honour of Joa. Nepom. Crantz or Cranz, profeſſor of materia medica, &c. at Vienna, author of Stirpes Auſtriacæ, &c.*)
Lin. gen. Schreb. n. 362. Paullinia *of former editions.* Scopolia *Smith. ic.* 34. Toddalia *Juſſ. gen.* 371.
Claſſ. 5. 1. Pentandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* five-parted, ſmall, permanent: *parts* ovate, acute, concave, ſpreading.

COR. *Petals* five, oblong, ſeſſile, erect, bluntiſh, channelled, vaulted at top, keeled behind the tip, ſhrivelling.

STAM. *Filaments* five, broader at the baſe, three-ſided, ſubulate at the tip, erect, oppoſite to and longer than the petals. *Anthers* roundiſh, incumbent.

PIST. *Germ* ſubglobular, five-lobed; each lobe ſcored with a longitudinal groove. *Style* cylindric, thicker in the middle, grooved longitudinally, ſcarcely longer than the germ. *Stigma* three-lobed, obtuſe. (truncate, *Juſſ.* capitate, *Smith.*)

PER. *Berry* angular-globoſe, acuminate, dotted on the outſide, one-celled. (five-celled, *Juſſ.*)

SEEDS a few, (three to nine) kidney-form, oblong, full of pits.

OBS. *The berry is commonly obſcurely three-ſided, and contains three ſeeds; according to Rheede. Burmann obſerved five, and Schreber about ten ſeeds; we may conclude therefore that the number varies.*

ESSENTIAL CHARACTER.

Cal. five-parted. *Petals* five. *Nectary* none. *Berry* or berried capſule.

SPECIES.

1. Cranzia aculeata.
Scopolia aculeata. *Smith. ic. ined.* 2. 34.
Paullinia aſiatica. *Lin. ſpec.* 524. *ſyſt.* 379. *Reich.* 2. 216. *Fl. zeyl. n.* 143.
Kaka-toddali. *Rheede malab.* 5. 81. *t.* 41.

DESCRIPTION, &c.

This is a prickly ſhrub. Leaves ternate, with pellucid dots. Flowers panicled, axillary. Fruit dotted like the Orange [d].

Native of the Eaſt-Indies. Obſerved by Commerſon in the iſland of Bourbon.]

[CRASPEDIA. (*From* Κρασπεδον, *a fringe.*)
Lin. gen. Schreb. n. 1350. *Forſt. flor.* 58.
Claſſ. 19. 5. Syngeneſia Polygamia Segregata.

GENERIC CHARACTER.

CAL. *Common* imbricate. *Florets* in a few depreſſed bundles. *Perianth* partial none.

COR. *Compound* tubular. *Corollets* hermaphrodite.

STAM. *Filaments* five. *Anther* cylindric.

PIST.

PER. none.

SEEDS with a feathered down.

REC. chaffy.

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[a] Jacquin. [b] Mant. [c] Jacquin. [d] Juſſ. gen.

ESSENTIAL CHARACTER.

Calycle none. *Cal.* imbricate. *Florets* in depreſſed bundles, all hermaphrodite, tubular. *Down* feathered. *Rec.* chaffy.

SPECIES.

1. Craſpedia uniflora.
Forſt. flor. auſtral. n. 306.
Native of New Zealand. Charlotte Sound, november 1774.]

Crassina. See *Zinnia.*

CRASSŬLA. (*So named from the thickneſs of the leaves.*)
Lin. gen. n. 392. *Reich.* 423. *Schreb.* 533. *Dill. elth. t.* 96. *p.* 114.
Claſſ. 5. 5. Pentandria Pentagynia.
Nat. order of *Succulentæ.—Sempervivæ* Juſſ. 307.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed; five-cleft; *diviſions* lanceolate, channelled-concave, erect, acute, converging into a tube, permanent.

Cor. *Petals* five; *claws* long, linear, ſtraight, converging, connected at the baſe with the ovate bractes at the border, reflex-expanding.
Nectaries five: each with a very ſmall emarginate ſcale, annexed outwardly to the baſe of the germ.

Stam. *Filaments* five, ſubulate, length of the tube, inſerted into the claws of the corolla. *Anthers* ſimple.

Pist. *Germs* five, oblong, acuminate, ending in ſubulate *ſtyles* the length of the ſtamens. *Stigmas* obtuſe.

Per. *Capſules* five, oblong, acuminate, ſtraight, compreſſed, gaping inwards lengthwiſe.

Seeds many, ſmall.

Obs. *Allied to* Sedum, *but differing in the number of ſtamens.*

ESSENTIAL CHARACTER.

Cal. one-leafed, five-cleft. *Pet.* five. *Nectareous ſcales* five at the baſe of the germ. *Capſ.* five, many-ſeeded.

SPECIES.

Shrubby.

1. Craſſula coccinea. *Scarlet-flowered Craſſula.*
Lin. ſpec. 404. *Reich.* 768. *mant.* 360. *hort. cliff.* 116. *Berg. cap.* 82.
Cotyledon. *Comm. rar. t.* 24. *Bradl. ſucc.* 5. 7. *t.* 50. *Breyn. prodr.* 3. *t.* 20. *f.* 1.
Leaves ovate plane cartilaginous-ciliate connate-ſheathing at the baſe.

[2. Craſſula cymoſa. *Cyme-bearing Craſſula.*
Lin. ſyſt. 304. *Reich.* 769. *mant.* 222. *Berg. cap.* 84. *Pet. gaz. t.* 89. *f.* 6.
Leaves linear cartilaginous-ciliate connate-ſheathing, ſtem ſhrubby, cyme terminating.

3. Craſſula flava. *Yellow-flowered Craſſula.*
Lin. ſyſt. 304. *Reich.* 769. *mant.* 60. *Burm. afr.* 37. *t.* 23. *f.* 2. *Pluk. alm. t.* 314. *f.* 2. (Sedum.)
Leaves plane connate-perfoliate even, flowers corymb-panicled.

4. Craſſula pruinoſa. *Froſted-leaved Craſſula.*
Lin. ſyſt. 304. *Reich.* 769. *mant.* 60.
Leaves ſubulate froſted-ſcabrous, flowers corymbed, ſtem ſhrubby.]

5. Craſſula ſcabra. *Rugged Craſſula.*
Lin. ſpec. 405. *Reich.* 770. *Berg. cap.* 84. *Dill. elth.* 117. *t.* 99. *f.* 117. *Mart. cent. t.* 24. (Cotyledon.)
Leaves oppoſite ſpreading connate ſcabrous ciliate, ſtem ſcabrous backward.

6. Craſſula perfoliata. *Perfoliate Craſſula.*
Lin. ſpec. 404. *Reich.* 770. *hort. cliff.* 116. *Mill. fig. t.* 108. *Dill. elth.* 114. *t.* 96. *f.* 113. *Comm. præl. t.* 23. (Aloe.)
Leaves lanceolate ſeſſile connate channelled.

[7. Craſſula fruticuloſa.
Lin. ſyſt. 305. *Reich.* 770. *mant.* 61.
β. C. caffra. *Lin. mant.* 222.
Leaves oppoſite ſubulate acute ſpreading ſomewhat recurved, ſtem ſhrubby.

8. Craſſula tetragona. *Square-leaved Craſſula.*
Lin. ſyſt. 305. *Reich.* 771. *mant.* 361. *hort. cliff.* 116.
Cotyledonoides africanum. *Bradl. ſucc.* 5. 18. *t.* 50.
Leaves ſubulate ſomewhat incurved obſcurely four-cornered ſpreading, ſtem erect arboreſcent rooting.

9. Craſſula ramoſa. *Branching Craſſula.*
Thunb. nov. act. nat. cur. 6. 341. *Ait. hort. kew.* 390.
C. dichotoma. *Lin. ſyſt.* 305. *ſuppl.* 188.
Leaves ſubulate plane above connate-perfoliate even ſpreading very much, peduncles elongated, flowers cymed.

10. Craſſula obvallata.
Lin. ſyſt. 305. *Reich.* 771. *mant.* 61.
Leaves oppoſite ſublanceolate cultrate approximating.]

11. Craſſula cultrata. *Sharp-leaved Craſſula.*
Lin. ſpec. 405. *Reich.* 771. *hort. cliff.* 496. *Dill. elth.* 115. *t.* 97. *f.* 114.
Leaves oppoſite obovate ſubcultrate oblique connate quite entire.

12. Craſſula Cotyledon. *Tree Craſſula.*
Lin. ſyſt. 305. *Jacqu. miſc.* 2. 295. *t.* 19.
Cotyledon arboreſcens. *Mill. dict. n.* 7.
Leaves roundiſh fleſhy dotted on the upper ſurface, ſtem arboreous.

[13. Craſſula pinnata. *Wing-leaved Craſſula.*
Lin. ſyſt. 305. *ſuppl.* 191.
Leaves pinnate, ſtem arboreous.

Herbaceous.

14. Craſſula centauroides. *Centory-flowered Craſſula.*
Lin. ſpec. 404. *Reich.* 772. *mant.* 361. *amœn.* 6. *afr.* 8.
Stem dichotomous, leaves ſeſſile oblong-ovate cordate plane, peduncles axillary one-flowered.

15. Craſſula dichotoma. *Forked Craſſula.*
Lin. ſpec. 404. *ſyſt.* 305. *n.* 15. (*not n.* 9) *Reich.* 772. *amœn.* 6. *afr. p.* 86. *Ait. hort. kew.* 392.
Stem dichotomous, leaves ſeſſile ovate-oblong channelled recurved, peduncles axillary one-flowered.

16. Craſſula glomerata. *Cluſtered Craſſula.*
Lin. ſyſt. 305. *Reich.* 772. *mant.* 60.
α. With a rough ſtalk.
β. With a ſmooth ſtalk.
Stem dichotomous, leaves lanceolate, the laſt flowers faſcicled.

17. Craſſula ſtrigoſa.
Lin. ſpec. 405. *Reich.* 773. *amœn.* 6. *afr.* 9.
Stem dichotomous erect, leaves obovate ſtrigoſe, peduncles one-flowered.

18. Craſſula muſcoſa.
Lin. ſpec. 405. *Reich.* 773. *amœn.* 6. *afr.* 10.
Stem proſtrate, leaves oppoſite ovate gibboſe imbricate, flowers ſeſſile ſolitary.]

19. Craſſula ciliata. *Ciliated Craſſula.*
Lin. ſpec. 405. *Reich.* 773. *hort. cliff.* 496. *Dill. elth.* 116. *t.* 98. *f.* 116.
Leaves oppoſite oval flattiſh diſtinct ciliate, corymbs terminating.

20. Craſſula punctata. *Dotted Craſſula.*
Lin. ſpec. 406. *Reich.* 773.
Leaves oppoſite ovate dotted ciliate, the lower oblong.

21. Craſſula ſubulata. *Awl-leaved Craſſula.*
Lin. ſpec. 404. *ſyſt.* 305. *Reich.* 774. *mant.* 360. *Berg. cap.* 83. *Pet. gaz. t.* 89. *f.* 8. (*Spiræa.*) *Herm. lugdb.* 550. *t.* 552.
Leaves ſubulate columnar ſpreading.

22. Craſſula alternifolia. *Alternate-leaved Craſſla.*
Lin. ſpec. 405. *Reich.* 774. *hort. cliff.* 497. 9. *Burm. afr. t.* 24. *f.* 1.
Leaves ſerrate-toothed plane alternate, ſtem very ſimple, flowers pendulous.]

23. Craſſula rubens. *Hardy annual Craſſula.*
Lin. ſyſt. 306. *Reich.* 774. *Ait. hort. kew.* 397. *Allion. pedem. n.* 1756. *Hall. helv. n.* 960. (*Sedum.*)
Sedum rubens. *Mill. dict. n.* 6.
Sedum arvenſe fl. rubente. *Bauh. pin.* 283. *La Chenal in act. helv.* 7. 331. *t.* 11.
Leaves ſcattered ſemicylindric ſmooth, flowers lateral, ſolitary ſubſeſſile; branches villoſe.

[24. Craſſula verticillaris. *Whorl-flowered Craſſula.*
Lin. ſyſt. 306. *Reich.* 775. *mant.* 361.
Leaves ſpreading, flowers verticilled awned.]

25. Craſſula nudicaulis. *Naked-ſtalked Craſſula.*
Lin. ſpec. 405. *Reich.* 775. *hort. cliff.* 116. *Dill. elth.* 116. *t.* 98. *f.* 115.
Leaves ſubulate radical, ſtem naked.]

26. Craſſula orbicularis. *Starry Craſſula.*
Lin. ſpec. 406. *Reich.* 775. *mant.* 361. *hort. cliff.* 496. *Dill. elth.* 119. *t.* 100. *f.* 118.
C. ſedioides. *Mill. dict. n.* 9.
Runners proliferous determinately leafy, leaves very much ſpreading imbricate.

27. Craſſula pellucida.
Lin. ſpec. 406. *Reich.* 776. *Dill. elth.* 119. *t.* 100. *f.* 119.
Stem flaccid creeping, leaves oppoſite.

[28. Craſſula columnaris.
Lin. ſyſt. 306. *ſuppl.* 191. *Act. nov. nat. cur.* 6. 335. *Burm. afr.* 19. *t.* 11. *f.* 2. (*Euphorbium.*)
Stem erect, leaves connate, orbiculate, ciliate, hemiſpherically imbricate, flowers in a head.

Species from Linneus's ſupplement and Thunberg's monographia; many uncertain whether they are ſhrubby or herbaceous.

29. Craſſula barbata. *Bearded-leaved Craſſula.*
Lin. ſyſt. 306. *ſuppl.* 188. *Act. nov. nat. cur.* 6. 332.
Leaves connate orbiculate bearded hemiſpherically imbricate, ſtem almoſt naked, flowers in whorls.

30. Craſſula argentea. *Silver-leaved Craſſula.*
Lin. ſyſt. 306. *ſuppl.* 188. *Act. nov. nat. cur.* 6. 337.
Leaves connate ovate entire ſilvery, ſtem covered, corymb ſuperdecompound.

31. Craſſula veſtita.
Lin. ſyſt. 306. *ſuppl.* 188. *Act. nov. nat. cur.* 6. 335.
Leaves connate deltoid obtuſe, ſtem covered, flowers terminating in a head.

32. Craſſula corallina.
Lin. ſyſt. 306. *ſuppl.* 188. *Act. nov. nat. cur.* 6. 334.
Leaves connate deltoid obtuſe, ſtem covered, flowers in an umbel.

33. Craſſula retroflexa. *Orange-flowered Craſſula.*
Lin. ſyſt. 306. *ſuppl.* 188. *Thunb. nov. act. nat. cur.* 6. 338.
Leaves connate oblong remote, ſtem ſimple, cyme compound, pedicels bent back at an angle.

34. Craſſula deltoidea. *Deltoid-leaved Craſſula.*
Lin. ſyſt. 306. *ſuppl.* 189. *Act. nov. nat. cur.* 6. 334.
Leaves connate deltoid, ſtem covered, flowers corymbed.

35. Craſſula cordata. *Heart-leaved Craſſula.*
Lin. ſyſt. 306. *ſuppl.* 189. *Thunb. nov. act. nat. cur.* 6. 330. *Ait. hort. kew.* 396.
Leaves petioled cordate, flowers ſolitary.

Craſſula montana.
Lin. ſyſt. 307. *ſuppl.* 189. *Act. nov. nat. cur.* 6. 332.
Leaves connate ovate acute ciliate, ſtem almoſt naked, flowers headed-aggregate.

37. Craſſula mollis. *Fig-Marygold-leaved Craſſula.*
Lin. ſyſt. 307. *ſuppl.* 189. *Thunb. nov. act. nat. cur.* 6. 340. *Ait. hort. kew.* 391.
Leaves connate, cylindric-triquetrous, ſmooth, ſoft, remote; ſtem erect, ſimple; corymb trichotomous ſuperdecompound.

38. Craſſula crenulata. *Notch-leaved Craſſula.*
Lin. ſyſt. 307. *ſuppl.* 189. *Act. nov. nat. cur.* 6. 339.
Leaves connate lanceolate dotted and crenulate remote, corymb decompound.

39. Craſſula alpeſtris.
Lin. ſyſt. 307. *ſuppl.* 189. *Act. nov. nat. cur.* 6. 336. *t.* 56. *f.* 4.
Leaves connate ovate acute entire imbricate in four rows, heads peduncled.

40. Craſſula pyramidalis.
Lin. ſyſt. 307. *ſuppl.* 189. *Act. nov. nat. cur.* 6. 335. *t.* 56. *f.* 3.
Leaves connate ovate obtuſe entire imbricate in four rows, heads ſeſſile.

41. Craſſula ſpicata.
Lin. ſyſt. 307. *ſuppl.* 189. *Act. nov. nat. cur.* 6. 333.
Leaves connate linear-ſubulate, ſcape almoſt naked, flowers in whorls.

42. Craſſula turrita.
Lin. ſyſt. 307. *ſuppl.* 189. *Act. nov. nat. cur.* 6. 336.
Leaves connate imbricate in four rows ovate-oblong acute ciliate.

43. Craſſula rupeſtris.
Lin. ſyſt. 307. *ſuppl.* 189. *Act. nov. nat. cur.* 6. 337.
Leaves connate ovate entire ſmooth, ſtem covered, corymb ſuperdecompound.

44. Craſſula thyrſiflora.
Lin. ſyſt. 307. *ſuppl.* 190. *Act. nov. nat. cur.* 6. 339.
Leaves perfoliate ovate ciliate patulous, corymb compound ſpiked.

45. Craſſula capitella. *Square-ſpiked Craſſula.*
Lin. ſyſt. 307. *ſuppl.* 190. *Thunb. nov. act. nat. cur.* 6. 339. *Ait. hort. kew.* 394.
Leaves oblong connate cartilaginous-ciliate, patulous, flowers in headed whorls.

46. Craſſula pubeſcens.
Lin. ſyſt. 307. *ſuppl.* 190. *Act. nov. nat. cur.* 6. 340.
Leaves connate ovate-ſubulate villoſe, ſtem branching, flowers corymbed.

47. Craſſula cephalophora.
Lin. ſyſt. 307. *ſuppl.* 190. *Act. nov. nat. cur.* 6. 333.
Leaves connate linear-oblong obtuſe entire; heads lateral peduncled.

48. Craſſula tomentoſa.
Lin. ſyſt. 307. *ſuppl.* 190. *Act. nov. nat. cur.* 6. 333.
Leaves connate lanceolate villoſe ciliate, ſtem almoſt naked, flowers in whorls.

49. Craſſula Cotyledonis.
Lin. ſyſt. 307. *ſuppl.* 190. *Act. nov. nat. cur.* 6. 332.
Leaves connate oblong tomentoſe ciliate, ſtem almoſt naked; flowers corymbed aggregate.

50. Craſſula tecta.
Lin. ſyſt. 307. *ſuppl.* 190. *Act. nov. nat. cur.* 6. 331.
Leaves connate ovate obtuſe aſh-coloured lamelloſe, ſcape naked, flowers ſeſſile.

51. Craſſula perforata.
Lin. ſyſt. 307. *ſuppl.* 190. *Act. nov. nat. cur.* 6. 338.
Leaves connate-perfoliate ovate, ciliate, remote; ſtem erect, thyrſe-bearing.

Species from Hortus Kewenſis.

52. Craſſula expanſa. *Awl-leaved Craſſula.*
Ait. hort. kew. 390.
Leaves ſemicylindric-ſubulate channelled above ſpreading, peduncles axillary ſolitary one-flowered, ſtems dichotomous.

53. Craſſula lineolata. *Channelled Craſſula.*
Ait. hort. kew. 391.
Stem herbaceous, leaves cordate ſeſſile, peduncles almoſt terminating axillary approximating umbel-ſhaped.

54. Craſſula pulchella. *Reflex-leaved Craſſula.*
Ait. hort. kew. 392.
Stem herbaceous dichotomous, leaves ovate-oblong fleſhy reflex, flowers in the forks peduncled, peduncles turbinate.

55. Craſſula imbricata. *Imbricate Craſſula.*
Ait. hort. kew. 393.
Leaves ovate acute imbricate in four rows gloſſy, flowers axillary ſeſſile.]

56. Craſſula obliqua. *Oblique-leaved Craſſula.*
Ait. hort. kew. 393.
Cotyledon ovata. *Mill. dict. n.* 8.
Leaves oppoſite ovate oblique quite entire acute diſtinct, ſomewhat cartilaginous at the edge.

[57. Craſſula alooides. *Spike-flowered Craſſula.*
Ait. hort. kew. 394.

Leaves ovate diſtinct acute ciliate, ſtem ſimple, ſomewhat hairy, raceme compound, branches panicle-ſhaped.

58. Craſſula ſparſa. *Alternate-leaved Craſſula.*
Ait. hort. kew. 395.
Leaves alternate ſubſpatulate acute quite entire, raceme compound.

59. Craſſula diffuſa. *Diffuſe Craſſula.*
Ait. hort. kew. 395.
Leaves oblong attenuated at the baſe remotely crenate, peduncles oppoſite to the leaves and axillary ſolitary.

60. Craſſula ſpathulata. *Crenated Craſſula.*
Ait. hort. kew. 395. *Thunb. nov. act. nat. cur.* 6. 330.
Leaves petioled cordate-roundiſh acutiſh crenate, corymbs panicle-ſhaped.

61. Craſſula marginalis. *Margined Craſſula.*
Ait. hort. kew. 396.
Stem ſhrubby, leaves cordate perfoliate acuminate plane ſpreading dotted within the margin.

62. Craſſula lactea. *Snowy Craſſula.*
Ait. hort. kew. 396.
Stem ſhrubby, leaves ovate attenuated at the baſe connate quite entire dotted within the margin, cymes panicled-ſhaped.

63. Craſſula ceſpitoſa.
Cavan. hiſp. 50. *n.* 76. *t.* 69. *f.* 2.
Leaves globoſe-ovate, imbricate four ways, cyme three-flowered, flowers ſeſſile.

64. Craſſula Umbella.
Jacqu. collect. 4. 172. *icon. rar.* 2.
Leaves roundiſh perfoliate, racemes axillary and terminating, upper peduncles in whorls.]

DESCRIPTIONS, &c.

1. Stem reddiſh, jointed, about three feet high, dividing at top into many irregular branches. Flowers at the ends of the branches, in cloſe umbels. Corolla funnel-ſhaped, erect, with a pretty long tube cut at the top into five parts, of a fine ſcarlet colour.

[Leaves ſo cloſely oppoſite, as to appear to be in four rows. Faſcicle terminating twice dichotomous; flowers ſeſſile, alternate, monopetalous with a five-parted border[a]. Introduced 1714, by Profeſſor Richard Bradley[b].

It flowers in july or auguſt.

2. Stems a ſpan high, erect, ſmooth, annual; roots perennial. Leaves oppoſite, ſmooth, cartilaginous-ſcaly about the edge. Cyme ſmall[c], bifid; denſe, ſcaly[d].

3. Stem erect, like that of *C. coccinea*, perfoliate, but the leaves not ciliate. Flowers faſcicled, but each pedicelled; petals yellow, erect[e].

4. A ſhrub of a foot in height, dichotomous, the ſmall branches round, blood-red, covered as is the whole plant with the reſemblance of a cryſtalline hoar-froſt. Leaves oppoſite, linear, fleſhy, plane above, the length of the internodes, obſcurely connate. Corymbs terminating, unequal, ſmall. Petals white, lanceolate, ſpreading[f].]

5. Stem weak, ſucculent, about a foot and half high, dividing at top into ſmall branches. Leaves flat, near two inches long, and a quarter of an inch broad at their baſe, gradually narrowing to a point. Flowers in ſmall cluſters at the ends of the branches, ſmall and herbaceous.

[Stem reddiſh green, with age becoming of a cheſnut colour. Leaves thick, ſucculent. The ſtem and leaves are every where rough with whitiſh bubbles. The corolla is ſo deeply divided, as to leave a doubt whether it be monopetalous or pentapetalous[g].

It flowers in june and july.

Cultivated by Dr. Sherard at Eltham, between 1724 and 1732. About the ſame time in the Chelſea garden.]

6. This riſes with an upright ſtem ten or twelve feet high, if it be not broken or injured, but it requires ſupport, the ſtems being ſlender, and the leaves very weighty. The latter are about three inches long, thick, ſucculent, pale green, acute, hollowed above, and having a convex ridge beneath. Flowers terminating, in large cluſters, of a whitiſh herbaceous colour, with ſhort tubes, and the brim cut into five parts. The flower-ſtalk is thick and ſucculent, generally turning firſt downwards, then upwards again, almoſt in form of a ſyphon. It flowers in july, but does not produce ſeeds here.

[Cultivated in 1725 at Eltham, by Dr. Sherard[h].

7. The ſtature of this approaches to that of *C. tetragona*; but it differs, in having the ſtem only a foot high (not three or four feet), erect, green, not reddiſh: the branches narrow almoſt filiform. Leaves oppoſite, horizontal, oblong, columnar, acuminate, not depreſſed above, but rather underneath, and a little arched backwards, ſo as to reſemble *Salſola fruticoſa*[i].

8. Leaves the thickneſs of a gooſe quill. Peduncle terminating, naked, columnar. Cyme trifid, very much branched, faſtigiate. Corolla white with purple anthers[k].

Introduced 1714, by Richard Bradley, Profeſſor of Botany at Cambridge[l].

9. Root perennial. Stem fruteſcent, filiform, branched at bottom, leafy, ſmooth, a foot high. Branches alternate, long, gradually attenuated, ſmooth, ruſeſcent. Leaves faſtigiately-oppoſite, columnar-ſubulate, longer than the internodes, entire, ſmooth, the upper ones gradually ſmaller. Flowers in narrow compound corymbs[m].

Introduced 1774. It flowers in july and auguſt[n].

10. This reſembles very much the next ſpecies, and is very nearly allied to the thicker ones on account of the flowers, the petals of which are white and ſpatulate, awned at the top with a globe, as in the *cultrata*, and never unfolding: but it differs in having a ſhorter ſtem, only a palm in height, and ſpreading; leaves twice as long and larger, not at all contracted at the baſe, more oppoſite and crowded, not having any ſpace between them, the edges, eſpecially of the young ones, very finely crenulated and by no means oblique as in that[o].]

11. This ſort riſes with a weak ſucculent ſtalk about two feet high, ſending out many irregular branches. Leaves thick, plane above but convex beneath, deep green, the borders ſet with a few ſilvery hairs. The ſtalk which ſupports the flowers riſes from the top of the branches, and is from four to ſix inches long, putting out ſeveral ſide branches, which grow erect; theſe are terminated by large cluſters of ſmall greeniſh flowers, which appear in june and july.

[The flower never expands.—Cultivated in the Eltham garden 1732, or earlier[p].

12. The whole plant is ſmooth. Stem as thick as the wriſt, round, browniſh; branches round, greeniſh brown: both are jointed, the joint above blunt and entering the cavity of that below it. Leaves diſtinct, oppoſite, ſubſeſſile, ſpatulate, rounded, quite entire, ſpreading, glaucous,] ſpotted on the upper ſide only with great numbers of dark green ſpots, and having a deep border of purple on the edge; [ſome are very blunt, others have a very ſmall point. Cymes dichotomous, terminating on almoſt all the branchlets. Peduncles compreſſed, greeniſh-glaucous. Bractes ſmall at the diviſions of the peduncles. Flowers numerous, without ſcent. Perianth ſmall, glaucous, ferruginous-red at the end. Petals lanceolate, large, flat, acute, having no claws, but ſpreading very much above the calyx, at firſt white, afterwards roſe-coloured. In the flowers of the principal dichotomies one-fifth part is commonly wanting in all parts of the fructification, ſo that the plant would at firſt flowering ſeem to belong to the fourth order of the fourth claſs[q].

Cultivated in 1739.

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[a] Linn. mant. [b] Hort. kew. [c] Linn. mant. [d] Bergius. [e] Linn. mant. [f] Ibid. [g] Mart. cent.

[h] Dillenius. [i] Linn. mant. [k] Ibid. [l] Hort. kew. [m] Thunberg. [n] Hort. kew. [o] Linn. mant. [p] Dillenius. [q] Jacquin.

In the laſt edition of the Dictionary (1768), Mr. Miller ſays it had not then flowered in England. It flowered in the Imperial garden at Vienna in 1778, at the end of april.

13. A ſhrub, browniſh red, even, with alternate branches. Leaves unequally, alternate: leaflets petioled, cordate, quite entire, acute, even, ſeven or nine; petioles thickiſh at the baſe. Panicle axillary, ſhorter than the leaves, red. Flowers red.—Native of China[r].

14. Stem roundiſh, brachiate, ſomewhat pubeſcent. Leaves generally oppoſite, fleſhy, acute, ſhining, with excavated dots on the upper ſurface. Annual[s], *or* Biennial. Flowering in may and june. Introduced 1774, by Mr. Francis Maſſon[t].

15. This is ſcarcely a palm in height. Stem ſimple, round, pale green, dichotomous at top. Leaves oppoſite, not unlike thoſe of the leſſer Centory. Flowers purple on the outſide, golden-coloured within, with a blood-red heart-ſhaped ſpot at the bottom of each petal[u].

Annual. Flowering in june and july. Introduced 1774, by Maſſon[x].

16. Stem a palm in height, erect, round, purpliſh. Leaves oppoſite, fleſhy, ſeſſile, ſpreading very much, ſharpiſh. Flowers from the forking of the ſtem, ſolitary, ſubpeduncled. Flowers terminating the branchlets, crowded into heads. Diviſions of the calyx ovate, convex, from erect patulous. Petals ovate, white, one-third only of the ſize of the calyx, and therefore minute. Stamens only half the length of the petals. Piſtils five, with ſcarcely any ſtyles, ſtigmas ſhorter than the ſtamens.—The leaves every where ſubciliate at the baſe.—The plant when mature growing reddiſh, except the petioles. Annual[y].

It is commonly deſcribed as having a rough ſtalk; this however is ſometimes ſmooth. It flowers in june and july. Introduced 1774, by Maſſon[z].

17. Leaves oppoſite, obtuſe, marked with lines, quite entire, the lower often on petioles. Calyxes ſtrigoſe, petals ovate, the length of the calyx[a].

18. Stems filiform, ſeldom branched, covered with very ſmall, ſeſſile, fleſhy, bluntiſh leaves. Flowers the moſt minute of all, the length of the leaves[b].

19. Leaves like thoſe of Houſeleek, only ſomewhat ſmaller and more obtuſe, thickly fringed about the edge with white hairs. Stems ſhort, ending in a few leafy branches, which are elongated into round ſhoots a long ſpan in length, having leaves on them like the lower ones, but diſtant from each other in pairs; theſe are generally divided into two peduncles ſuſtaining yellowiſh flowers[c].

Perennial. Flowering in july and auguſt. Cultivated 1732, by Dr. James Sherard, at Eltham[d].]

20. Stems very ſlender, full of joints, trailing. Leaves thick, ſucculent, heart-ſhaped, connate, grayiſh. The ſtems are divided, grow about eight or nine inches long, and are terminated by cluſters of ſmall white flowers, ſitting very cloſe to the top: theſe appear in ſpring, and again in the latter part of ſummer.

[Stem round, even, ſimple. Leaves in a double row, ſeſſile, hollow-dotted, convex underneath, very tenderly ciliate. Corymbs axillary, very ſhort, faſtigiate. Corollas bell-ſhaped, with a reflex border. Anthers purple[e].

Cultivated 1759, by Mr. Miller[f], who received it from Adrian van Royen.

21. Stem covered with truncate, ciliate ſheaths of leaves. Leaves linear, fleſhy, obtuſe, cartilaginous-ciliate. Spikes headed, terminating, ſubſeſſile with an imbricate involucre. Annual[g].

22. Branches two feet long, lax, purple, hairy. Leaves drawn to a very long point at the end, ſeſſile. Flowers ſolitary, on ſhort peduncles, yellow[h].

23. Stem round, pubeſcent, decumbent. Branches aſcending, a finger's length. Leaves ſeſſile, the thickneſs of a hen's feather, towards the end a little attenuated, and there red; the lower almoſt an inch in length, the upper gradually ſhorter. Flowers in the branches among the leaves, ſcattered, remote, on very ſhort peduncles. Leaflets of the calyx fleſhy, convex on the outſide, ſomewhat villoſe, a line in length. Petals three times the length of the calyx, white, keeled; the keel ſomewhat villoſe and red. Nectaries white, very ſmall. Filaments a little ſhorter than the petals. Anthers roundiſh, ſmall, red. Annual[i].

Stem ſimple, with a few viſcid hairs. Leaves ſpreading, oblong, obtuſe, fleſhy; the lower in fours. Cyme trifid or quadrifid with recurved branches. Flowers ſeſſile. Stamens reflex. In ſtature it reſembles Sedum annuum[k]. Branches red, bifid, trifid or multifid at top. Leaves alternate. Stamens ten, but five of them ſoon withering[l].

Stem one, uſually branched; branches erect, generally ſimple. Leaves oblong, ſemicolumnar, linear, flattiſh above, aſh-coloured with a red tip. When viewed with a glaſs very finely hirſute, eſpecially thoſe of the ſtem. The whole branches flower-bearing; the flowers ſeſſile, not really in the axils of the leaves, but placed a little above at their ſides. Leaflets of the calyx ovate, acute. Petals lanceolate, awned. Stamens five. Fruit ſtellate, red, compoſed of the five little capſules awned with the permanent ſtyle[m].

Native of Switzerland and Italy. With us it flowers in may and june. Cultivated 1759, by Mr. Miller[n].

24. Stem very much branched, diffuſe, branches oppoſite, the length of a finger. Leaves oppoſite, crowded, oblong-ovate, ſeſſile, gibbous, with very minute pimples, ſcabrous at the end. Flowers axillary, ſeſſile, very minute. Calyx the length of the corolla, ſubulate. Petals ſhorter than the calyx, lanceolate, acuminate ſo as to be almoſt awned, red in the middle. Stamens very ſhort, red at the end. Stigmas red. Annual[o].

It flowers in july. Introduced 1778, by Mr. Zier[p]. Native of Southern Europe.]

25. This never riſes with a ſtalk, but the leaves come out cloſe to the ground, forming a ſort of head. They are ſucculent, taper, ending in points, and frequently put out roots: out of the centre of theſe ariſes the flower-ſtalk, branching into two or three ſhoots at top, each terminated by cluſters of greeniſh flowers, which make no great appearance.

[Leaves ſmooth, ſomewhat hoary, not unlike thoſe of the Pink, only thicker, and ſet with excavated dots. Flower-ſtems round, from four inches to a foot in height, with joints having each four leaflets. The flowers do not open.

This ſpecies has been long known in the gardens of the curious[q].] It flowers in may, and ſometimes again in the latter part of ſummer.

26. This is a low plant, having open ſpreading heads very like thoſe of ſome ſorts of Houſeleek, growing on the ends of very ſlender trailing ſtalks, produced in plenty on every ſide the parent plant, in like manner as the childing Marigold. The flower-ſtalks ariſe from the centre of theſe heads; they are naked, about four inches long, and terminated by cloſe cluſters of herbaceous flowers. Leaves radical, forming roſes, ovate, fleſhy, gibbous, even, ſharpiſh, ciliate backwards with cartilaginous, very ſlender hairs. The root puts forth lateral threads, which are filiform and decumbent, forming runners at the end. Scape hardly longer than the leaves, and erect. Spike brachiate-verticilled, with few flowers. Petals whitiſh red. Stigmas purple. Perennial[r].

It flowers uſually in july and auguſt, ſometimes in may[s].—Cultivated 1732, by James Sherard, M.D.[t]]

27. Stems ſlender, trailing, ſucculent, of a reddiſh colour, and putting out roots at the joints.

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[r] Linn. ſuppl.
[s] Linn. mant.
[t] Hort. kew.
[u] Herman.
[x] Hort. kew.
[y] Linn. mant.
[z] Hort. kew.
[a] Linn. amoen.
[b] Ibid.
[c] Dillenius.
[d] Hort. kew.
[e] Linn. ſpec.
[f] Hort. kew.
[g] Linn. mant.
[h] Burman.

[i] Hort. kew.
[k] Linn.
[l] Haller.
[m] Allioni.
[n] Hort. kew.
[o] Linn. mant.
[p] Hort. kew.
[q] Dillenius.
[r] Linn. mant.
[s] Dillenius.
[t] Hort. kew.

Theſe and the leaves have the appearance of Purſlane. The flowers are produced in ſmall cluſters at the ends of the branches; they are white, with a bluſh of purple at the brim; they appear in ſummer at different times, and are often followed by ſeeds.

[Common in botanic gardens, both in England and abroad[u].

28. Stem round, ſmooth, covered with leaves. Leaves ſmooth. Flowers terminating, very copious, white; head hemiſpherical[x].—Leaves very blunt, horizontal. Border of the corolla linear, ſpreading[y].

This, and all the foregoing ſpecies, are natives of the Cape of Good Hope, except a very few, the places of growth of which are ſet down.

29. Root biennial. Root-leaves very many, aggregate, thin, ſmooth, with bundles of hairs at the edge. Stem-leaves only two pairs, like the others, but much leſs, and remote. Stem ſlightly angular, erect, ſmooth, a ſpan high, nearly the thickneſs of a quill[z].

30. Root perennial. Stem ſhrubby, branched, a foot or more in height: branches round, ſmooth. Leaves oppoſite, ſuborbiculate, from ſpreading upright, fleſhy, thick, blunt with a point, and with a ſharp edge. Flowers terminating, in an ovate corymb[a].

31. Root fuſiform, creeping, perennial. Stem almoſt upright, branched; a palm high, naked at the baſe. Branches and branchlets alternately ſcattered. Leaves alternately oppoſite, very gibbous underneath, quite entire; the upper ones very cloſe, with a white meal on them, and minute green ſpots; the lower ones ſhrivelling; imbricate in four rows. Flowers ſeſſile, yellow[b].

32. Root fuſiform, perennial. Stems ſeveral, radical, filiform, dichotomous-branched, upright: branches alternate, upright, divided, faſtigiate. Leaves on the branches and branchlets faſtigiately oppoſite, ſeſſile, diſtinct, ſuborbiculate, fleſhy, thickened at the tip, entire, green at the baſe, mealy at the tip, white, with impreſſed greeniſh dots in four rows, frequent, longer than the internodes. Flowers from the ends of the branchlets, very many, terminating, upright, peduncled. Peduncles filiform, ſmooth, one-flowered, ſcarcely longer than the leaves[c].—This and the foregoing reſemble ſea Corallines in the ſtructure of the leaves, but are larger[d].

33. Root annual. Stem filiform, flexuoſe-erect, a finger's length, ſmooth, purple. Stem-leaves two or four, ovate-lanceolate, blunt, ſpreading, entire. Flowers erect, in a decompound, ſubdichotomous cyme. Peduncles and pedicels capillary, with oppoſite bractes under them, like the leaves, but ſmaller. There are three varieties—

1. With orange-coloured flowers, larger.
2. With yellow flowers, middle-ſized.
3. With white flowers, ſmaller and more tender[e].

34. Stem herbaceous, fleſhy, round, upright, naked at bottom, leafy above, branched. Leaves alternately oppoſite, imbricate, ſpreading at the tip, entire, glaucous, mealy. Flowers in a terminating, compound, ſubfaſtigiate corymb[f]. The leaves have the ſame form with thoſe of Meſembryanthemum deltoideum[g].

35. Root annual. Stems herbaceous, weak, gradually more ſlender, leafy at bottom, branched at top, fleſhy, round, fleſh-coloured, almoſt upright, a palm in height: branches oppoſite, capillary, from ſpreading upright, ſmooth. Stem-leaves faſtigiately oppoſite, round, entire, from reflex ſpreading, thick, fleſhy, green, rufous on the edge and dotted with the ſame colour: branch-leaves ſimilar, but many times ſmaller and thinner, green with a circle of dots within the edge. Flowers terminating, on capillary peduncles, a line in length[h].

Introduced at Kew in 1774, by Maſſon. It flowers from may to auguſt[i].—At the Cape, in november and december[k].

36. Root-leaves concave, very frequent, patulous, ſmooth, green tinged with purple; ſtem-leaves about three pairs, ſimilar but ſmaller and remote. Stem filiform, upright, a finger's length, purple. Flowers ſeſſile, in heads uſually ſolitary, ſeldom two lateral together[l].

37. Root perennial. Stem fruteſcent, angular, rufeſcent, very finely tomentoſe, jointed, almoſt the thickneſs of a quill, a foot high. Leaves acute, ſmooth or very finely ſubtomentoſe, patulous; the lower ones nearer, the upper more remote. Flowers in a ſubfaſtigiate corymb. Bractes two, oppoſite, below the peduncles and pedicels, like the leaves but ſmaller[m].

Introduced in 1774, by Maſſon. It flowers here in auguſt[n]; at the Cape in january.

38. Stem herbaceous, upright, cylindric, leafy, jointed, ſmooth, green variegated with white lines, the thickneſs of a quill, a foot high. Leaves faſtigiately oppoſite, ſeſſile, ſubconnate, linear lanceolate, obtuſe, concave above, convex beneath, ſmooth, longer than the internodes, a finger's length, upright but ſpreading at the tip; the upper ones gradually ſmaller and more remote. Flowers white, in a trichotomous, faſtigiate corymb. Two oppoſite, minute bractes under each pedicel[o].

39. Stem round, ſmooth, upright, branched at bottom, before flowering time wholly covered with leaves, a palm high, purple. Branches radical, one or two, ſhort. Leaves acuminate, concave, entire, purpliſh green. Flowers in ſeveral terminating heads, which are larger than Peas. Peduncles purple.

It reſembles C. montana, but the leaves are more acuminate and not ciliate; the ſtem thicker and covered with leaves; the heads and flowers larger[p].

40. Root perennial. Stem flexuoſe-erect, branched, the whole covered with leaves, a palm high; branches alternate. Leaves margined, a line long, ſmooth. Flowers at the ends of the branches, in ſolitary globular heads, larger than a pea.

It reſembles C. muſcoſa, but has a thicker ſtem, and the flowers in heads[q].

41. Root-leaves faſtigiately oppoſite, erect, concave above, convex below, ſmooth, a finger's length, very much crowded; ſtem-leaves oppoſite, ſmaller. Stem round, herbaceous, erect, ſmooth, a ſpan high. Whorls approximating, ſeſſile, many-flowered[r].

42. Root annual. Stem herbaceous, weak, erect, round, jointed, covered with leaves, ſmooth, a palm high. Branches, when there are any, axillary, very ſhort. Leaves alternately oppoſite, cartilaginous-ciliate, thick, ſmooth, red; the lower ones oblong, concave above, convex beneath; the upper ones ovate, flat above, convex beneath; the uppermoſt gradually ſmaller and nearer[s].

43. Root perennial, branched. Stem round, branched, a palm and more in height. Leaves alternately oppoſite, acute, a little concave above, convex and keeled beneath, approximating, longer than the internodes, green with a rufeſcent margin, from erect patulous. Flowers in trichotomous faſtigiate corymbs. Peduncles and pedicels ſmooth, white tinged with purple. There is a minute, ovate, white bracte under each pedicel[t].

44. Stem round, herbaceous, upright, a ſpan high, ſmooth. Leaves obtuſe, ſhorter than the internodes, ſmooth. Flowers white, in a thyrſe gradually attenuated, decompound, a palm in length. Bractes below the peduncles and pedicels, oppoſite, like the leaves but ſmaller[u].

45. Stem round, ſmooth, erect, a ſpan high, the thickneſs of a quill, ſometimes branched at top. Leaves acute, ciliate, remote, longer than the internodes, ſmooth. Flowers white, in ſeſſile, many-flowered, approximating whorls[x].

It was introduced in 1774, by Maſſon; flowers in july and auguſt; and is biennial[y]. At the Cape it flowers in december and january.

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[u] Dillenius.
[x] Thunberg.
[y] Linn. ſuppl.
[z] Thunberg.
[a] Ibid.
[b] Ibid.
[c] Ibid.
[d] Linn. ſuppl.
[e] Thunberg.
[f] Ibid.
[g] Linn. ſuppl.
[h] Thunberg.
[i] Hort. kew.
[k] Thunberg.

[l] Thunberg.
[m] Ibid.
[n] Hort. kew.
[o] Thunberg.
[p] Ibid.
[q] Ibid.
[r] Ibid.
[s] Ibid.
[t] Ibid.
[u] Ibid.
[x] Ibid.
[y] Hort. kew.

46. Root perennial. Stem filiform, frutefcent, branched, erect, red, ſmooth, a ſpan high: branches ſubverticilled in threes, ſubdivided, pubeſcent. Leaves thick, ſpreading, the length of the internodes, flattiſh above, gibbous beneath. Corymb compound, trichotomous [z].

47. Root-leaves erect, ſubtomentoſe, a finger's length: ſtem-leaves none. Stem round, erect ſubtomentoſe, a ſpan high. Heads of flowers oppoſite, the ſize of a pea [a].

48. Root-leaves bluntiſh, hirſute, imbricate; ſtem-leaves three pairs, ſmaller. Stem angular, erect, villoſe, a foot high [b].

49. Stem ſimple, erect, herbaceous, ſlightly four-cornered, leafleſs, tomentoſe, the thickneſs of a quill, a foot high. Root-leaves ſeveral, faſtigiately-oppoſite, very much crowded, oval, obtuſe, flat above, convex beneath, entire, ſubtomentoſe and ſoft, a finger's length, an inch wide, erect; ſtem-leaves three pairs, ſmaller. Bractes on the peduncles faſtigiately-oppoſite, connate-ſheathing, ovate, obtuſe, preſſed cloſe, a line in length, tomentoſe. Flowers white, pedicelled. Peduncles trichotomous. Corymb decompound [c].

50. Stem ſcarcely any. Leaves ſubradical, very abundant, imbricate, convex beneath, concave above, thick, covered with an aſh-coloured meal reſembling the ſcales of a butterfly's wing, naked at the baſe, cartilaginous-ciliate; the upper ones ſmaller. Scape erect, filiform. Flowers ſeveral, minute, collected into a head [d].

51. Stem round, jointed, gradually attenuated, leafy, ſmooth, a foot high. Leaves faſtigiately-oppoſite, acute, cartilaginous-ciliate, ſpreading, the length of the internodes, green, underneath and on the upper edge rufeſcent. Flowers in an interrupted compound thyrſe, chiefly directed one way, and bent in. Peduncles and pedicels filiform [e].

This, and all the foregoing ſpecies from twenty-nine incluſive, are natives of the Cape of Good Hope, and were obſerved there by Thunberg.

52. Annual. Flowering in june and july [f].

53. Biennial. Flowering from june to auguſt.

This and the foregoing ſort, were found by Maſſon at the Cape of Good Hope, and were introduced in 1774 [g].

54. This is allied to C. glomerata (n. 16.) and ſhould come next in order to that. It differs in having ſhorter reflex leaves, peduncles turbinate ſeeming to be an inferior germ, calyxes obtuſe, corollas rather longer than the calyx. Annual. Flowering in july. Found at the Cape by Maſſon, and introduced 1788 [h].

55. Shrubby. Flowering in june. Introduced about 1760, by Mr. Clark [i].]

56. Stem near three feet high, erect, dividing into many branches. Leaves of a lively green, half-ſtem-claſping.

[Shrubby. Flowering in april and may. Cultivated by Mr. Miller in 1759.

57. Biennial. Stem ſcarcely a ſpan in height. Leaves fleſhy, ſmooth, with minute red impreſſed dots ſcattered over them, and an inch in length. Raceme terminating. Peduncles diſtant, ſpreading, ſubdivided into trichotomous cymes. Leaflets of the calyx ſmooth, a line in length. Petals twice the length of the calyx, white with greeniſh bottoms. Nectaries yellow. Filaments white. Anthers roundiſh, ſmall.—It flowers from june to auguſt: was brought from the Cape by Maſſon: and was introduced in 1774 [k].

58. Biennial. Flowering in july.

59. Annual. Flowering in july.

60. Shrubby. Flowering in july and auguſt.

61. Shrubby. Flowering in july and auguſt.

62. Shrubby. Flowering in ſeptember and october.—All theſe were found at the Cape by Maſſon; and were introduced 1774 [l].

63. This is a thick annual plant, ſcarcely three lines in height. Stem red. Leaves ſeſſile, green with a red dot at the end, becoming red by age. Calyx four or five-cleft. Petals four or five, whitiſh with a red keel, having a little bracte at the baſe of each. Stamens four or five. Germs and capſules four or five. It is almoſt always deficient in one-fifth part of the fructification; and differs from C. rubens in having globoſe-ovate leaves, imbricate in four rows.—Common near Madrid, flowering in march [m].

64. Root perennial. The whole of this plant is ſmooth. Stem one or two, annual, round, fleſhy, the ſize of a quill, a ſpan high, upright, ſubpellucid, almoſt upright, pale fleſh-colour, ſhining, undivided. Root-leaves none. Stem-leaves two, ſometimes only one, convex, repand, brittle, above green with pale rays, appearing dotted when viewed with a magnifier, beneath red-purple, the largeſt three inches in diameter. Racemes to each leaf two, oppoſite, erect, ſlender, from an inch to two inches in length. Lower peduncles oppoſite, one-flowered or umbelled. Flowers ſmall, without ſcent. Calyx dotted, green. Petals twice as long as the calyx, white within, fleſh-coloured without. Nectareous ſcales before the petals brown. Moſt of the flowers have ſix ſtamens and ſtyles, with the calyx and corolla ſix-parted.—Native of the Cape of Good Hope [n].]

PROPAGATION AND CULTURE.

1. This, and all the hardy ſorts are propagated by cuttings during any of the ſummer months; they ſhould be cut off about a fortnight before they are planted, and laid in a dry place that the wounded part may heal over; then they ſhould be each planted in a ſmall pot filled with light ſandy earth, and plunged into a moderate hot-bed, giving them but little water. In about ſix weeks theſe will have put out roots and begin to grow, when they ſhould have a large ſhare of air admitted to them, and muſt be gradually inured to bear the open air, into which they ſhould be removed, placing them in a ſheltered ſituation, where they may remain till autumn; when they muſt be removed into a dry airy glaſs-caſe, where they may enjoy the ſun as much as poſſible, and be ſcreened from the wet and cold. In warm dry weather, during the ſummer months while they are abroad, theſe plants ſhould be gently watered two or three times a week; but in winter they ſhould have very little water, leſt it rot their ſtems. Theſe plants require no artificial heat in winter, but they muſt be ſecured from froſt and wet.

11. Being pretty hardy, ſhould not be ſo tenderly treated; for if the cuttings are planted in a border of light earth, they will put out roots, and may afterwards be taken up and potted, to be ſheltered in winter.

[23, 24. Are hardy plants. The firſt of theſe may be increaſed in the ſame manner with the Sedums; the other being annual muſt be propagated by ſeeds.

25, 26. Theſe are propagated by the heads or offſets, laid to dry three or four days before they are planted, during any of the ſummer months. They are hardy, and may be treated as n. 11.

27. Is eaſily increaſed by its trailing branches, and is hardy, but unleſs the plants are often renewed they will decay.

All the hardy ſorts of Craſſula may be treated in the ſame way as the Ficoides, or Meſembryanthemums, and other hardier kinds of ſucculent plants, with this difference only, not to give them ſo much water; but the firſt, ſixth, and ſome other ſorts require to be placed in a warm dry glaſs-caſe in winter, and muſt not be ſo long expoſed abroad in the ſummer as the other ſpecies, nor ſhould have much water, eſpecially in the winter.

CRASSULA. See *Tillæa.*

——— FRUTICOSA. See *Othonna tenuiſſima.*

——— PORTULACARIA. See *Claytonia.*]

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[z] Thunberg. [a] Ibid. [b] Ibid. [c] Ibid. [d] Ibid. [e] Ibid. [f] Hort. kew. [g] Ibid. [h] Ibid. [i] Ibid. [k] Ibid. [l] Ibid.

[m] Cavanilles. [n] Jacquin.

CRATÆGUS. (*Κρατάιγος or Κραταιγων of Theophraſtus; of uncertain origin, unleſs from κρατος, ſtrength.*) *Lin. gen.* 622. *Reich.* 678: *Schreb.* 854. *Tourn.*
Claſſ. 12. 2. Icoſandria Digynia.
Nat. order of *Pomaceæ—Roſaceæ.* Juſſ. 335.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, concave-ſpreading, five-cleft; permanent.
Cor. *Petals* five, roundiſh, concave, ſeſſile, inſerted into the calyx.
Stam. *Filaments* twenty, ſubulate, inſerted into the calyx. *Anthers* roundiſh.
Pist. *Germ* inferior. *Styles* two, filiform, erect. *Stigmas* headed.
Per. *Berry* fleſhy, roundiſh, umbilicated.
Seeds two, ſomewhat oblong, diſtinct, cartilaginous.
Obs. *The number of Piſtils varies, in this genus, and others allied to it.* R.

ESSENTIAL CHARACTER.

Cal. five-cleft. *Pet.* five. *Berry* inferior, two-ſeeded.

SPECIES.

1. Cratægus Aria. *White Beam tree.*
Lin. ſpec. 681. *Reich.* 2. 491. *hort. cliff.* 187. *mat. med.* 126. *Hudſ. angl.* 214. *With.* 510. *Lightf.* 255. *Pollich. pal. n.* 470. *Oeder. dan. t.* 302. *Hunt. evel. ſylv.* 181. *Plenck, ic. t.* 387. *Pallas roſs.* 1. 24. *Villars dauph.* 3. 538. *Krock. ſileſ. n.* 753.
Meſpilus. *Hall. helv. n.* 1089.—Aria *Scop. carn. n.* 591. *Allion. pedem. n.* 1805. *Raii ſyn.* 453.
Sorbus Aria. *Crantz. auſtr.* 1. *faſc.* 1. *t.* 2. *f.* 2. *Mill. illuſtr.*—alpina. *Bauh. hiſt.* 1. 65. *Raii hiſt.* 1459. & S. ſylveſtris anglica. *Park. theat.* 1421.
Aria. *Dalech. hiſt.* 202. *Ger.* 1146. 2. *emac.* 1327. 2.
Alni effigie, lanato fol. major. *Bauh. pin.* 452.
C. Aria indiviſa. *Ait. hort. kew.* 2. 167. α.
β. Cratægus ſuecica.
Linn. lap. 199. *fl. dan. t.* 301. *Ait. hort. kew.* 2. 167. β. *Hall. helv.* β. *Pollich. pal.* β.
Unarmed; leaves ovate gaſhed ſerrate, tomentoſe underneath.

2. Cratægus torminalis. *Wild Service* or *Sorb. Maple-leaved Service.*
Lin. ſpec. 681. *Reich.* 2. 492. *hort. cliff.* 187. *Hudſ. angl.* 214. *With.* 511. *Jacqu. auſtr.* 5. *t.* 443. *Weigel. rug. n.* 312. *Pollich. pal. n.* 471. *Fl. dan. t.* 798. *Krock. ſileſ. n.* 754. *Hunt. Evel.* 182. *Duham. arb.* 1. *t.* 79. *Plenck, ic. t.* 388. *Pallas roſs.* 1. 24. *Villars dauph.* 3. 540.
Meſpilus. *Hall. helv. n.* 1088. *Bauh. pin.* 454. *n.* 7. *Raii hiſt.* 1457. *ſyn.* 453.—torminalis. *Allion. pedem. n.* 1806.
Sorbus torminalis. *Crantz. auſtr.* 85. *n.* 2. *Bauh. hiſt.* 1. 63. *Cam. epit.* 162. *Lob. ic.* 2. 100. *Ger.* 1287. 2. *emac.* 1471. 2. *Park. theat.* 1420. 2. *Edw. birds.* 212. (*Blackw. t.* 173. is Sorbus aucuparia.)
β. C. alpina. *Mill. dict. n.* 3.
C. fol. oblongo ſerrato utrunque virenti. *Tourn. inſt.* 633.
Unarmed; leaves ſmooth ſeven-angled, the loweſt lobes divaricate; calyxes villoſe.

3. Cratægus coccinea. *Great American Hawthorn.*
Lin. ſpec. 682. *Reich.* 2. 492. *mant.* 397. *hort. cliff.* 187. *upſ.* 126. *Gron. virg.* 54. *Duham. arb.* 12.
Meſpilus. *Bauh. pin.* 453. 4. *Pluk. alm. t.* 46. *f.* 4. *Angl. hort.* 49. *t.* 13. *f.* 1?
Oxyacantha. *Raii hiſt.* 1799. 10.
Thorny; leaves cordate-ovate, gaſh-angled, ſmooth; petioles and calyxes glandular; flowers five-ſtyled.

[4. Cratægus viridis. *Green-leaved Virginian Hawthorn.*
Lin. ſpec. 683. *Reich.* 2. 493. *Medic. Lutr.* 1774. *p.* 288.
Meſpilus. *Gron. virg.* 163. 76.
Unarmed; leaves lanceolate-ovate ſubtrilobate ſerrate ſmooth.

5. Cratægus punctata. *Great-fruited Hawthorn.*
Lin. ſyſt. 465. *Jacqu. hort.* 1. 10. *t.* 28. *Ait. hort. kew.* 2. 169.
α. With red fruit.
β. With yellow fruit.
Thorny or unarmed; leaves obovate wedge-form ſmooth ſerrate; calyxes ſubvilloſe, leaflets ſubulate entire.]

6. Cratægus Crus galli. *Cockſpur Hawthorn.*
Lin. ſpec. 682. *ſyſt.* 465. *Reich.* 2. 493. *Kalm. itin.* 1. 244. *edit. angl.* 115.
Meſpilus. *Pluk. alm. t.* 46. *f.* 1. *Clayton. virg.* 55. *Hort. angl. t.* 13. *Duham. arb.* 17. *Mill. fig. t.* 178. *f.* 2.
α. Fol. obovato-cuneiformibus. *Common C. H.*
Leaves obovate-wedge-form.
β. Fol. oblongo-lanceolatis ſubcuneiformibus.]
Leaves oblong-lanceolate, nearly wedge-form.
Pyracantha-leaved C. H.
γ. Fol. lanceolatis.—*Willow-leaved C. H.*
Leaves lanceolate.
Thorny; leaves ſubſeſſile glittering coriaceous; calycine leaflets lanceolate ſubſerrate; flowers two-ſtyled.

7. Cratægus tomentoſa. *Woolly-leaved Hawthorn.*
Lin. ſpec. 682. *ſyſt.* 465. *Reich.* 2. 493.
Meſpilus. *Gron. virg.* 55. *Pluk. phyt. t.* 100. *f.* 1. *Trew. ehret. t.* 17.
Branches thorny; leaves wedge-form-ovate ſerrate, ſomewhat angular villoſe underneath.

[8. Cratægus indica. *Indian Hawthorn.*
Lin. ſpec. 683. *Reich.* 2. 494. *Lour. cochinch.* 319. *Burm. ind.* 117.
Unarmed; leaves lanceolate ſerrate; corymbs ſcaly.]

9. Cratægus Oxyacantha. *Common Hawthorn* or *Whitethorn.*
Lin. ſpec. 683. *Reich.* 2. 494. *fl. ſuec. n.* 434. *Hudſ. angl.* 214. *Lightf.* 255. *Relh. cant. n.* 359. *Neck. gallob.* 216. *Pollich. pal. n.* 472. *Jacqu. auſtr.* 3. *t.* 292. *f.* 2. *Fl. dan. t.* 634. *Villars dauph.* 3. 539. *Krock. ſileſ. n.* 755. *Black. t.* 149. *Duham. arb.* 2. 193. *t.* 79. *Hunt. evel.* 2. 93. *Plenck, ic. t.* 389.
Meſpilus. *Hall. helv. n.* 1087.—Oxyacantha. *Scop. carn. n.* 590. *Allion. pedem. n.* 1807.
α. C. vulgaris. *Common.*
M. apii folio ſylv. ſpinoſa, ſ. Oxyacantha. *Bauh. pin.* 454. *Raii ſyn.* 453.
Oxyacanthus. *Ger.* 1146. 1. *emac.* 1327. 1. *Raii hiſt.* 1458.
O. ſ. Spina acuta. *Dod. pempt.* 751. *Matth.* 163.
Spina appendix vulgaris. *Park. theat.* 1025.
β. C. major. *Great-fruited.*
Meſp. apii fol. ſylv. ſpin., folio & fructu majore. *Raii ſyn.* 454. *Hudſ.* β. *With.* β.
γ. C. præcox. *Glaſtenbury.*
Raii hiſt. 1458. 2. *With.* 6.
δ. C. plena. *Double-flowered.*
ε. C. flava. *Yellow-berried.*
Raii hiſt. 1458. 1. *With.* 3.
ζ. C. alba. *White-berried.*
Raii hiſt. 1459. *ſyn.* 453. *With.* 4.
η. C. inciſa. *Fine-leaved.*
M. apii fol. &c.—foliis tenuius inciſis. *Raii ſyn.* 454. *Relh.* 190. *With.* 5.
Leaves obtuſe ſubtrifid ſerrate.

10. Cratægus monogyna.
Lin. ſyſt. 465. *Wither. arr.* 511. *Jacqu. auſtr.* 3. *t.* 292. *f.* 1. *Pallas. fl. roſs.* 1. 1. 26. *t.* 12. *Allion. pedem. n.* 1808.
Leaves ſubtrifid acute, lobes ſpreading, quite entire below; flowers one-ſtyled.

11. Cratægus Azarolus. *Parſley-leaved Hawthorn,* or *Azarole.*
Lin. ſpec. 683. *Reich.* 2. 495. *Plenck, ic. t.* 390. *Pallas roſs.* 1. 27. *Villars dauph.* 3. 540.
Pyrus Azarolus. *Scop. carn. n.* 597.
Meſpilus Azarolus. *Allion. pedem. n.* 1809.
Meſpilus apii fol. laciniato. *Bauh. pin.* 453.
M. Aronia. *Bauh. hiſt.* 1. 67. *Raii hiſt.* 1458. *Ger.* 1265. *emac.* 1454.
Azerolier. *Duham. arb.* 1. 323. *t.* 1. 334.
β. C. Aronia. *Lin. ſpec.* β.

Meſpilus orientalis, apii fol. ſubtus hirſuto. *Pocock. orient.* 189. *t.* 85.
Leaves obtuſe ſubtrifid ſomewhat toothed.

[12. Cratægus maura.
Lin. ſyſt. 465. *ſuppl.* 253.
Leaves oblong, toothed at the end.

13. Cratægus villoſa.
Lin. ſyſt. 465. *Thunb. jap.* 204.
Leaves oblong acuminate ſmooth ſerrate, flowers in a compound umbel.

14. Cratægus lævis.
Lin. ſyſt. 465. *Thunb. jap.* 204.
Leaves ovate acuminate ſmooth ſerrate, flowers in an almoſt ſimple umbel.

15. Cratægus glabra.
Lin. ſyſt. 465. *Thunb. jap.* 205.
Leaves oblong acute ſmooth ſerrate, flowers in a compound panicle.]

16. Cratægus cordata. *Maple-leaved Hawthorn.*
Ait. hort. kew. 2. 168.
Meſpilus cordata. *Mill. dict. n.* 4. *fig. t.* 179.
M. Phoenopyrum. *Lin. ſuppl.* 254.
Thorny; leaves cordate-ovate gaſh-angled ſmooth, petioles and calyxes without glands, flowers five-ſtyled.

[17. Cratægus pyrifolia. *Pear-leaved Hawthorn.*
Ait. hort. kew. 2. 168.
C. Leucophleos. *Moench. hort. weiſſenſt.* 31. *t.* 2.
Thorny or unarmed; leaves ovate-elliptic gaſh-ſerrate, ſomewhat plaited and hirt, calyxes a little villoſe, leaflets linear-lanceolate ſerrate, flowers three-ſtyled.

18. Cratægus elliptica. *Oval-leaved Hawthorn.*
Ait. hort. kew. 2. 168.
Thorny; leaves elliptic unequally ſerrate ſmooth, petioles and calyxes glandular, berries globular five-ſeeded.

19. Cratægus glanduloſa. *Hollow-leaved Hawthorn.*
Ait. hort. kew. 2. 168.
Thorny; leaves obovate-wedgeform angular ſmooth glittering; petioles ſtipules and calyxes glandular; berries oval five-ſeeded.

20. Cratægus flava. *Yellow pear-berried Hawthorn.*
Ait. hort. kew. 2. 169. *Moench. hort. weiſſenſt.* 62. *t.* 4.
Thorny; leaves obovate-wedgeform angular ſmooth glittering; petioles ſtipules and calyxes glandular; berries turbinate four-ſeeded.

21. Cratægus parvifolia. *Gooſeberry-leaved Hawthorn.*
Ait. hort. kew. 2. 169.
C. uniflora. *Du Roi hort. harbecc.* 1. 184.
Meſpilus. *Mill. dict. edit.* 7. *n.* 17.
Thorny; leaves wedgeform-ovate gaſhed ſerrate; calycine leaflets gaſhed, the length of the fruit, flowers five-ſtyled.

22. Cratægus ſanguinea.
Pallas fl. roſs. 1. 25. *t.* 11.
Thorny; leaves ſeven-angled ſerrate, produced at the baſe, petioles ſubmarginate.

23. Cratægus Bibas.
Lour. cochinch. 319. *Pluk. amalth.* 26. *t.* 371. *f.* 2. (Pi-pa.)
Unarmed; leaves lanceolate ſerrate tomentoſe; racemes terminating hiſpid.

DESCRIPTIONS, &c.

This genus conſiſts chiefly of Shrubs or Trees, hardy and deciduous. Leaves ſimple, undivided or lobed. Peduncles in moſt ſpecies many-flowered corymbed terminating, and ſolitary from the axils; in a few one-flowered axillary, and in terminating ſpikes[a]. Corollas white, appearing in may and june, ſucceeded by bunches of red berries in autumn.]

1. This tree riſes to the height of thirty or forty feet, with a large trunk, dividing into many branches; the young ſhoots have a brown bark, covered with a mealy down; the leaves are between two and three inches long, and one inch and a half broad in the middle, of a light green on their upper ſide, but very white on their under, having many prominent tranſverſe veins, running from the mid-rib to the border, where they are unequally ſerrate, ſome of the teeth being much deeper, and the ſegments broader than others. The flowers are produced at the ends of the branches in bunches [or corymbs, two inches or more in diameter, and very much branched. The peduncles are tomentoſe, and have a lanceolate caducous bracte. Calyx tomentoſe, divided into five, ſometimes ſix, reflex ſegments. Petals five, ſometimes ſix, frequently ſcalloped at the end, woolly at the baſe, white. Filaments ſometimes as many as twenty-one. Styles two or three (two to four, with as many ſeeds. *Du Roi.* four or five. *Duham.*) woolly at the baſe. Berries ſomewhat tomentoſe, red, containing from two to four ſeeds[b]: four, in each cell two, according to *Crantz.*—or, as Scopoli ſays, two cells with one ſeed in each, or one with two ſeeds.]

Native of moſt parts of Europe: chiefly on dry hills and open expoſures, in gravel, clay or chalk, and from the fiſſures of lime-ſtone rock.—With us in the northern, weſtern, and ſouthern parts of the iſland; in Derbyſhire, Norwood near London, and formerly on Hamſtead heath, &c. Flowering in may.

Mr. Miller ſays it is called *White Leaf tree.* According to Mr. Ray, in Worceſterſhire and Staffordſhire, in Lancaſhire and Weſtmoreland it has the names of *Red Cheſs-Apples* and *Sea Owlers.* In Derbyſhire, they call it the *Wild Pear-tree.* Gerarde calls it *Cumberland Hawthorn.* In German it is named *Mehlbeerbaum* or *Mehlbaum*; in Daniſh, *Axelbær*; in Swediſh, *Oxel*, *Oxeltraed* or *Oxelbaer*; in French, *Alizier*; in Italian, *Aria* or *Sorbo peloſo*; in Spaniſh, *Moſtaco.*

The wood, being hard, tough and ſmooth, is uſed for axle-trees, wheels, walking-ſticks, and the handles of tools. The fruit is eatable when mellowed by the autumnal froſts, and an ardent ſpirit may be diſtilled from it[c].

The ſtraight handſome growth of the tree, the ſmoothneſs of the bark, the extreme whiteneſs on the under ſurface of the leaves, the handſome bunches of white flowers on their mealy peduncles, ſucceeded by red berries, render this a deſirable tree to mix with others in ornamental plantations. It bears lopping, and permits graſs to grow under it.

β. The Swediſh variety has the leaves deeply ſinuated, pinnatifid, and even pinnate. The Britiſh tree never is ſo. Haller remarks that the fruit of this is bitter.—It alſo varies with leaves not tomentoſe or white underneath; in the variety the peduncles, fruit, &c. are deſtitute of nap.]

2. This riſes to the height of forty or fifty feet, with a large trunk, ſpreading at the top into many branches, ſo as to form a large head. The young branches are covered with a purpliſh bark, marked with white ſpots. Leaves alternate, on pretty long foot-ſtalks, cut into many acute angles, like thoſe of the Maple-tree; they are near four inches long, and three broad in the middle, having ſeveral ſmaller indentures towards the top; they are of a bright green on their upper ſide, but a little woolly on their under. The flowers are produced in large bunches towards the end of the branches; they are white, and ſhaped like thoſe of the Pear-tree, but ſmaller, and on longer peduncles: they appear in may, and are ſucceeded by roundiſh compreſſed fruit, ſhaped like common Haws, but larger; ripening in autumn, when they are of a brown colour, and if kept till they are ſoft, in the ſame way as Medlars, have an agreeable acid flavour.

[Styles, according to Haller, two or three, ſo glued together as to ſeem but one. Seeds two to four; as Crantz ſays, in two cells.]

The wood of this tree is hard and very white; it is uſeful for many purpoſes, particularly in mill-work. The fruit is ſold in the London markets in autumn.

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[a] Juſſieu.

[b] Pollich.

[c] Withering.

[Native of Denmark, Germany, Auſtria, Switzerland, Burgundy, Piedmont,] England, in many parts, chiefly upon ſtrong ſoils. In Caen-wood and Biſhop's-wood near Hamſtead, in Hertfordſhire, &c.

β. The alpine variety, which Miller makes a diſtinct ſpecies, is about twenty feet high. Leaves oblong-ovate, ſlightly ſerrate, on very ſhort footſtalks, about three inches long, and one inch and a half broad, leſſening towards both ends, deep green on both ſides. Flowers in ſmall bunches, rarely more than four or five flowers in each. Fruit the ſize of the common Haw, but dark brown. Native of monte Baldo, and other mountains of Italy.

3. This riſes to the height of near twenty feet in England, with a large upright trunk, dividing into many ſtrong, irregular, ſmooth branches, ſo as to form a large head. Leaves large [and bending backwards; they are about four inches long, and three and a half broad, have five or ſix pairs of ſtrong nerves, and become of a browniſh red in autumn.] The flowers come out from the ſide of the branches in large cluſters; they are large, make a noble ſhow in may, and are ſucceeded by large pear-ſhaped fruit of a bright ſcarlet colour, which ripens in ſeptember.

[Branches marked with irregularly ſcattered dots. Thorns axillary, ſtout, ſpreading very much, from the rudiments of the branches. Peduncles pubeſcent, corymbed. Native of Virginia and Canada[d]. Cultivated 1696, by Mr. Jacob Bobart[e].

4. This is probably a variety of the foregoing. Theſe North American ſpecies vary much in having thorns or none, in the number of the ſtyles, and form of the leaves.

5. Branches diffuſe, no thorns, leaves obovate, acute, unequally double-ſawed, very ſmooth on both ſides. Stipules linear, ciliate-ſawed, caducous. Racemes compound, moſt of the partial ones trifid. Styles two or three. Fruit orange-red, dotted with brown, whitiſh within; ſtones very hard, the ſame number with the ſtyles. Native of America[f].

Cultivated 1746, by Archibald Duke of Argyle[g].

6. Stem ſtrong, ten or twelve feet high; bark of the ſtem rough, of the branches ſmooth and reddiſh. Leaves lanceolate, three inches long, and one inch broad in the middle, ſerrate, of a lucid green, alternate; at many of the joints are ſmaller leaves in cluſters: thorns axillary, very ſtrong, two inches in length. Flowers axillary, in roundiſh cluſters, generally two together; petals white, with a bluſh of red. Stamens ten; anthers bright red. Styles three. Fruit globular, of a fine red colour. It flowers in june[h].

Native of North America. Mr. Miller ſays, that the fruit was ſent to him from Philadelphia.

Cultivated 1691, by the hon. Charles Howard[i].]

7. This has a ſlender ſhrubby ſtem, about ſix or ſeven feet high, ſending out many irregular branches, armed with long ſlender thorns. The flowers are ſmall, proceeding from the ſide of the branches, ſometimes ſingle, and at other times two or three upon the ſame peduncle, having large leafy calyxes, and being ſucceeded by ſmall roundiſh fruit. The flowers appear at the beginning of june, and the fruit ripens very late in the autumn.

Native of North America.

[There is a variety of this, called in the nurſeries Carolina Hawthorn, which has longer and whiter leaves, larger flowers and fruit, but no thorns[k].

8. A large tree, without thorns. Leaves broad-lanceolate, obtuſely ſerrate, thickiſh, petioled. Corymbs terminating, with ſcaly peduncles and ſubulate bractes[l]. Styles two. Berries roundiſh, containing from two to four ſeeds[m]. Native of the Eaſt Indies, and Cochinchina.

The wood is reddiſh, heavy and tough; it is fit for oars and other uſes that require toughneſs[n].

9. Styles two, ſometimes three or four. Seeds uſually two, but ſometimes one, three, or four[o].

10. There is ſuch uncertainty in the number of ſtyles in this genus, that we can hardly conſider the *monogyna* of Jacquin as a diſtinct ſpecies. Our Britiſh ſhrub is ſuppoſed to be this, and not the *C. Oxyacantha* of Linneus and others. Yet Mr. Lyons has obſerved that the ſtyle at firſt ſimple, is afterwards divided into two; and Dr. Withering obſerved two ſtyles in one plant.

Mr. Lyons thus deſcribes our ſhrub.—Trunk aſcending, round, very much branched. Bark ſmooth. (At the baſe of each petiole two ſemiorbicular ſtipules, deeply toothed, acuminate at top.) Thorns ſharp, (coming out from between the ſtipules.) Leaves trifid, petioled, decurrent, ſharp at the baſe, ſhining, the middle ſegment trifid, very entire about the edge, (commonly in the upper floral leaves, but ſerrate in the branch leaves.) Peduncles branched, with two or three flowers on each diviſion. Calyx hirſute, having five reflex, acute ſegments. Petals wrinkled on the edge. (Stamens ſixteen.) Anthers red[p].

Scopoli ſays that he has examined thouſands of fertile flowers, and that he conſtantly obſerved one ſtyle, and one ſtone. Villars affirms that he has rarely ſeen two ſtyles. Scopoli remarked ſome barren flowers to be digynous or ſemidigynous. D'Aſſo ſays that the Hawthorn is conſtantly monogynous in Spain.

According to Allioni, C. monogyna has the leaves more ſhining, extremely ſmooth, deeply cut into three or five lobes; the peduncles ſmooth, the ſegments of the calyx reflex; and one ſeed only conſtantly in the fruit.

The common Hawthorn and its varieties flower uſually in may. In 1783 the Hawthorn began to flower on the 21ſt of march; the year following it was ſix weeks later. It was almoſt as early in 1794, and as late in 1795. The extremes of flowering in Mr. White's calendar are from april 20th to june 11th. Some flowers yet remain on the buſhes the 20th of june 1795, the day on which I have written the above.

The Glaſtenbury variety flowers uſually in january or february, ſometimes earlier, ſo that it may happen to be in flower on Chriſtmas day. Dr. Stokes ſuſpects this to be C. Oxyacantha of Linneus.

Few trees exceed the Hawthorn in beauty during the ſeaſon when it is in bloom. It is proper therefore for ornamental plantations, and particularly to ſtand ſingle in lawns or parks, where it will grow to the height of twenty or even thirty feet; the trunk ſometimes meaſuring from five to nine feet in circumference[q]. The wood is tough, and may be uſed for axle-trees and the handles of tools. The root of an old thorn, ſays Evelyn, is excellent both for boxes and combs: when planted ſingle, it riſes with a ſtem big enough for the uſe of the turner, and the wood is ſcarcely inferior to box. A decoction of the bark yields a yellow dye; and with copperas is uſed to dye black. The berries are the winter food of the Thruſh and many other birds; ſwine alſo and deer are fond of them. The peaſants in many countries eat them, and in Kamſchatka they alſo make a wine of them[r].

It is well known that the White-thorn makes the beſt quick or live fences. See HEDGES.

In German it is named *Hagedorn*; in Daniſh, *Hagetorn*; in Swediſh, *Hagtorn*: whence our *Hawthorn*; the fruit being called *Haws*. It is called alſo in Engliſh, *White-thorn*; and of ſome Londoners, ſays Gerarde, *May-buſh*: when uſed for hedges, *Quick*. In French, *Aubepine*, or *Epine blanche*; in Italian, *Biancoſpino*; in Spaniſh, *Eſpino blanco*.

Of the Varieties:

β. The fruit of the ſecond is exceedingly large, oblong, ſmooth and bright ſcarlet.—ε. The Yellow has the buds at their firſt appearance in the ſpring of a fine yellow, and the fruit is of a golden colour. It is a great bearer, and retain its fruit all winter. It was originally brought from Virginia.—ζ. The White is but a paltry tree.—δ. The Double-bloſſomed is one of the greateſt ornaments of our ſhrubberies, and may be kept down to any ſize. The beautiful flowers come out in large bunches in may, and the ſhrub often appears covered with them: they are at firſt of a pure white, and die to a faint red: they are frequently ſucceeded by ſmall imperfect fruit[s].

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[d] Linn. mant.
[e] Hort. kew.
[f] Jacquin.
[g] Hort. kew.
[h] Mill. fig.
[i] Hort. kew. from Pluk.
[k] Hunter's Evelyn.
[l] Linn. ſpec.
[m] Loureiro.
[n] Ibid.

[o] Haller, Jacqu. & Du Roi.
[p] Relh. cant.
[q] Boutcher.
[r] Lightfoot.

Pallas has deſcribed and figured another variety under the name of *C. monogyna nigra*, the berries of which finally turn black.]

11. This has a ſtrong ſtem twenty feet high, having many ſtrong irregular branches, covered with a light-coloured bark; the leaves are in ſhape ſomewhat like thoſe of the common Hawthorn, but they are much larger, have broader lobes, and are of a paler colour; the flowers come out in ſmall cluſters from the ſide of the branches, and are in ſhape like thoſe of the common Hawthorn, but much larger; as is alſo the fruit, which when fully ripe has an agreeable acid taſte, for which it is eſteemed in Italy and the Levant, where it is ſerved up in the deſert.

[It ſeems to differ from common Hawthorn (n. 9.) only in the ſize, as *Sorbus domeſtica* from *ſylveſtris*; in this all the parts are four times the ſize of the other; there are few thorns, or even none in the cultivated plant[t]. The fruit has five cells as in the pear[u].

Native of the ſouth of Europe, the Levant, &c. Cultivated 1656, by Mr. John Tradeſcant[x].

12. Stature and appearance of *C. Oxyacantha.* Bark aſh-coloured. No ſpines. Leaves oblong or ſublanceolate, obtuſe, gloſſy, three or five-toothed at the end; the teeth acute. Flowers in branched corymbs, reſembling thoſe of common Hawthorn. Native of Barbary[y].

13. Leaves alternate, petioled, ovate-oblong, veined, villoſe, two inches long. Petioles round, ſmooth, ſcarcely half an inch in length. Flowers terminating, in a compound umbel. Peduncles about ſix, pedicels three or four, all filiform, tubercled, villoſe, an inch in length. Styles two. Fruit villoſe[z].

14. Stem ſmooth. Branches and branchlets alternate, aſh-coloured, ſpreading. Leaves from alternate buds three or four, petioled, very finely ſerrate, plane, thin, ſpreading very much, unequal, an inch in length. Flowers terminating, ſpreading very much. Umbel generally ſimple, but ſometimes with one trifid or racemed ray. Peduncles capillary, callous, an inch long. Perianth only half the length of the corolla. Petals ovate, entire, white, a line long. Stamens ſhorter than the corolla. Styles two.—It differs from the foregoing, in having leaves broader in the middle, drawn more to a point at both ends, aggregate, not ſolitary; and in the umbel being almoſt ſimple[a].

15. Branches and branchlets ſubverticilled, ſtriated, ſmooth, ſpreading. Leaves ſcattered, petioled, a little reflected on the edge, perennial, veined, paler underneath, ſpreading very much, of a finger's length. Petioles angular, grooved, ſmooth, ſpreading. Flowers terminating, in a ſubfaſtigiate panicle. Peduncles angular, ſmooth; the pedicels gradually ſhorter, and more approximating. Perianth five-toothed, ſmooth, half the length of the corolla. Petals obovate, obtuſe, entire, white, villoſe at the baſe, ſpreading. Filaments the length of the corolla; anthers globular, twin. Styles two.—It differs from the two foregoing in having oblong, not ovate leaves, thicker and evergreen; petals villoſe at the baſe; and a large compound panicle[b].—Theſe three were found in Japan, by Chevalier Thunberg. This is a tree, and the two former ſhrubs.

16. Riſes with a ſtrong woody ſtem about four feet high, ſending out many ſpreading branches; which incline to a horizontal poſition. Leaves different in form, ſome indented at the petiole, others not; they are about an inch and half long, and nearly of the ſame breadth in the middle, ending in acute points, and their borders cut into ſeveral acute parts, which are ſharply ſerrate; they are of a bright green, and ſtand on very ſlender petioles, about an inch in length. The branches are armed with a few pretty long ſlender ſpines. The flowers come out in ſmall bunches from the ſide of the branches. Stamens eight. Styles four. Fruit round, containing two ſeeds[c].

Branches ſpotted with white. Leaves cut into three, five or ſeven ſegments, acuminate, the ſize of Birch-leaves. Petiole very ſlender, ſhorter than the leaves. Corymb compound. Bractes at the baſe of the peduncles, ſolitary, ſubulate, very ſmall, deciduous. Flower ſomewhat ſmaller than the common Whitethorn. Teeth of the calyx very ſhort, obtuſe, falling off when the fruit is ripe. Styles five. Fruit an oblate ſpheroid, ſcarlet, the ſize of a red Currant; the navel looſe, naked. Stones five, the tops filling up the navel, and naked. It flowers the laſt of the genus[d].

This ſort was raiſed in the Chelſea garden in 1738, from ſeeds which came from North America, by the title of *New Haw.*—It flowers the latter end of june, and the fruit ripens in the autumn[e].

17, 18. Natives of North America. Introduced 1765, by Meſſrs. Kennedy and Lee[f].

19. This has very ſtout thorns. It flowers in may and june; is a native of North America; and was cultivated in 1750, by Archibald Duke of Argyle[g].

20. There are often ſmall leaves on the thorns, which in this and the following ſpecies are ſlender, and a little bent in at the end. This flowers in may; is a native of North America; and was cultivated in 1758, by Mr. Miller[h].]

21. This is a ſhrub of humble growth, ſeldom riſing more than ſix or ſeven feet, ſending out a great number of ſlender branches, which are interwoven, and armed with very long ſlender ſharp thorns. The leaves are ſcarcely one inch long, and ſome are not more than half an inch broad, but others are almoſt as broad as they are long; they are ſerrate, and have very ſhort foot-ſtalks. The flowers are produced at the end of the branches, generally one coming out from between the leaves; but ſometimes there are two or three, one below the other at the axils; they have large leafy calyxes, much longer than the petals; they are ſmall, have twelve or more ſtamens, and four ſtyles. The fruit is ſmaller than that of the common Hawthorn, and is of an herbaceous yellow colour, when ripe. The ſeeds were ſent from Virginia by Baniſter, and ſome of the plants were raiſed in Biſhop Compton's garden at Fulham before 1713, and afterwards by Archibald Duke of Argyle at Whitton. It is generally known by the name of Lord Iſlay's Hawthorn, and flowers in may and june.

[22. Height frequently from two to three fathoms. Trunk the thickneſs of the human arm or thigh, very much branched from the bottom, and ſpreading. Branches ſometimes unarmed, but ſometimes armed with long and very ſpreading thorns, covered with a bark of a reddiſh teſtaceous colour, with aſh-coloured ſpots here and there. The bark of the trunk is of a brown teſtaceous colour, thin, and peeling off in aſh-coloured ſcales. Leaves alternate, ſuborbiculate, more or leſs acute, and produced at the baſe, running down unequally into the petiole, three times gaſhed at the edge on each ſide, and unequally ſerrate; the veins underneath ſubferruginous, and the whole lower ſurface pubeſcent. Petioles ſhort, pubeſcent. Stipules lanceolate, ſerrate, ſhrivelling. Flowers in corymbs at the ends of all the branchlets; theſe are ſo abundant, that the tree is very handſome when in flower and fruit. Peduncles ſmooth, with ſlender, linear bractes, that fall off at flowering time. Corollas rather large, nearly the ſame ſize as in *C. coccinea.* Styles two or three, very frequently four. Stamens about ſeventeen; anthers purple, twin. Fruit large, very red, ſubglobular, two-celled, two or four-ſeeded. It flowers at the end of may; the fruit ripens at the end of auguſt, and after the firſt froſts in ſeptember becomes very eatable. The leaves acquire a ferruginous tinge at the beginning of winter.

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[s] Hunter.
[t] Linn. ſpec.
[u] Scopoli.
[x] Hort. kew.
[y] Linn. ſuppl.
[z] Thunberg.
[a] Ibid.
[b] Ibid.
[c] Mill. fig.
[d] Linn. ſuppl.
[e] Mill. fig.
[f] Hort. kew.
[g] Ibid.
[h] Ibid.

This has broader leaves than *C. Oxyacantha*, and of a different form, the ſtipules lanceolate, and all the parts of fructification large. It differs from *C. coccinea* in having the leaves pubeſcent, produced at the baſe, on ſhorter petioles without any glands, and ſmaller flowers.

Native of Siberia; and perhaps the Cratægus of Kamtſchatka[i].

23. This is a middle-ſized tree, with ſpreading branches. Leaves unequally ſerrate, ſcattered, on ſhort petioles. Flowers white, in large bunches. Styles two. Fruit middle-ſized, pear-ſhaped, yellow, lanuginoſe, of a ſweet acid flavour, juicy, eatable; the ſkin thin, the pulp white; one-celled, containing two or three ſeeds.—Cultivated abundantly about Macao and Canton in China[k].]

PROPAGATION AND CULTURE.

1. The White Beam tree may be propagated by ſeeds, which ſhould be ſown ſoon after they are ripe; for if they are kept out of the ground till ſpring, they remain at leaſt one year in the ground before the plants appear; ſo that the fruit ſhould be buried in the ground, as is practiſed with the common Haws, Holly-berries, and thoſe other hard ſeeds which do not come up the ſame year; and when the plants come up, they may be treated in the ſame manner as the Haws, but they ſhould by no means be headed or cut down. On a poor chalky ſoil they make great progreſs, and the wood is very white and hard.

It may alſo be propagated by layers in the ſame manner as the Lime and Elm, but theſe ſhould be laid in the young wood: two years elapſe before they have ſufficient roots to tranſplant. It may alſo be raiſed from cuttings planted in autumn in a ſhady border, but not an eighth part will ſucceed. Trees raiſed from ſeeds grow much larger and ſtraighter, than from layers or cuttings.

This tree will take by grafting or budding upon Pear-ſtocks very well, and Pears will take by grafting upon this. Although both theſe will ſometimes take upon the Meſpilus, yet neither of them thrive ſo well, or laſt ſo long, as when they are grafted or budded upon each other.

2. The Wild or Maple-leaved Service may be propagated in the ſame way, but requires a ſtrong ſoil.

3 to 7. and 16 to 21. All the ſorts of American Hawthorn may be raiſed from ſeeds ſown in autumn, in the ſame manner as the firſt ſort, or as the common Hawthorn: but as theſe ſeeds being brought from America, frequently do not arrive here till ſpring, the fruit may be buried in the ground till the autumn following, when they may be taken up and ſown in drills, being careful to cover them ſo as to prevent birds from deſtroying them. In the ſpring following the plants will come up, which ſhould be moderately watered two or three times a week, if the ſpring ſhould prove dry; during the ſummer, they muſt be kept clean from weeds, which if ſuffered to grow, will ſoon overbear the plants and deſtroy them. The following ſpring the plants ſhould be planted out before they begin to ſhoot, into a nurſery-bed, where they may grow two years to get ſtrength, when they may be tranſplanted where they are to remain. If theſe are planted in a moiſt light ſoil, their roots will extend to a conſiderable diſtance, and put up many ſhoots, which may be taken off in the ſpring, and thereby may be increaſed; theſe will alſo take if grafted on the Pear, and if the young branches are laid down, they will take root.

The ſeveral ſorts of Hawthorn are generally planted among flowering ſhrubs of the ſame growth, where they add to the variety.

The varieties of the Hawthorn are continued by budding upon ſtocks of the common ſort. The ſame method alſo is commonly practiſed for ſeveral of the ſpecies. See INOCULATING.—The largeſt and moſt beautiful plants however are raiſed from ſeed.

[*White-thorn, Haw-thorn,* or *Quick.*

9, 10. The moſt uſual practice, in raiſing the White-thorn, is to ſow the berries, either in october or november, or elſe very early in the ſpring; either broadcaſt or in drills, in beds about four feet wide, with alleys eighteen inches wide between each; covering the berries an inch deep, with freſh light mould. Thus, though moſt of them ſhould not come up till the ſecond ſpring, yet they will have the continual benefit of the ſun, air, and rain; all which, it may be preſumed, will make them come up better and ſhoot ſtronger, than when they are buried in a heap during more than a year.

The latter method however is preferred by many: I have therefore ſubjoined Mr. Boutcher's practice, eſpecially as it contains ſome uſeful directions on this ſubject.

The Haws ſhould remain on the buſhes till the end of october, when they become blackiſh. If you do not ſow them immediately, as ſoon as they are gathered, ſpread them on an airy floor for five or ſix weeks, till the ſeeds are dry and firm; then plunge them into water, and diveſt them wholly of their pulp, by rubbing them between your hands with a little ſand: ſpread them again on the loft three or four days, till quite dry, mix them with fine looſe ſandy mould, in quantity not leſs than the bulk of the ſeeds, and lay them in a heap againſt a ſouth wall, covering them over three or four inches deep with ſoil of the ſame quality as that with which they are mixed. If you do not ſow them in the ſpring, in this ſituation let them remain till the ſecond ſpring, as the ſeeds, if ſown, will not appear the firſt year.

That the berries may be as equally mixed with the ſoil as poſſible, turn over the heaps once in two months, blending the covering with the ſeeds; and at every turning, give them a freſh covering in the winter months.

They muſt be ſowed the firſt dry weather in february, or the beginning of march. Separate them from the looſe ſoil in which they were mixed, with a wire ſieve. The ground ſhould be good dry freſh land, well prepared. Divide it into beds three feet and a half broad, with alleys of eighteen inches. Puſh over a little of the ſurface of the beds into the alleys; ſow them with great care, ſo that they may not riſe in cluſters, and that the plants may in general be at leaſt an inch aſunder. Clap them into the earth with the back of a ſpade, draw the ſoil back from the alleys, and let not the ſeeds be covered more than half an inch deep. The ſucceeding ſpring, draw out all the largeſt plants where too thick; ſhorten their roots; lay them in lines a foot aſunder, and four inches diſtant in the rows, having cut off ſo much of their tops as to leave them about two inches above ground; and let them remain two years.

Thoſe who are not ſtraitened for ground, may drop the ſeeds in drills eight inches aſunder, and double that diſtance between each pair of drills. The following ſpring they may be drawn where too thick, and the remainder cut with a ſpade, five or ſix inches below ground; to remain another year.

Thorns alſo may be propagated to much advantage, and two years time ſaved, by cuttings from their roots. For this purpoſe, at removing a nurſery of theſe plants, cut off all unneceſſary roots that are ſtraight and clean, of one or not more than two years growth; let them not exceed the length of four or five inches; and either early in october or february, lay them in drills cut out with the ſpade, with their tops a quarter of an inch below the ſurface: let theſe drills be a foot aſunder, and lay the roots three or four inches ſeparate. The following ſpring they ſhould be cut within three or four inches of the ſurface. In general they will be eighteen inches high, and well rooted, at two years old.

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[i] Pallas.

[k] Loureiro.

Which ever way the Thorns are propagated, in october they ſhould be planted out in rows, at leaſt eight inches aſunder, and ſix inches in the row, their roots having been ſhortened, and their tops cut of, ſo as to ſtand four or five inches above ground. In this nurſery they ſhould remain no more than two years: the ground being dug ſpring and autumn, and the plants cut the firſt ſeaſon an inch or two above the former cutting.

When removed again, they ſhould be in rows four feet aſunder, and two feet diſtant in the row: they ſhould alſo be cut to the height of a foot or fourteen inches; and about the end of june, clipped ſtraight in the ſides and thin in the tops. Having ſtood a year longer, cut them again to the height of two feet or thirty inches, and clip them as before. The third ſeaſon they may be cut at three feet and a half high about midſummer, and the following autumn they may be planted for handſome hedges four feet high.

If plants of a larger ſize are deſired, as ſix feet high, they muſt be removed once more, and remain three years.

Quick thus removed, and planted out large, will make an almoſt immediate fence, and ſave much charge in countries where fencing is very expenſive.

For the management of White-thorn, or Quick hedges, ſee the two articles HEDGES and QUICK.

CRATÆOGONON. See *Bartſia*, *Euphraſia*, and *Parietaria indica.*]

CRATEVA. (*From Cratevas a Greek, mentioned as a botaniſt by Hippocrates.*)

Lin. gen. 599. *Reich.* 654. *Schreb.* 818. *Tapia. Plum.* 21.

Claſſ. 11. 1. Dodecandria Monogynia.

Nat. order of *Putamineæ.—Capparides.* Juſſ. 244.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, four-cleft, deciduous, flat at the baſe: *diviſions* ſpreading, ovate, unequal.

COR. *Petals* four, oblong, bent down to the ſame ſide, *claws* ſlender, length of the calyx, inſerted into the diviſions.

STAM. *Filaments* ſixteen or more, briſtle-form, declined to the ſide oppoſite the petals, ſhorter than the corolla. *Anthers* erect, oblong.

PIST. *Germ* on a very long filiform pedicel, ovate. *Style* none. *Stigma* ſeſſile, headed.

PER. *Berry?* fleſhy, globoſe, very large, pedicelled, one-celled, two-valved?

SEEDS many, roundiſh, emarginate, neſtling.

OBS. *There are two ſpecies* (1, 2.) *with gynandrous flowers.* R. C. Marmelos *has the calyx five-cleft, petals none? Stamens ſixty. Is it a diſtinct genus? Lin. R.*

ESSENTIAL CHARACTER.

Cal. four-cleft. *Cor.* three-petalled. *Berry* one-celled, many-ſeeded.

SPECIES.

[1. Crateva gynandra. *Thin-leaved Crateva.*
Lin. ſpec. 636. *Reich.* 2. 418. *Brown. jam.* 246. *Pluk. phyt. t.* 147. *f.* 6. *Swartz. obſ.* 191.
Anona. *Sloan. jam.* 2. 170. *Raii dendr.* 78.
Unarmed; leaflets ovate, quite entire; flowers gynandrous.]

3. Crateva Tapia. *Smooth Crateva*, or *Garlic-Pear.*
Lin. ſpec. 637. *ſyſt.* 444. *Reich.* 2. 419. *fl. zeyl. n.* 211. *hort. cliff.* 484. *Vahl ſymb.* 3. 61.
Tapia. *Marcgr. braſ.* 98. *Piſ. braſ.* 68. *t.* 69.—arborea triphylla. *Plum. gen.* 22. *t.* 21.
Apioſcorodon. *Pluk. alm. t.* 137. *f.* 7.
Anona. *Sloan. jam.* 2. 169. *Raii dendr.* 79.
Malus americana trifolia, &c. *Comm. hort.* 1. *t.* 67.
Unarmed; leaflets ovate, acuminate, petals ovate-roundiſh, blunt, germs globular.

3. Crateva Marmelos. *Prickly Crateva.*
Lin. ſpec. 637. *ſyſt.* 444. *Reich.* 2. 419. *fl. zeyl. n.* 212.—*Pluk. alm. t.* 170. *f.* 5. *Raii hiſt.* 1665. (*Cucurbitifera.*)
Cydonia exotica. *Bauh. pin.* 435. *Burm. zeyl.* 84.
Bilanus. *Rumph. amb.* 1. 197. *t.* 81.
Covalam. *Rheed. mal.* 3. *t.* 37.
Thorny; leaves ſerrate.

[4. Crateva religioſa.
Forſt. pl. eſc. 45. *n.* 14. *fl. auſtr. n.* 203. *Vahl ſymb.* 3. 62.
Nürvala. *Rheed. mal.* 3. 49. *t.* 22.
Unarmed; leaflets and petals lanceolate-elliptic, acute at both ends.

5. Crateva obovata.
Vahl ſymb. 3. 61.
Leaflets and petals obovate, germ oblong.

DESCRIPTIONS, &c.

Theſe are trees with ternate leaves, and the flowers in terminating panicles[a].

1. Trunk twelve feet and more in height, and unarmed. Branches ſpreading, round, unequal, rugged, dotted; the younger ones herbaceous, green, very ſmooth. Leaves alternate, eſpecially towards the ends of the branchlets. Petioles longer than the leaves, round, ſmooth, green. Leaflets petioled, acute, nerved, veined, very ſmooth, thin, deep green. Raceme terminating, erect, ſtrict, many-flowered. Flowers rather large, purple, on round ſmooth peduncles from one to two inches in length, and without bractes. Calyx goblet-ſhaped, four-cornered, with a rounded fleſhy unequal border. Leaflets four, inſerted into the margin, oppoſite, ovate, acute, patulous, deciduous. Petals two, very ſeldom four, placed on the ſides of the upper calycine leaflet, aſcending, erect, ovate-lanceolate, entire, whitiſh. Filaments twenty to twenty-four, inſerted into a columnar receptacle, patulous, longer than the petals, declining, filiform, green, tinged with purple. Anthers erect, linear, a little curved, two-valved, very dark purple; but the pollen yellow. Germ pedicelled, roundiſh, ſmall: ſtyle none: ſtigma ſeſſile, ſubcapitate, brown. Pericarp ovate, berried, two-celled, many-ſeeded.

The pedicel of the germ is at firſt very ſhort, but finally becomes as long as the ſtamens. In ſome flowers the piſtil is wholly wanting, the plant therefore is polygamous. It has a burning taſte, and a nauſeous ſmell. It approaches ſo near to *Cleome*, as hardly to be diſtinguiſhed from it, except by the fruit[b]. Linneus remarks, that it differs from *C. Tapia* in having thin leaves, the petals ovate, not lanceolate, but eſpecially in having the ſtamens elevated on a column the height of the calyx, as in *Cleome gynandra.*

Native of Jamaica, in dry coppices near the ſea; flowering in may and june.]

2. This tree has a very large trunk, which riſes to the height of thirty feet or more, covered with a dark green bark, ſending out many branches, ſo as to form a large head. The branches are garniſhed with trifoliate leaves, ſtanding on pretty long footſtalks; the middle leaf, which is much larger than either of the other, is oval, about five inches long, and two and a half broad in the middle. The two ſide leaves are oblique, thoſe ſides which join the middle leaf being much narrower than the other, and turn at both ends toward the middle, ſo that their midrib is not parallel to the ſides; theſe two end in acute points. They are all ſmooth, of a light green on the upper ſide, but pale on their under; their edges are entire. The flowers are produced at the ends of the branches, ſtanding upon long peduncles, The fruit is about the ſize of an Orange, having a hard brown ſhell, or cover, incloſing a meally pulp, filled with kidney-ſhaped ſeeds. It has a ſtrong ſmell of Garlic, which is communicated to the animals that feed on it.

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[a] Juſſieu, [b] Swartz.

[Vahl adds, that the branches are round, with an aſh-coloured bark. The leaves heaped at the ends of the branches, alternate: leaflets petioled, nearly equal, nerved. Peduncles ſeveral, one-flowered. Segments of the calyx ſhort, ovate. Claw of the petals as long as the lamina. Filaments twice as long as the petals.

Linneus remarks, that the flower in this ſpecies, as well as the firſt, has a ſtipitate germ, like *Cleome gynandra.*

Native of the Weſt Indies. Mr. Miller ſays,] I received the fruit of this from Jamaica, where it grows in great plenty, which were ſent me by William Williams, Eſq; of St. Anne's, in that iſland, who has been ſo kind as to furniſh me with many other curious ſeeds which have ſucceeded in the Chelſea garden.

3. This ſort is a native of India, where it grows to a great height, with a large trunk, ſending out many long branches, garniſhed with trifoliate leaves; the leaflets are oblong, entire, and end in acute points; between theſe the branches are armed with long ſharp thorns, which come out by pairs, and ſpread aſunder. The flowers are produced in ſmall cluſters from the ſide of the branches, five or ſeven ſtanding upon a common branching peduncle; theſe have each five acute petals, which are reflex; they are green on the outſide, whitiſh within, and have a grateful odour. After the flower is paſt, the germen ſwells to a large fruit the ſize of an Orange, having a hard ſhell, which incloſes a fleſhy viſcous pulp, of a yellowiſh colour, having many oblong plane ſeeds ſituated within it; the pulp of this fruit has an agreeable flavour when ripe, and is frequently eaten in India, where they ſerve up the fruit, mixed with Sugar and Orange, in their deſerts, and it is eſteemed a great delicacy.

[Linneus ſuſpects that this may be of a different genus. He obſerves that the calyx is five-cleft, that the flower has no petals, and ſixty ſtamens.

This and the preceding ſort were cultivated by Miller before 1759.

4. Trunk of a middling height, upright. Branches ſpreading, round, aſcending, covered with an olive bark dotted with white. Leaves ſcattered at the ends of the branchlets: leaflets acuminate, quite entire, ſmooth, tender, netted with many nerves and veins, a ſpan long, the ſide ones a little ſmaller, the anterior edge narrower but not ſhorter, ſpreading horizontally. Common petioles ſpreading, ſemicylindric, ſmooth and even, a hand in length: partial petioles very ſhort. Cyme terminating, ſubcorymbed; and ſometimes ſolitary flowers from the axils of the upper leaves. Peduncles one-flowered, round, ſmooth, looſe, three or four inches in length, ſpreading, thickiſh at the baſe. Flowers an inch and half in diameter, greeniſh white, with red ſtamens. Filaments the length of the petals or a little longer. Germ oblong.

Native of the Eaſt Indies, and the Society Iſles. In the latter it is planted at their burial places, and is ſuppoſed to be ſacred to their idols. In Otaheite it is called *Pura-au* or *Purataruru.* The fruit is eaten[c].

5. Leaves and leaflets petioled: the latter an inch and half long, the ſide ones a little ſmaller, mucronate, ſmooth, veined underneath. Peduncle heaped at the top, two inches long, one-flowered, ſegments of the calyx oblong, mucronate. Petals attenuated at the baſe. Filaments ſeven to nine, three times the length of the petals. Style longer than the filaments. It does not ſeem to be a variety of *C. Tapia,* ſince it differs in the form of the leaflets and petals, the former being nearly equal at the baſe, the latter having longer claws; the filaments alſo being longer, and the germ oblong. In other reſpects it has the habit of the reſt. Native of Madagaſcar[d].]

PROPAGATION AND CULTURE.

Theſe plants are propagated by ſeeds, which muſt be procured from the places where it grows naturally; they muſt be ſown upon a good hot-bed in the ſpring, and when the plants are fit to remove, they ſhould be each tranſplanted into a ſmall pot filled with light kitchen-garden earth, and plunged into a hot-bed of tanner's bark, ſhading them every day from the ſun, until they have taken freſh root, after which they may be treated in the ſame manner as the ANNONA; which ſee. They ſhould be watered ſparingly in winter.

CRATEVA. See *Capparis.*

CREPIS. (*The name of a plant in Pliny; derivation unknown.* Κρηπις *in Greek is the baſe or foundation of any thing: alſo a ſhoe or ſandal.*)

Lin. gen. n. 914. *Reich.* 993. *Schreb.* 1239. *Gærtn. t.* 158. Hieracioides. *Vaill. A.G.* 1721. 47. 52. 13. 17. 18.

Claſſ. 19. Syngeneſia Polygamia Æqualis.

Nat. order of *Compoſitæ Semifloſculoſæ.—Cichoraceæ. Juſſ.* 169.

GENERIC CHARACTER.

CAL. *Common* double.

Exterior very ſhort, ſpreading, deciduous.

Interior ovate, ſimple, furrowed, permanent. *Scales* linear, converging.

COR. *Compound* imbricate, uniform. *Corollets* hermaphrodite, very many, equal.

Proper one-petalled; ligulate, linear, truncate, five-toothed.

STAM. *Filaments* five, capillary, very ſhort. *Anther* cylindric, tubular.

PIST. *Germ* ſomewhat ovate. *Style* filiform, length of the ſtamens. *Stigmas* two, reflex.

PER. none. *Calyx* roundiſh.

SEED ſolitary, oblong, fuſiform, ſometimes columnar. *Down* hairy, generally ſtipitate.

REC. naked, with cells or pits.

OBS. *The Down in ſpecies* 10, 11, 12, 15, 17, 18, 19, 20, *is ſeſſile.*

It is ſometimes feathered. Juſſ.

11, 12, 17, *are ſubplumoſe, or ſomewhat feathered, according to Hudſon.*

This genus differs from Hieracium *in the ventricoſe toruloſe form of the mature calyx: from* Picris *in the ſimplicity of the down.* G.

ESSENTIAL CHARACTER.

Cal. calycled with deciduous ſcales. *Down* hairy, ſtipitate. *Recept.* naked.

SPECIES.

[1. Crepis pygmæa.

Lin. ſpec. 1131. *Reich.* 3. 648.

Hieracium. *Bocc. muſ.* 2. 33. *t.* 14. *Raii ſuppl.* 142.

Leaves ovate entire villoſe petioled; ſtem procumbent.

2. Crepis burſifolia.

Lin. ſpec. 1131. *Reich.* 3. 648.

Hieracium. *Bocc. muſ.* 2. 147. *t.* 106. & 112. *Raii ſuppl.* 142.

Leaves pinnatifid crenate; ſcape naked few-flowered.]

3. Crepis barbata. *Spaniſh* or *bearded Crepis,* or *purple-eyed Succory Hawkweed.*

Lin. ſpec. 1131. *ſyſt.* 719. *Reich.* 3. 649. *hort. upſ.* 239. *Curt. magaz. t.* 35. *cliff.* 387. (*Hieracium.*)

C. boetica. *Mill. dict. n.* 3.

Hieracium medio nigrum boeticum. *Herm. parad. t.* 185. *Mill. fig. t.* 147. *Raii hiſt.* 232. *n.* 7. *Park. theat.* 792.

H. proliferum falcatum. *Bauh. pin.* 128.

H. calyce barbato. *Col. ecphr.* 2. 28. *t.* 27. *f.* 1.

Involucres longer than the calyx, ſcales ſetaceous ſcattered.

[4. Crepis veſicaria.

Lin. ſpec. 1132. *Reich.* 3. 649.

Hieracium montanum rapifolium. *Bauh. pin.* 128. *prodr.* 65. *Raii hiſt.* 237. *Mor. hiſt.* 3. 65.

β. Cichorium pratenſe hirſutum veſicarium. *Bauh. pin.* 126.

C. ſylveſtre veſic. prat. *Col. ecphr.* 1. 238. *t.* 237.

Involucres ſcarioſe the length of the calyx; flowers corymbed; bractes ovate.]

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[c] Forſt. eſcul.

[d] Vahl.

5. Crepis alpina.
Lin. ſpec. 1134. *Reich.* 3. 658. *Gærtn. fruct.* 2. 364.
Hieracioides annua, endiviæ fol. capite magno. *Vaill. act.* 1721. *p.* 246.
Leontodon. *Gmel. ſib.* 2. 16. *t.* 5.
Involucres ſcarioſe the length of the calyx, flowers ſolitary.

6. Crepis rubra. *Purple Crepis.*
Lin. ſpec. 1132. *ſyſt.* 719. *Reich.* 3. 650. *hort. upſ.* 239. *cliff.* 338. (*Hieracium.*) *Gouan. monſp.* 414. *Krock. ſileſ. n.* 1301.
Leaves ſtem-claſping lyrate-runcinate.

[7. Crepis foetida. *Stinking Crepis,* or *Succory-Hawkweed.*
Lin. ſpec. 1133. *Reich.* 3. 650. *Hudſ. angl.* 339. *With.* 852. *Relh. cant. n.* 570. *Hall. helv. n.* 29. *Pollich. pal. n.* 749. *Gouan. monſp.* 415. *illuſtr.* 59. *Leers herborn. n.* 609. *Krock. ſileſ. n.* 1299. *Villars dauph.* 3. 141.
Hieracium. *Mor. hiſt.* 3. 63. *ſ.* 7. *t.* 4. *f.* 4. *Magn. monſp.* 129. *t.* 128. *Raii hiſt.* 232. *n.* 6. *ſyn.* 165. *n.* 7. *Pet. brit. t.* 12. *f.* 8.
Senecio hirſutus. *Bauh. pin.* 131.
Erigeron tertium. *Dod. pempt.* 641. 3. *Lob. ic.* 1. 226. 1.—tomentoſum alterum. *Ger. emac.* 279.
Leaves runcinate-pinnate rough with hairs; petioles toothed.

8. Crepis aſpera.
Lin. ſpec. 1132. *Reich.* 3. 651.
Hieracioides ſicula, eichorii fol., fl. parvo flaveſcente. *Vaill. act.* 714.
Leaves toothed, lower ovate eared, upper ſagittate, ſtiff briſtles ſcattered over the ſtem.

9. Crepis rhagadioloides.
Lin. ſyſt. 719. *Reich.* 3. 651. *mant.* 108.
Leaves entire ſtem-claſping oblong; interior calyxes toruloſe-jointed hiſpid, leaflets boat-form.

10. Crepis ſibirica. *Siberian Crepis.*
Lin. ſpec. 1135. *ſyſt.* 719. *Reich.* 3. 652. *hort. upſ.* 239. *Gouan. illuſtr.* 60.
Hieracium. *Hall. helv. n.* 39. *Gmel. ſib.* 2. 26. *t.* 10. *Pluk. alm. t.* 116. *f.* 1.
Leaves ſtem-claſping oblong wrinkled toothed at bottom; ſtem rough with hairs; calyxes ciliate on the keel.

11. Crepis tectorum. *Smooth Crepis.*
Lin. ſpec. 1135. *Reich.* 3. 652. *fl. ſuec. n.* 705. *With.* 853. *Lightf.* 440. *Curt. lond.* 5. 55. *Relh. cant. n.* 569. *Hall. helv. n.* 31. *Scop. carn. n.* 954. *Pollich pal. n.* 751. *Leers herborn. n.* 610. *Fl. dan. t.* 501. *Krock. ſileſ. n.* 1307. *Villars dauph.* 3. 144.
Hedypnois tectorum. *Hudſ. angl.* 341.
Hieracium. *Lin. lapp.* 286. *hort. cliff.* 387. *Bauh. hiſt.* 2. 1024. (*glabrum.*) *Raii hiſt.* 234. 16. *ſyn.* 165. 9. *Lob. ic.* 1. 239. & 229. 2. *Dod. pempt.* 636. 3. *Ger.* 228. 2. *emac.* 297. 4. & 284. 2. *Park. theat.* 794. 2. & 777. 2. *Pet. brit.* 12. 5, 6, 7. *Mor. hiſt. ſ.* 7. *t.* 7. *f.* 29. *Tabern.* 491. 2.
Cichorium pratenſe luteum lævius. *Bauh. pin.* 126.
Hieracioides vulgatiſſima pœne glabra annua, fol. longo dentato. *Vaill. act.* 1718.
Leaves lanceolate-runcinate ſeſſile even, the lower toothed.

12. Crepis biennis. *Biennial Crepis. Rough Succory-Hawkweed.*
Lin. ſpec. 1136. *Reich.* 3. 653. *fl. ſuec. n.* 706. *With.* 855. *Engl. bot.* 149. *Relh. cant. n.* 571. *Hall. helv. n.* 30. *Pollich pal. n.* 752. *Leers herborn. n.* 611. *Gærtn. fruct.* 2. 364. *Krock. ſileſ. n.* 1308. *Villars dauph.* 3. 146.
Hedypnois biennis. *Hudſ. angl.* 342.
Hieracium maximum, Chondrillæ fol., aſperum. *Bauh. pin.* 127. *prodr.* 64. *Raii ſyn.* 166. *Park.* 793. *Mor. hiſt. ſ.* 7. *t.* 4. *f.* 46. *Pet. brit.* 12. 10.
H. erucæ fol., hirſutum. *Bauh. hiſt.* 2. 1025. 3.
Hieracioides altiſſima annua, chondrillæ fol., fl. utrinque luteo. *Vaill. act.* 1718.
Leaves runcinate-pinnatifid ſcabrous, toothed at the baſe above, calyxes muricate.

13. Crepis virens.
Lin. ſpec. 1134. *Reich.* 3. 653. *Hall. helv. n.* 33. *Gouan. illuſtr.* 61. *Gærtn. fruct.* 2. 365. *Krock. ſileſ. n.* 1304. *Villars dauph.* 3. 142.
Lapſana capillaris. *Lin. ſpec. edit.* 1. 812. *Gouan. hort. monſp.* 418.
Hieracium minus glabrum, fol. eleganter virentibus. *Bauh. pin.* 127. *prodr.* 63.
H. minus Dioſcoridis. *Tabern.* 181.
H. dentis leonis fol. hirſutum, fl. luteo extus purpuraſcente. *Tourn. paris.* 99.
Leaves runcinate ſmooth ſtem-claſping, calyxes ſubtomentoſe.

14. Crepis Dioſcoridis. *Dioſcorides's Crepis.*
Lin. ſpec. 1133. *Reich.* 3. 654. *Neck. act. palat.* 2. 464. *Pollich pal. n.* 750. *Krock. ſileſ. n.* 1302.
C. virens B. *Villars dauph.* 3. 143.——pulchra. *Scop. carn. n.* 955.
Hieracium majus erectum anguſtifolium, caule lævi. *Bauh. pin.* 127. *Tabern. hiſt.* 491. 1.
Hieracioides vulg. annua, cichorii fol., fl. luteo ſubtus purpuraſcente. *Vaill. act.* 715. *paris.* 102.
Root-leaves runcinate, ſtem-leaves haſtate, calyxes ſubtomentoſe.

15. Crepis pulchra. *Small-flowered Crepis.*
Lin. ſpec. 1134. *Reich.* 3. 654. *Gouan. monſp.* 414. *Krock. ſileſ. n.* 1303. 2. *t.* 37.
Hieracium pulchrum. *Bauh. hiſt.* 2. 1024.
H. montanum hirſutum minus. *Bauh. pin.* 128. and 9. *Raii hiſt.* 234. 15.
Hieracioides annua glutinoſa, flor. parvis. *Vaill. act.* 1721.
β. *Retz. obſ.* 2. 24. *n.* 79. Lapſana condrilloides, &c. *Lin. hort. upſ.* 245.
Hieracium montanum alterum leptomacrocaulon. *Col. ecphr.* 1. 248. *t.* 249. *Raii hiſt.* 234.
H. annuum montanum, caule canaliculato. *Mor. hiſt.* 3. *ſ.* 7. *t.* 5. *f.* 37.
Leaves ſagittate toothletted, ſtem panicled, flowers pyramidal ſmooth.

16. Crepis neglecta.
Lin. ſyſt. 720. *Reich.* 3. 655. *mant.* 107.
Leaves ſtem-claſping runcinate toothed ſomewhat hairy, ſtem panicled, calyxes with one or two ſpines on each leaflet.

17. Crepis albida. *Pale-flowered Crepis.*
Ait. hort. kew. 3. 127. *Lamarck encycl.* 2. 179. *Jacqu. ic. collect.* 1. 81. *Allion. pedem. n.* 800. *t.* 32. *f.* 3. *Villars dauph.* 3. 139.
Leaves runcinate-toothed ſomewhat hoary, peduncles naked one-flowered, calycine ſcales whitiſh at the edge.

18. Crepis rigens. *Briſtly-leaved Crepis.*
Ait. hort. kew. 3. 127.
Leaves oblong doubly ſerrate briſtly; ſtem naked, branched; flowers panicled; calyxes cylindric ſmooth; down ſeſſile.

19. Crepis filiformis. *Fine-leaved Crepis.*
Ait. hort. kew. 3. 128.
Leaves linear-filiform very entire ſmooth; down ſeſſile.

20. Crepis ſucculenta. *Fleſhy-leaved Crepis.*
Ait. hort. kew. 3. 128.
Leaves pinnatifid or toothed ſomewhat fleſhy even; calyxes ſomewhat tomentoſe; down ſeſſile.

DESCRIPTIONS, &c.

1. Height not more than ſix inches. Flowers yellow[a]. Gouan (illuſtr. 57.) joins it with the *Hieracium pumilum* of Linneus.—Native of the mountains of Italy.

2. Stems not above a ſpan in height, having on them a few ſhort laciniate leaves. The root-leaves reſemble thoſe of Shepherd's-purſe, whence its name. The ſtems are divided at top into two, three or more peduncles, which are very ſlender and ſupport ſmall flowers. It is a perennial plant, and is found near Palermo, and in other places in Sicily[b]. Alſo in the county of Nice.]

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[a] Ray.

[b] Ibid.

3. This is an annual plant, putting out leaves next the root, nine inches in length, and almoſt two broad in the middle, of a light green colour. Stems a foot and half high, dividing into many branches, and having leaves of the ſame form with the others, but ſmaller and ſeſſile. The flowers are produced at the ends of the branches. The outer ſeries of calycine leaflets are bent down, turn up again, and are bent in at their extremities.

[Leaves lanceolate, ſmooth, with a few teeth. The ſmall branches narrower at the baſe; one as it were growing out of the other. Flowers yellow, purpliſh at the baſe, but the florets in the diſk almoſt wholly dark purple. Seeds columnar, crowned with a very minute ciliate edge, and two long ſimple briſtles[c]. The outer calyx is longer than the corolla[d].—Herman and Miller have miſcalled the diſk black; but Parkinſon and Ray long ſince ſaid that it is *atropurpureus* or very dark purple.]

There are two varieties, one in which the flowers are deep yellow; and the other in which they are of a ſulphur colour inclining to white, but both have a very dark purple bottom or middle, and make a pretty appearance in the flower-garden. They flower in june and july, and the ſeeds ripen in autumn.

[Native of the South of Europe. Introduced about 1620, by Mr. William Boel[e].

4. α. Root thick. Leaves lyrate, angular, toothed, ſcabrous. Stem ſhort. Branches long, naked, bifid or trifid, one-flowered. Bractes of the peduncles ovate, ſolitary, concave, entire, pale. Flowers yellow. Involucre the length of the calyx, compoſed of five or ſix ſpreading, ovate, obtuſe, concave, membranaceous, pale leaflets.

β. Differs manifeſtly from the other in its leaves, but the flowers unite them[f].

α. Said by Linneus to grow in Switzerland, which Haller denies, Hieracium montanum rapifolium of Bauhin belonging to Crepis biennis.

β. Native of Apulia.]

5. This is an annual plant, which ſends out many oblong pointed leaves next the root; they are five inches long, and almoſt two broad at their baſe, leſſening gradually to a point; the upper part is ſlightly indented, but the lower is entire. The ſtems are ſtrong and upright, two feet high, dividing into three or four erect branches, terminated by pale-coloured flowers, incloſed in a ſtrong hairy calyx, which contracts cloſe towards the top. The ſtem-leaves are of the ſame form with the others, embracing, ſlightly indented towards the baſe, hairy and rough. [Receptacle concave, deeply alveolate, the edges of the cells ciliate. Seeds very long, with numerous rugged ſtreaks, of a pale bay colour, from a club-ſhaped baſe leſſening gradually into the ſtipe. Down capillary, white, much ſhorter than the ſeed: ſtipe ſubulate-ſetaceous, rugged, the length of the ſeed. The ſtructure is the ſame in the ſeeds of *veſicaria*, *rubra*, *foetida*, &c.[g]]

Native of the Alps. It flowers in june, and the ſeeds ripen in autumn.

6. Root annual. Root-leaves many, lanceolate, deeply jagged. From theſe ariſe the ſtalks, which are a foot and half high, dividing into many ſlender branches, each terminated by one large flower, of a red colour. [Down ſtipitate as in C. alpina and veſicaria. The calyx nods before the flower opens[h].

Native of Italy. Cultivated in 1632, by Mr. Nicholas Swayton[i].

7. Stem a foot or eighteen inches in height, erect, round, angular-grooved, rough with hairs ſtanding out. Root-leaves petioled, forming a tuft; ſtem-leaves claſping, deeply pinnatifid almoſt to the nerve; the outmoſt ſegment triangular, acute, toothletted, the ſide ones broader above, the loweſt linear, a little curved, all toothed, hoary green, hairy, ſcabrous. The ſtem and branches appear panicled with the flowers. Calyx cylindric, conſiſting of parallel ſcales, whitiſh on the outſide, ſet with very ſoft hairs, and at the baſe a few ſmaller ſcales. Flowers yellow, the ſize of thoſe in *C. tectorum*[k]; purple on the outſide, nodding before they open. Seeds very long and ſlender, bearing the down on a long ſtipe[l]. Receptacle ſomewhat hairy[m].

Villars remarks, that this plant varies in ſize, form, colour, and ſmell; but that in all the varieties the root is fuſiform; the ſtem rough, channelled and branched; the leaves aſh-coloured and more or leſs indented at the baſe; that it has commonly the ſmell of bitter Almonds, eſpecially the calyx when bruiſed; that the florets are red on the outſide; the ſeeds fuſiform, and the egret on a ſtipe.

Linneus following Tournefort, attributes the ſmell of bitter Almonds to the leaves; Haller more juſtly gives the plant a bituminous ſcent. Ray ſays that this and the foregoing have a ſtrong ſcent of Caſtor. To me the flowers always ſeemed to have the ſmell of Opium.

Native of France, Germany, Switzerland, Auſtria, Piedmont; England, near Cambridge, Banſtead downs in Surry. Charlton, Northfleet and Greenhithe in Kent. Near Swaffham in Norfolk.

Petiver calls it Caſtor Hawkweed.

It flowers from june to auguſt. Biennial. Linneus makes it an annual.

8. Stem naked, branched, rough with ſubulate, ſtiff, ſcattered, ſpreading briſtles. Flowers almoſt cymed on ſtiff pedicels, ſubſeſſile, alternate, except the laſt. Calyx ſmall, ovate, toruloſe, hiſpid; the outer ſhorter, with ovate, membranaceous, deciduous leaflets.

Native of Sicily, the Levant and Paleſtine[n].

9. Annual. Stem half a foot high, erect, ſtriated, ſcabrous, branched. Leaves ſmooth and even. Peduncles elongated, ſcabrous, one-flowered, naked. Outer calyx compoſed of very many linear, obtuſe leaflets, half the length of the calyx, unequal at the inſertion: inner cut into thirteen parallel parts, each of which is a boat-ſhaped, compreſſed leaflet, the back hiſpid with little barbed prickles. Corolla yellow, purpliſh on the outſide. All the ſeeds have a hairy down[o].

10. Perennial. Stem ſtiff, two feet high, ſtriated, hiſpid. Leaves lanceolate-ovate, ſubruncinate, toothed more and more towards the baſe, ſcabrous underneath on the nerves: the lower on winged toothed petioles. Peduncles one-flowered, leafleſs, ſtrict, thicker towards the flower. Seeds brown-purple.

Compare Hieracium pyrenaicum with this[p]. Gouan combines varieties β and δ of that Hieracium with this ſpecies.

Native of Siberia, Switzerland, and perhaps the Pyrenees.

Introduced 1773, by John Earl of Bute. It flowers in july and auguſt[q].

11. This is a very common plant, of an aſh-coloured green. Stem angular-furrowed, with branches as long as the ſtem. Root-leaves as in common Dandelion (*Leontodon Taraxacum*): ſtem-leaves as in *Leont. autumnale*, with the teeth of the baſe upright and longer: branch-leaves entire, linear, ſubſagittate with the edges rolled back. The flowers never nod, and have the appearance of thoſe of *Lapſana*. Calyx furrowed, ſprinkled longitudinally with clammy hairs. Styles where they riſe above the anther brown, which is a ſingular character. The plant in other reſpects, liable to many variations[r]. In a rich ſoil, appearing as figured by Tabernæmontanus (Ger. 228. 2. *W.*): in a poor ſoil, a foot in height, with linear leaves, ſomewhat toothed, reſembling thoſe of *Plantago Coronopus*, (as in Gmel. 2. 6.); or only a hand's breadth high, with jagged leaves like thoſe of Dandelion[s].

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[c] Linn. ſpec.
[d] Linn. ſyſt.
[e] Hort. kew.
[f] Linn. ſpec.
[g] Gærtner.
[h] Linn. ſpec.
[i] Hort. kew. from Johnſon's iter Cantianum.

[k] Pollich.
[l] Haller.
[m] Leers.
[n] Linn. ſpec.
[o] Linn. mant.
[p] Linn. ſyſt.
[q] Hort. kew.
[r] Linn. ſpec.
[s] Linn. ſuec. and Stokes in With.

Root annual; Relhan alone ſays perennial: ſimple, with few fibres, deſcending, yellowiſh, (very long and taper). *Stem* from one to two feet high or more, (Haller ſays four); upright, ſmooth, or a little hairy, eſpecially towards the baſe, often purple, leafy. *Leaves* very variable, ſmooth or ſlightly hirſute on both ſides (with bifid hairs, *Scop.*); thoſe next the root very like Dandelion leaves, but narrower and the midrib purple on the upper ſide; thoſe of the ſtalk claſping, pointed, and variouſly toothed. Flowers yellow, in a kind of looſe corymb. Inner *calyx* ſubcylindric; ſcales upright, equal: ſcales at the baſe five or more, ſubulate, ſhort, unequal, looſe, and like the others ſlightly hiſpid. *Florets* five-teethed, and moſtly purple beneath. *Seeds* twenty or more in each head, brown and finely grooved: down longer than the ſeed, ſeſſile and ſimple, or ſubplumoſe only when highly magnified[t]. There are ſmall ſubulate bractes on the fruit-ſtalks, at ſmall diſtances beneath the flowers[u].

The flowers, heads, and ſeeds of this plant are ſmaller than any Engliſh Hawkweed, except the *Hyoſeris* and *Hypochæris glabra.* To this we may add, the ſtructure of the calyx, and the ſtem-claſping leaves[x].

The flowers expand about four in the morning, and cloſe about noon[y].

Native of Europe, in paſtures, by way-ſides, on banks and on walls: flowering from june to ſeptember.

Called by our old writers *Yellow Succory*, *Succory-Dandelion*, and *Succory-Hawkweed.*—Petiver calls it *Hawk-beard*, and Dr. Withering has adopted this name for the genus.

12. *Stem* angular, ſcabrous, from four to ſix feet high, brittle. All the *leaves* lyrate-pinnate, hiſpid beneath. *Calyx* furrowed, muricated longitudinally with tender prickles[z].

The lower ſcales ſmooth, patulous; the upper erect, rounded at the back and hiſpid. Receptacle alveolate, the edges of the cells ciliate. Seeds oblong, roundiſh, ſtriated, ſmooth, yellow or ferruginous, more ſlender at top but not ſtiped. Down ſeſſile, capillary, ſnow-white, deciduous[a].

Flowering branches divaricate, bearing ſeveral flowers on ſeparate peduncles. Beneath the lower branches leaves ſimilar to the ſtem-leaves; beneath the upper linear-lanceolate. The peduncles have lanceolate bractes. Leaves of the inner calyx lanceolate. Seeds furrowed, crowned with a ſeſſile down, not plumoſe, a little longer than the calyx[b]. All the ſcales of the calyx ſlightly cottony, with only here and there a ſcattered, ſhort, briſtly hair[c].

Native of Scania, Switzerland, Italy, Germany; England, paſtures in a calcareous ſoil, as in Kent about Northfleet, and between Sittingbourn and Rocheſter; in Cambridgeſhire about Linton, *&c.* Biennial: flowering in july and auguſt.

The flowers cloſe between three and four in the afternoon[d].

This and the preceding ſpecies, together with Leontodon hiſpidum, hirtum, and autumnale, have been combined by Hudſon, under the name of *Hedypnois.*

13. Root-leaves lanceolate, obtuſe, ſmooth, ſomewhat toothed; ſtem-leaves lanceolate, haſtate, nearly embracing the ſtem, very entire, acute, ſmall. Stems a ſpan in length, erect, filiform, ſubdichotomous. Flowers ſmall, yellow. The calyxes only tomentoſe[e]; but even they are ſmooth according to others[f].

Native of France, Switzerland, Sileſia, and Italy.

Linneus doubts whether this may not be a variety of the next ſpecies; and Gouan does not heſitate to make them one and the ſame.

According to Gærtner, it differs from *Hieracium* only in the calyx; which, when ripe, reſembles much that of *Hyoſeris minima*; is ventricoſe, toruloſe, and ſcarcely calycled. Receptacle obſoletely ſcrobicular. Seeds regularly columnar, deeply grooved, ruſeſcent. Down capillary, ſeſſile, half as long again as the ſeed, deciduous.

14. Annual. Stem a foot high, ſomewhat angular, ſmooth and even; branches but few, round and ſpreading. Root-leaves lyrate-toothed, naked, ſmooth, toothletted, ſcarcely ciliate: ſtem-leaves claſping, haſtate, linear-lanceolate, with a purple ſtain on the lower diſk, and the ears very much toothed at the baſe: branch-leaves linear, with one tooth at the baſe. Peduncles long, naked, aſcending, one-flowered, ſcarcely thickened at the end. Calyxes meally, not nodding before they flower; the calycle linear. Corolla yellow, purple beneath before it expands[g].

This is united with the preceding by ſeveral authors, as Vaillant, Haller, Gouan, and Villars.

Native of France, the Palatinate, Sileſia, Italy, Siberia. Flowering in june.

Introduced 1772, by Monſ. Richard[h].

15. Calyx ſmooth and even, narrow, angular, with very minute green ſcales at the baſe. Annual. Native of France and Italy[i].

It flowers in july and auguſt: and was cultivated in Chelſea garden, in 1739[k].

Krocker has a long deſcription of it.

β. is thus deſcribed by Retzius.—Root annual, branched. Stem upright, branched, from two to five feet high, grooved, ſmooth, panicled. Lower leaves lyrate, upper oblong-cordate, the reſt haſtate; all ſeſſile, ſinuate-toothed, pubeſcent, eſpecially the uppermoſt, which are linear and entire. Flowers panicled, yellow, on naked pedicels. Calyx cylindric, ſmooth, ten-leaved; leaflets linear, keeled; calycle of five ſhort margined ſcales. Florets twenty-four, a little higher than the calyx. Receptacle naked. Seeds oblong, cylindric, very ſlightly ſtreaked. Down ſimple, ſeſſile.

16. Annual. Stem a foot high, branched, ſomewhat hairy, erect. Root-leaves obovate-oblong, toothed, ſomewhat hairy: ſtem-leaves claſping, runcinate, ſomewhat hairy, with elongated teeth even at the baſe: upper leaves ſubhaſtate. Flowering branches elongated, naked, ſmooth and even, two-flowered or bifid at the end. Outer calyx very ſhort, acute; inner having eight or ten leaflets, with one or two harmleſs ſpines in the middle. This agrees with *C. pulchra* in its ſize and the ſmallneſs of its flowers; it differs in having the leaves runcinate, toothed and ſomewhat hairy, whereas in the other they are entire, a very little toothed and viſcid. Some of the ſynonyms given under *C. pulchra* belong probably to one, and ſome to the other.—This is a native of Italy[l].

17. Perennial. Stems ſeveral, twice or thrice dichotomous, with a ſeſſile leaf at each diviſion of the branches. Root-leaves elliptic, gradually leſſening into a leafy petiole, thickiſh, toothed, ſeldom quite entire. Stem-leaves half embracing, rougher, ſharper, with a more evident prickle. Receptacle alveolate. Calyx nearly conic, toroſe; inner ſcales roughiſh, duſky at the end, whitiſh about the edge, boat-ſhaped at their origin, at firſt erect, but afterwards ſpreading; ſome of the outer ſcales longer than the reſt and preſſed cloſe to the others. Peduncles naked, thickened under the flower, having a ſmall ſcale near the calyx. Florets five, the length of the calyx. Down ſimple, ſeſſile, about the length of the ſeed. When the ſeed is ripe, the calyx is wholly reflected[m].

The deſcription by Monſ. Villars contains ſome particulars not mentioned by Allioni, and differs in many reſpects from his.—The ſingle ſtem bears two or three flowers, ſometimes one only, but is commonly divided into two or three peduncles; it is ſtraight, firm, grooved and villoſe from the middle upwards; and the branches are ſpreading. Leaves at firſt entire, afterwards toothed and even pinnatifid; they are white and villoſe, four or five inches long, and an inch wide: there are only two or three ſhorter ones under the branches. Peduncles a little thicker at top, with hairs in part glandular. Calyx pretty large, dilated and having a ſingle ſcale at the baſe; otherwiſe ſimple, with the ſcales imbricate as in *Hieracium*, but very ſenſibly membranous at the edge, as in *Hypochæris*. Flowers large, pale yellow or whitiſh, compoſed of a great number of florets. Seeds diminiſhing into a ſtipe at top. Egret very white, hairs ſimple or a little toothed, but ſhort and numerous. Receptacle a little villoſe.

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[t] Curtis.
[u] Pollich and Woodw. Mſſ.
[x] Curtis.
[y] Linn. ſuec.
[z] Linn. ſpec.
[a] Gærtner.
[b] Woodw. Mſſ.
[c] Stokes in With.
[d] Linn. ſuec.
[e] Linn. ſpec.
[f] Haller and D'Aſſo.
[g] Linn. ſpec.
[h] Hort. kew.
[i] Linn. ſpec.
[k] Hort. kew.
[l] Linn. mant.
[m] Allioni.

Native of France and Italy.

18. Native of the Azores. Perennial. Flowering in july and auguſt. Introduced 1778.

19, 20. Natives of Madeira. Introduced 1777, from Mr. Francis Maſſon.—The firſt is biennial, and flowers in june; the ſecond is annual, and flowers in auguſt and ſeptember [n].

PROPAGATION AND CULTURE.

Few of theſe plants are commonly cultivated, and ſome of them are weeds in gardens and paſtures. The third and ſixth ſpecies appear as annuals in the flower-garden. Theſe and any of the other ſorts may eaſily be propagated from ſeeds;] which ſhould be ſown in the ſpring, on the borders of the flower-garden where they are deſigned to remain, ſo that if ſix or eight ſeeds are ſown in each patch, when the plants come up, they may be reduced to three or four; and if theſe are kept clean from weeds, they will require no other culture, excepting the putting ſmall ſticks down, to faſten the ſtalks to prevent their being broken by winds or rains. If the ſeeds are ſown in autumn, or permitted to ſcatter, the plants will come up and live through the winter without ſhelter, and theſe will flower early in the ſpring.

[The three laſt ſpecies require the protection of a greenhouſe. All the others are hardy.

Crepis. See *Apargia*, *Hieracium*, *Leontodon*.]

CRESCENTIA. (*From Pietro Creſcentio, the Italian writer on Agriculture, in the thirteenth century.*)

Engl. *Calabaſh-tree*. Fr. *Calebaſſier, Couis*.
Lin. gen. 762. *Reich.* 820. *Schreb.* 1021.
Cujete. *Plum.* 16.
Claſſ. 14. 2. Didynamia Angioſpermia.
Nat. order of *Putamineæ?—Solaneæ? Juſſ.* 127.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, two-parted, ſhort, deciduous; *diviſions* roundiſh, concave, obtuſe, equal.

Cor. one-petalled, unequal. *Tube* gibbous, crooked, toruloſe. *Border* erect, five-cleft; *diviſions* unequal tooth-ſinuated.

Stam. *Filaments* four, ſubulate, length of the corolla, ſpreading; of which two are a little ſhorter. *Anthers* incumbent, obtuſe, twin.

Pist. *Germ* pedicelled, ovate. *Style* filiform, length of the corolla. *Stigma* headed.

Per. *Berry* oval, hard, one-celled.

Seeds very many, ſubcordate, neſtling, two-celled.

ESSENTIAL CHARACTER.

Cal. two-parted, equal. *Cor.* gibbous. *Berry* pedicelled, one-celled, many-ſeeded. *Seeds* two-celled.

SPECIES.

1. Creſcentia Cujete. *Narrow-leaved Calabaſh-tree.* *Lin. ſpec.* 872. *ſyſt.* 564. *Reich.* 3. 161. *hort. cliff.* 327. *Jacqu. amer. t.* 111. *pict.* 86. *t.* 167. *Comm. hort.* 1. 137. *t.* 71. *Brown. jam.* 265. 1.
Cujete. *Plum. gen.* 23. *ic.* 109.
β. C. anguſtifolia, fr. minori globoſo aut ovato. *Plum. gen.* 23. *Brown. jam.* 266. 2, 3.
γ. C. minima, fructu duro. *Plum. gen.* 23.
Leaves wedge-lanceolate crowded.

2. Creſcentia cucurbitina. *Broad-leaved Calabaſh-tree.* *Lin. ſyſt.* 565. *Reich.* 3. 162. *mant.* 250. *Brown. jam.* 266. 4.
C. Cujete δ. *Lin. ſpec.* 873.
Creſcentia latifolia. *Mill. dict. n.* 2.
Leaves ovate ſubcoriaceous diſtinct, fruits ovate acuminate.

DESCRIPTIONS, &c.

[Theſe are ſmall trees, with large leaves, either ſingly alternate (2) or in alternate bundles (1). Flowers on the trunk or branches ſubſolitary.—Juſſieu doubts whether C. jaſminoides of Lamarck, Cateſb. car. 1. t. 59. be of this genus.

1. This tree grows to the height of about twenty feet, and is eaſily diſtinguiſhed from all others by its peculiar appearance. It divides at top into very long, thick, ſcarcely ſubdivided branches, ſtretching out almoſt horizontally, adorned with leaves diſpoſed in bundles or tufts ſcatteringly at irregular diſtances. The wood is light and pliant. The bark is unequal and aſh-coloured or whitiſh. The leaves are uncertain in their number from the ſame knot or tubercle; they are oblong, attenuated at the baſe, on very ſhort petioles, acute, entire, ſhining, veined, bright green, four or five inches long. Peduncles one-flowered, ſolitary, ſcattered over the older branches, and frequently on the trunk itſelf three inches above the ground. Flower large, ſometimes entirely green, but often differently variegated with purple red and yellow; it does not wither, but becomes putrid, and in that ſtate exhales a cadaverous, very nauſeous and intolerable ſtench. It happens not uncommonly, that there are five fertile ſtamens, and in that caſe three of them are longer than the other two. The form of the fruit varies on different trees, being ſpherical, ſpheroidal, or ſhaped like a bottle; it differs alſo in ſize from two inches to a foot in diameter. Theſe, however, if they are no more than varieties, are very conſtant [a].] They are covered with a thin ſkin of a greeniſh yellow colour when ripe, and under this is a hard thin woody ſhell, incloſing a pale yellowiſh ſoft pulp, of a tart unſavoury flavour, ſurrounding a great number of flat ſeeds. The ſhells, cleanſed of their pulp, deprived of the outer ſkin, and dried, are uſed in the Weſt Indies for drinking cups, tipped with ſilver, and with handles faſtened to the neck; the long ſmall fruit is formed into ſpoons and ladles; that which is round, is cut through the middle, and uſed as cups for chocolate: in ſhort theſe ſhells are converted into a variety of domeſtic furniture. [They are frequently large enough to hold a gallon or more of fluid: and they are ſo thin and cloſe, that they ſerve to boil water as well as an earthen pot, and will bear the fire equally, on repeated trials. The thicker parts are frequently uſed for button-moulds, in all the colonies [b]. The Caribbs engrave the outſide with a variety of groteſque figures, which they ſometimes colour black or red [c]. The pulp is eaten by the negroes occaſionally, but is not looked upon as either agreeable or wholeſome. It is however much uſed by way of poultice [d]; and a ſyrup made of it is in much requeſt among the natives in diſorders of the breaſt, in contuſions and inward bruiſes [e]. The wood being very tough and flexile, is very fit for the coachmaker [f];] and is frequently uſed for making ſaddles, ſtools, and other furniture. The leaves and branches are eaten by cattle in times of ſcarcity; as is alſo the pulp of the fruit.

It is a native of Jamaica and all the Leeward iſlands, [chiefly in the low lands; and alſo of the neighbouring continent.—It was introduced here in 1690, by Mr. Bentick [g].

2. The trunk of this tree is middle-ſized, unarmed, ſmooth and even. The branches ſubdivided, erect, not ſpreading, ſtiff and ſtraight, angular, even. Leaves oppoſite, alternate or ſcattered, never in tufts, larger, broad, ovate, with a ſhort point, quite entire, nerved, abſolutely ſmooth, ſhining above, paler beneath. Petioles ſhort, thick, ſmooth. Peduncles two to five, terminating, ſhorter than the leaves, longer than the petioles, one-flowered. Corollas nodding, the ſize of the preceding, but more duſky; the baſe of the tube and throat is white, the

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[n] Hort. kew.

[a] Jacquin.
[b] Browne.
[c] Jacquin.
[d] Browne.
[e] Jacquin.
[f] Browne.
[g] Hort. kew.

belly red, the border pale, the ſegments duſky. The fruit is pedicelled, ovate-oblong with a ſhort point, one-celled.

It differs from the preceding in its habit, the uprightneſs of its branches, its flat, oblong, ſhining, coriaceous leaves, terminating flowers on longer pedicels, corolla with the border entire, and ovate, acuminate fruit. It flowers the whole year[h].

Native of Jamaica, in dry rocky places near the coaſt.] Mr. Miller had the fruit from Dr. Houſtoun, who found it growing naturally in plenty at Campeachy. According to him, it ſeldom riſes more than fifteen or twenty feet high, the trunk is upright, covered with a white ſmooth bark, the leaves are three inches in length, and one inch and a quarter broad, of a deeper green than the preceding, the flowers ſmaller and deeper-coloured, the fruit round or oval, varying much in ſize, the ſhell ſo thin and brittle as to be unfit for any purpoſes to which that of the former is employed, the ſeeds much thinner, and the pulp of a deeper yellow. The wood is very hard and white.

PROPAGATION AND CULTURE.

Theſe trees being too tender to live abroad in England, require a warm ſtove to be preſerved here. They are eaſily propagated by ſeeds, which muſt be procured from the countries where they grow naturally; the way is to have the entire fruit ſent over when fully ripe; for when the ſeeds are taken out of the pulp abroad, if they are long in their paſſage they will loſe their growing quality before they arrive, as I have often experienced. Theſe muſt be ſown on a good hot-bed in the ſpring, and when the plants are fit to remove, they ſhould be each planted into a ſmall halfpenny pot filled with light ſandy earth, and plunged into a hot-bed of tanner's bark, obſerving to ſhade them from the ſun till they have taken freſh root; when they muſt be treated in the ſame manner as other tender plants, which are natives of the ſame countries. In winter they muſt be placed in the tan-bed of the bark-ſtove, and during that ſeaſon ſhould have but little water; in ſummer they will require to be gently watered two or three times a week, according to the warmth of the ſeaſon; and in hot weather they ſhould have a large ſhare of air admitted to them. With this management the plants will make great progreſs, and their leaves being of a fine green, they make a pretty variety in the ſtove, but have not as yet flowered in England.

Cress. See *Cardamine*.

——— Baſtard. See *Thlaſpi*.

——— Garden. See *Lepidium*.

——— Indian. See *Tropæolum*.

——— Rock. See *Iberis*.

——— rocket. See *Vella*.

——— Swines. See *Cochlearia*.

——— Water and Winter. See *Siſymbrium*.

[CRESSA. (*A Cretan plant; thus Ovid calls Phædra* Creſſa puella, *a Cretan damſel.*)

Lin. gen. n. 313. *Reich.* 341. *Schreb.* 439.
Anthyllis *Magn. char.* 212.
Claſſ. 5. 2. Pentandria Digynia.
Dubii Lin. *Convolvuli* Juſſ. 134.

GENERIC CHARACTER.

Cal. *Perianth* five-leaved: *leaflets* ovate, obtuſe, incumbent, permanent.

Cor. one-petalled, ſalver-form: *Tube* length of the calyx, bellied below. *Border* five-parted. *Diviſions* ovate, acute, ſpreading.

Stam. *Filaments* five, capillary, long, ſitting on the tube of the corolla. *Anthers* roundiſh.

Pist. *Germ* ovate. *Styles* two, filiform, length of the ſtamens. *Stigmas* ſimple.

Per. *Capſule* ovate, one-celled, two-valved, a little longer than the calyx.

Seeds ſingle, ovate-oblong.

Obs. *In* C. indica *the capſule is four-ſeeded.*

ESSENTIAL CHARACTER.

Cal. five-leaved. *Cor.* ſalver-form. *Filam.* ſitting on the tube. *Capſ.* two-valved, one-ſeeded.

SPECIES.

1. Creſſa cretica.
Lin. ſpec. 325. *Reich.* 629. *amæn.* 1. 395.
Anthyllis. *Alp. exot.* 157. *t.* 156. *Raii hiſt.* 215.
Quamoclit min. humifuſa paluſtris, herniariæ fol. *Tournef. cor.* 4.
Chamæpithys incana, exiguo fol. *Bauh. pin.* 249.
Lyſimachiæ, &c. affinis, &c. *Pluk. alm. t.* 43. *f.* 6.
Corollas beardleſs, capſules one-ſeeded.

2. Creſſa indica.
Retz. obſ. 4. 24. *n.* 71.
Corollas bearded at the tip, capſules four-ſeeded.

DESCRIPTION, &c.

1. This is a ſmall plant, and very ſhrubby. Root long, ſlender, jointed, white. Hence ariſe ſeveral ſtems, not fewer than five, long, ſlender, round, whitiſh, whence at ſhort intervals ſpring many ſlender ſhort twigs, ſurrounded on every ſide with many very ſmall leaves, the ſize and form of a lentil: the whole forming a very cloſe round ſhrub. The ſmall flowers come out at the ends of the twigs. The fruit is ſmall, oblong and cylindric, of the ſize and ſomewhat of the form of a grain of wheat. The whole plant is white, and has a ſalt taſte[i].

Native of Crete, on the ſea ſhores; and at Oſtia near Rome.

2. It differs from the preceding in having the corolla ſnow-white, hairy on the outſide, eſpecially at the ends of the ſegments, and four ſeeds in the capſule. In other reſpects it is like the other.

Native of the Eaſt Indies, in ſalt marſhes; obſerved there by Koenig[k].

Crimſon Graſs-Vetch. See *Lathyrus Niſſolia*.

Crinita capenſis. See *Pavetta caffra*.

CRINODENDRUM. (*From* Κρινον *a Lily, and* Δενδρον *a tree; Lily-tree.*)

Lin. gen. Schreb. n. 1114. *Molina. Chil.* 179.
Cavanill. diſſ. 5. *p.* 300. *t.* 158.
Claſſ. 16. 4. Monadelphia Decandria.

GENERIC CHARACTER.

Cal. none.

Cor. bell-ſhaped. *Petals* ſix, oblong, erect, ſpreading at the tip.

Stam. *Filaments* ten, erect, united at bottom. *Anthers* ovate, erect.

Pist. *Germ* ſuperior, ovate. *Style* ſubulate, a little longer than the ſtamens.

Per. *Capſule* coriaceous, obtuſely three-cornered, one-celled, gaping elaſtically at top.

Seeds three, roundiſh.

ESSENTIAL CHARACTER.

Cal. none. *Cor.* bell-ſhaped, ſix-petalled. *Capſ.* one-celled, gaping elaſtically at top.

SPECIES.

1. Crinodendron Patagua.
Cavanill. diſſ. 9. *p.* 300. *ic. tab.* 158. *fig.* 1.
Molina hiſt. Chil. p. 179.
Lily-tree with oppoſite, lanceolate, ſerrated leaves.

DESCRIPTION.

This, which is the only ſpecies at preſent known, is a ſuperb, ever-green branchy tree, with a body of ſeven feet in diameter. The leaves are oppoſite, a great deal longer than the petioles, of a bright green, lanceolate, and ſerrated: there are no ſtipules: the flowers are ſcattered and axillary, the peduncles one-flowered; the flowers having the odour of lilies. The ſeeds are of the ſize of a lentil. It is a native of Chili: Joannes Ignatius Molina was its firſt diſcoverer and deſcriber.]

CRINUM. (*A name in Pliny.* Κρινον *of Dioſcorides. Derivation unknown.*)

Lin. gen. n. 405. *Reich.* 438. *Schreb.* 553.
Bulbine. *Gærtn.* 13.
Claſſ. 6. 1. Hexandria Monogynia.
Nat. order of *Spathaceæ.—Narciſſi.* Juſſ. 54.

GENERIC CHARACTER.

Cal. *Involucre* ſpathe-form, two-leaved, oblong, umbelluliferous, after gaping reflected.

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[h] Swartz.

[i] Alpin.

[k] Retz.

Cor. one-petalled, funnel-form; *Tube* oblong, cylindric, inflected. *Border* ſix-parted: *diviſions* lanceolate-linear, obtuſe, concave, reflected, of which the three alternate ones are diſtinguiſhed by a hooked appendicle.

Stam. *Filaments* ſix, ſubulate, from the baſe of the border, of the length of the border, converging. *Anthers* oblong, linear, riſing upwards, incumbent.

Pist. *Germ* inferior. *Style* filiform, length of the flower. *Stigma* three-cleft, very ſmall. (ſimple or three-cleft. *J.*)

Per. *Capſule* ſubovate, three-celled. (covered with the calyx. *J.*)

Seeds ſeveral.

Obs. *It differs from* Pancratium *only in the want of a nectary.* L'Herit.

ESSENTIAL CHARACTER. Syſt.

Cor. funnel-form, monopetalous, ſix-parted: three alternate ſegments uncinate. *Germ* at the bottom of the corolla, covered. *Stam.* diſtant.

ESSENTIAL CHARACTER. Lin. fil. in Hort. kew.

Cor. funnel-form, half-ſix-cleft: tube filiform; border patulous recurved, ſegments ſubulate channelled. *Filam.* inſerted in the throat of the tube, diſtinct.

SPECIES.

1. Crinum aſiaticum.
Lin. ſpec. 419. *ſyſt.* 318. *Reich.* 2. 23. *fl. zeyl. n.* 127. *L'Herit. ſert.* 8. *Lour. cochinch.* 197.
Bulbine aſiatica. *Gærtn. fruct.* 42.
Amaryllis bulbiſperma. *Burm. prodr.* 9.
Lilium zeylanicum bulbiferum & umbelliferum. *Herm. lugdb. t.* 683.
Radix toxicaria. *Rumph. amb.* 6. 155. *t.* 69.
Belutta-pola-taly. *Rheed. mal.* 11. 75. *t.* 38. *Rudb. elyſ.* 2. *t.* 90.
Leaves keeled.

2. Crinum americanum. *Great American Crinum.*
Lin. ſpec. 419. *α.* *Reich.* 2. 24. *hort. cliff.* 127. *upſ.* 76. *Ait. hort. kew.* 413. *L'Herit. ſert.* 8.
Lilio-aſphodelus. *Comm. rar. t.* 14. *Dill. elth.* 194. *t.* 161. *f.* 195.
Leaves oblong-lanceolate, very ſmooth at the edge, with the end contracted and hooked; flowers pedicelled, with the tube ſhorter than the border.

3. Crinum erubeſcens. *Small American Crinum.*
Lin. ſpec. 419. *β.* *Ait. hort. kew.* 413.
C. aſiaticum. *Mill. dict. n.* 2. *fig. t.* 110.
Lilio-aſphodelus. *Comm. rar. t.* 15.
Leaves lanceolate cartilaginous-crenulate, the end produced and unfolded; flowers ſeſſile; tube longer than the border.

[4. Crinum tenellum.
Lin. ſyſt. 319. *ſuppl.* 194. *Jacqu. ic. rar.* *Pluk. alm. t.* 225. *f.* 2. (Siſyrinchium.)
Spathe many-flowered, corollas equal, leaves filiform.

5. Crinum lineare.
Lin. ſyſt. 319. *ſuppl.* 195.
Leaves linear; corollas bell-form, with two ſegments narrower than the reſt.

6. Crinum nervoſum.
L'Herit. ſert. 8. *n.* 3. *Rumph. amb.* 6. 160. *t.* 70. *f.* 1. (Cæpa.)
Leaves roundiſh nerved, filaments widened at the baſe.

DESCRIPTIONS, *&c.*

1. Root ſolid, turbinate, ſurrounded with long branching fibres. Stem ſhort, thick, coated, white, ſingle. Leaves three feet long, three inches wide, ſubulate-linear, erect, ſtriated, thick, imbricate. Scapes axillary, round, equal to the leaves. Flowers white, large, in a ſimple flat umbel. Common involucre oblong. All the ſegments of the corolla are equal, and not hooked. Stamens diſtant. Capſule roundiſh, irregularly lobed[a].

Linneus obſerves, that the leaves are equitant in two rows. Corolla purple with white edges. Stamens declining: according to L'Heritier they are ſcarcely ſo. Bulbs are generated between the capſules. Native of Malabar, Ceylon, Tranquebar, Cochinchina, &c.

Rumphius extols the efficacy of the roots againſt poiſon both of ſerpents and arrows, in œdematous ſwellings, &c.

Gærtner makes this a diſtinct genus under the name of *Bulbine*, affirming that it differs as much from Crinum, as Alſtroemeria from Hemerocallis. For Crinum has a ſuperior, priſmatic, three-valved capſule, and very ſmall ſeeds, perpendicularly imbricate, and terminated by a membranaceous wing, as in Pinus. Whereas the capſule in this is inferior, membranaceous, inflated and valveleſs: the ſeeds three-ſided, with membranaceous angles: the diviſions of the corolla alſo are not hooked at the end. But his Crinum is our *Agapanthus umbellatus.*

2. Flowering ſtem a foot and half in height, the thickneſs of a finger, ſlightly compreſſed, coming out, not from the centre of the leaves, but on one ſide. Leaves two feet and more in length, and a hand broad, furrowed on the upper ſurface, and keeled on the lower, ſmooth, ſtiff, light green, ſlightly waved on the edge, thickiſh, ſharp-pointed, pierced with many largiſh pores. Flowers before they open pale yellow, but when open of a milky whiteneſs, and of no diſagreeable ſmell: ſegments of the petals keeled; tube about two inches in length. Stamens long, bending in, white at bottom, but purple at top. Style ſhorter than the ſtamens, of a deeper purple colour. The flowers open ſucceſſively, each laſting a day or two. Some very ſlender threads adhere to the involucre, and to the pedicels of the flowers[b]. Native of South America. Flowering in july and auguſt. Cultivated 1732, in the garden of James Sherard, M. D. at Eltham[c].

3. The flower-ſtem ariſes immediately from the root, on the outſide of the leaves, and is about two feet high; on the top are eight or ten flowers, in form of an umbel, cloſely joined at their baſe, but ſpreading above. They are of a beautiful white colour, and ſmell very ſweet. The ſtamens are ſtretched out to a conſiderable length beyond the petals. After the flowers are paſt, the germ ſwells, and becomes an oblong bulb. The plants generally flower three or four times in a year, but at no regular ſeaſon; as the petals are of a very tender texture, they do not continue in beauty longer than four or five days[d].

Native of the Spaniſh Weſt Indies. Mr. Miller received roots of this and the foregoing ſpecies, at leaſt as early as the year 1756, from Panama and Carthagena, probably ſome years earlier, and cultivated them in the Botanic Garden at Chelſea.

4. A plant leſs than *Ornithogalum minus.* Leaves radical, linear-filiform, of a finger's length. Scape filiform, columnar, the ſame length with the leaves. Flowers in an umbel, of three or four equal, filiform pedicels, an inch in length, from patulous erect: ſpathe linear, membranaceous: corolla the ſize of *Arenaria trinervia*, ſpreading a little; petals lanceolate, equal: ſtamens almoſt erect, a little ſhorter than the corolla: germ tricoccous: ſtigma often ſpiral, as in *Anthericum ſpirale.*—Found at the Cape of Good Hope, by Sparrmann[e]. According to the opinion of the younger Linneus and Solander, this is a *Leucoium*, or perhaps a new genus[f].

5. Flowers large, white. Found at the Cape by Thunberg[g].]

6. Leaves cordate-rounded, entire, acuminate, with concentric nerves. Scape many-flowered, many-leaved. Flowers on long peduncles. Tube of the corolla filiform; ſegments of the border acute, ſpreading. Filaments inſerted into the throat, oppoſite to and ſhorter than the ſegments, ſtraight, not declined. Native of the Philippine iſlands, obſerved by Monſ. Poivre[h].]

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[a] Loureiro.

[b] Dillenius.

[c] Hort. kew.

[d] Mill. fig.

[e] Linn. ſuppl.

[f] L'Heritier ſert. p. 9.

[g] Linn. ſuppl.

[h] L'Heritier.

PROPAGATION AND CULTURE.

Theſe bulbs are very ornamental plants for the ſtove. They are eaſily propagated by offſets, which the roots put out in plenty; or by the bulbs which ſucceed the flowers, and ripen perfectly here. Theſe muſt be planted in pots filled with rich earth, and if plunged into the tan-bed in the ſtove, the plants will make greater progreſs and flower oftener, than when they are placed on ſhelves; though in the latter way they will ſucceed very well, provided they are kept in a good temperature of heat. The roots ſhould be tranſplanted in the ſpring, and all the offſets taken off, otherwiſe they will fill the pots, and ſtarve the old plants: they muſt be frequently refreſhed with water, but it muſt not be given them too plentifully, eſpecially in winter. Theſe ſorts flower at every ſeaſon of the year, which renders them more valuable; for where there are many plants, there will be almoſt a perpetual ſucceſſion of flowers, which emit a very agreeable odour.

[Crinum africanum. See *Agapanthus.*

———— anguſtifolium. See *Cyrtanthus anguſtifolius.*

———— falcatum. See *Amaryllis falcata.*

———— latifolium. See *Amaryllis latifolia.*

———— obliquum. See *Cyrtanthus obliquus.*

———— ſpecioſum. See *Amaryllis purpurea.*

———— zeylanicum. See *Amaryllis zeylanica.*

Crista. See *Cæſalpinia.*]

Crista Galli. See *Rhinanthus*, and *Hedyſarum.*

Crista Pavonis. See *Guilandina*, and *Poinciana.*

CRITHMUM. (Κριθμον *of Dioſcorides. Derivation unknown.*)

Lin. gen. n. 340. *Reich.* 371. *Schreb.* 473. *Tourn.* 169. *Juſſ.* 223.

Claſſ. 5. 2. Pentandria Digynia.

Nat. order of *Umbellatæ* or *Umbelliferæ.*

GENERIC CHARACTER.

Cal. *Umbel univerſal* manifold, hemiſpheric; *Partial* ſimilar.

Involucre univerſal many-leaved: *leaflets* lanceolate, obtuſe, reflex; *Partial* lanceolate-linear, length of the umbellule.

Perianth proper ſcarce obſervable.

Cor. *Univerſal* uniform: *Florets* all fertile.

Proper petals five, ovate, inflex, equal.

Stam. *Filaments* five, ſimple, longer than the corolla.

Anthers roundiſh.

Pist. *Germ* inferior. *Styles* two, reflex; *Stigmas* obtuſe.

Per. none. *Fruit* oval, compreſſed, bipartile.

Seeds two, elliptic, compreſſed-flat, ſtriated on one ſide.

ESSENTIAL CHARACTER.

Fruit oval, compreſſed. *Florets* equal.

SPECIES.

1. Crithmum maritimum. *Sea* or *rock Sampire.*
Lin. ſpec. 354. *ſyſt.* 280. *Reich.* 680. *mant.* 353. *hort. cliff.* 98. *upſ.* 61. *Hudſ. angl.* 117. *With.* 286. *Lightf.* 158. *Jacqu. hort.* 2. 88. *t.* 187. *Scop. carn. n.* 367. *Allion. pedem. n.* 1366. *Plenck, ic. t.* 209.
C. f. foeniculum maritimum minus. *Bauh. pin.* 288. *Mor. hiſt. ſ.* 9. *t.* 7. *f.* 1.
C. marinum. *Dod. pempt.* 705. 1. *Lob. ic.* 1. 392. 2. *Ger.* 427. 1. *emac.* 533. 1. *Raii hiſt.* 457. *ſyn.* 217. *Bauh. hiſt.* 3. 194.
Leaflets lanceolate, fleſhy.

2. Crithmum pyrenaicum. *Pyrenæan Sampire.*
Lin. ſpec. 354. *ſyſt.* 280. *Reich.* 681. *hort. cliff.* 98.
Apium pyr., thapſiæ facie. *Tournef. inſt.* 305.
The ſide leaflets twice trifid.

[3. Crithmum latifolium. *Wedge-leaved Sampire.*
Lin. ſyſt. 280. *ſuppl.* 180. *Ait. hort. kew.* 342.
Leaflets wedge-form cleft.

DESCRIPTIONS, &c.

1. Perennial. Stems ſmooth and even, entirely ſimple. Leaves triternate, the middle one often five-leaved. Leaflets linear, acute, lucid. Petiole the thickneſs of the leaflet. Involucre five-leaved, involucels ſeven-leaved, ſhort[1].]

It has a root compoſed of many ſtrong fibres, which penetrate deep into the crevices of the rocks, ſending up ſeveral fleſhy ſucculent ſtalks, which riſe about two feet high, with winged leaves, compoſed of three or five diviſions, each of which has three or five thick, ſucculent leaflets near half an inch long; the foot-ſtalks of the leaves embrace the ſtalks at their baſe. The flowers are produced in circular umbels at the top of the ſtalks; theſe are of a yellow colour, and are ſucceeded by ſeeds ſomewhat like thoſe of Fennel, but larger. This herb is pickled, and eſteemed very comfortable to the ſtomach, and is agreeable to the palate; it provokes urine gently, removes the obſtructions of the viſcera, and creates an appetite; it is commonly uſed for ſauce; it is gathered on the rocks, where it grows naturally, but the people who ſupply the markets with it, ſeldom bring the right herb, but inſtead of it they bring a ſpecies of Aſter, which is called golden Sampire, but has a very different flavour from the true, nor has it any of its virtues. This grows in greater plenty, and upon the plain ground which is overflowed by the ſalt water; whereas the true Sampire grows only out of the crevices of perpendicular rocks, where it is very difficult to come at. It flowers in july, and the ſeeds ripen in autumn.

[Native of the rocky ſhores of the European ocean. In Britain, on Dover cliffs, Winchelſea, Rye, Southampton, the iſle of Wight; on all the cliffs of the Corniſh coaſt. The fields about Porth Gwylan in Caernarvonſhire are covered with it. Furneis in Lancaſhire. Galloway in Scotland.—Allioni informs us that it alſo grows on old walls in the Alps.—It is not only uſed as a pickle, but freſh as a pot-herb, by inhabitants of the ſea-coaſt. Not only the *Inula crithmoides*, which Mr. Miller calls a ſpecies of Aſter, is uſed for Sampire, but the *Salicornia* is the only Sampire known on the eaſt coaſt, and is called *Marſh Sampire.* The inhabitants there muſt needs be ſurpriſed that the gathering of Sampire ſhould be called a dangerous trade, when they pluck it at their eaſe as they walk on the ſand. This, however, is taſteleſs, and has a tough ſtring running through the middle; whereas the true Sampire has a warm aromatic flavour, without any impediment to the teeth in eating.—Mr. Pennant informs us that ſheep and cows eagerly feed, and are ſaid to grow fat upon it.

It has the name *Sampire* or *Sampier,* ſometimes wrongly ſpelt *Samphire,* from the French *St. Pierre.* Gerarde ſays, it is by ſome called *Creſtmarine,* which is alſo from the French *Criſte marine;* they likewiſe call it *Bacille maritime, Fenouil marin, Paſſe-pierre, Perce-pierre* and *herbe de St. Pierre,* evidently from the roots ſtriking deep into the crevices of rocks. In Italian it is *Critmo, Finocchio marino,* and *herba di Santo Pietro.* In Spaniſh, *Hinojo marino.* In Portugueſe, *Funcho marinho.* In German, *Meerfenchel, Seefenchel, Bacillen.* In Daniſh, *Soefenkel.* In Swediſh, *Sjofenkal.*

2. Haller ſuppoſes this to be nothing elſe but *Athamanta Libanotis* growing old. Juſſieu is of opinion that it is more nearly related to the genus Athamanta. It is a biennial plant, and a native of the Pyrenees.]—Mr. Miller doubts whether the Apium petræum ſ. montanum album of Ray's ſynopſis (which is Athamanta Libanotis) be diſtinct from this. He ſays it is of humbler growth; the leaflets broader, not ſo much cut on their edges, and of a paler green.

[3. This is a very ſmooth plant, a foot and half in height. Stem round, furrowed, erect. Leaves petioled; leaflets oppoſite, bijugous or trijugous, the outer edge decurrent, gradually dilating, lobed and toothed. Petioles dilated at the baſe, ſtem-claſping. The involucre and involucel have ſix or eight lanceolate leaflets. Flowers yellow. Seeds ſmooth, furrowed, with a raiſed, even edge.—Found on the coaſts of Teneriffe and the Salvages, by Maſſon[k]. Biennial; it flowers in july, and was introduced in 1780[l].]

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[1] Linn. mant.

PROPAGATION AND CULTURE.

1. This plant is with difficulty propagated in gardens, nor will it grow ſo vigorous with any culture, as it does upon rocks; but if the plants are planted on a moiſt gravelly ſoil, they will thrive tolerably well, and may be preſerved ſome years. It may be propagated either by ſeeds, or parting the roots.

[It grows beſt when rooted in a wall, or on artificial rock-work.]

2. This is preſerved in a few gardens for the ſake of variety; it is propagated by ſeeds, which ſhould be ſown in the autumn where they are deſigned to remain, and will require no other culture but to keep them clean from weeds, and thin them where they are too cloſe.

[3. Propagated by ſeeds, and to be preſerved in the green-houſe or conſervatory.

CRITHMUM. See *Echinophora.*

CRITONIA. See *Eupatorium*, and *Kuhnia.*

CROCODILIUM. See *Centaurea*, and *Echinops.*]

CROCODILOIDES. See *Atractylis.*

CROCUS. (Κροκος, *of Theophraſtus. The ſtory of the youth Crocus turned into this flower, may be ſeen in the fourth book of Ovid's Metamorphoſes. Some derive this name from* κροκις *or* κροκη, *a thread; whence the ſtamens of flowers are called* κροκιδες. *Others again from Coriſcus, a city and mountain of Cilicia.*)

Lin. gen. n. 55. *Reich.* 61. *Schreb.* 75. *Tourn.* 183. 184.

Claſſ. 3. 1. Triandria Monogynia.

Nat. order of *Enſatæ.—Irides.* Juſſ. 59.

GENERIC CHARACTER.

CAL. *Spathe* one-leafed.

COR. *Tube* ſimple, long. *Border* ſix-parted, erect: *diviſions* ovate-oblong, equal.

STAM. *Filaments* three, ſubulate, ſhorter than the corolla. *Anthers* ſagittate.

PIST. *Germ* inferior, roundiſh. *Style* filiform, length of the ſtamens. *Stigmas* three, convolute, ſerrate.

PER. *Capſule* roundiſh, three-lobed, three-celled, three-valved.

SEEDS ſeveral, round.

ESSENTIAL CHARACTER.

Cor. ſix-parted, equal. *Stigmas* convolute.

SPECIES.

1. Crocus officinalis. *Officinal Crocus* or *Saffron.*
Lin. ſpec. 50. α. *ſyſt.* 83. α. *Reich.* 97. α. *mat. med.* 43. *hort. cliff.* 18. *upſ.* 15. *Hudſ. angl.* 13. α. *With.* 37. α. *Relh. cant. n.* 27. *Mill. fig. t.* 111. *Mill. illuſtr. ic. Berg. phyt.* 2. *t.* 161. *Plenck, ic. t.* 32. *Fl. ruſt. t.* 58.
C. ſativus. *Bauh. pin.* 65. *Allion. pedem. n.* 310. *Woodv. med. bot.* 479. *t.* 176.
C. autumnalis ſat. *Mor. hiſt.* 2. 335. *ſ.* 4. *t.* 2. *f.* 1. *Blackw. t.* 144. *f.* 1.
Crocus. *Ger.* 123. 1, 2. *emac.* 151. *Bauh. hiſt.* 2. 637. *Raii hiſt.* 1176. *ſyn.* 374.
C. verus ſat. autumn. *Park. parad.* 167. 169. *f.* 2.
β. C. autumnalis. *Mill. dict. n.* 2.
C. juncifolius autumn., fl. magno purpuraſcente. *Boer. ind.* 2. 120.
Leaves narrower, rolled in at the edges; ſtigma trifid to a conſiderable length.

2. Crocus vernus. *Spring Crocus.*
Lin. ſpec. 50. β. *ſyſt.* 83. β. *Reich.* 97. β. *Hudſ. angl.* 13. β. *With.* 38. β. *Hall. helv. n.* 1257. *Scop. carn. n.* 47. *Allion. pedem. n.* 309. *Jacqu. auſtr.* 5. *app. t.* 36. *Berg. phyt.* 2. 159. *Curt. magaz. t.* 45. *Fl. ruſt. t.* 59. *Cluſ.* 1. 205. 2. *Ger.* 125. 1. *emac.* 156. 12. & 153. 1. *Park. parad.* 161—167. *t.* 163. *Blackw. t.* 144. *f.* 2. *Raii hiſt.* 1173—1176.
C. vernus latifolius. *Bauh. pin.* 65, 66. 1—11 & 1—6.
β. C. biflora. *Mill. dict. n.* 4.
C. vernus ſtriatus vulgaris. *Herm. par.*
Leaves broader, with flat edges; ſtigma very ſhortly trifid.

DESCRIPTIONS, &c.

1. Autumnal or officinal Crocus or Saffron has a roundiſh bulbous root as large as a ſmall Nutmeg, which is a little compreſſed at the bottom, and is covered with a coarſe, brown, netted ſkin; from the bottom of this bulb are ſent out many long fibres, which ſtrike pretty deep into the ground; from the upper part of the root come out the flowers, which, together with the young leaves, whoſe tops juſt appear, are cloſely wrapped about by a thin ſpatha or ſheath, which parts within the ground, and opens on one ſide. The tube of the flower is very long, ariſing immediately from the bulb, without any foot-ſtalk, and at the top is divided into ſix ovate obtuſe ſegments, which are equal, of a purple blue colour. In the bottom of the tube is ſituated a roundiſh germ, ſupporting a ſlender ſtyle, which is not more than half the length of the petal, crowned with three oblong golden ſtigmas, which is the Saffron; theſe ſpread aſunder each way. The ſtyle is attended by three ſtamens, whoſe baſes are inſerted in the tube of the petal, and riſe to the height of the ſtyle. This plant flowers in october, and the leaves keep growing all the winter, but it never produces any ſeeds here.

[Haller remarks, that the autumnal Saffron differs from the Spring Crocus, in having the ſtigma divided into three long ſegments, the ends of which are alſo trifid. Theſe three horns of the ſtigma are alſo odorous and aromatic, which is not the caſe in the vernal Crocus: and the flowers are much larger. Add to this, that the corolla does not vary much in colour from its high native purple, that they differ alſo in the root and leaves, the time of flowering, and the place of growth.

Not to enter into the controverſy whether the autumnal and ſpring Crocus be ſpecifically different or not; it is to be lamented that our knowledge is not yet far enough advanced to aſcertain the ſpecies of plants on all occaſions, and to place ſpecific differences on firm foundations. Here two plants are ſuppoſed to be varieties only, though they differ in all the circumſtances above recited: and yet Hemerocallis flava & fulva are kept diſtinct, though they differ only in ſize, in the colour of their flowers, and the time of flowering.

It is the caſe with Saffron, as with many other plants in common cultivation; the place where it grows ſpontaneouſly is not well aſcertained. Gerarde ſays it grows on rocks near the ſea ſide in Portugal[a]. Allioni affirms that it is indigenous of Savoy: but I can ſcarcely think that it is a native of any part of Europe, where we do not find that it ever produces ſeed. Bulbous plants being perennial, and rooting themſelves very firmly in the earth, have eſtabliſhed themſelves in moſt parts of Europe, ſo as to have the appearance of being natives; and we ſhould take them to be ſuch, did we not know that they came originally from the Eaſt. I have no doubt but that ſome part of Aſia is the native country of the Saffron; and it was there it firſt acquired that high reputation in medicine, which it has now almoſt loſt in Europe. It is however ſtill cultivated in Italy, Sicily, Spain, France, Germany, Hungary, and very ſparingly with us in England.

That Saffron is indigenous of this country I cannot believe, though in Dr. Withering's botanical arrangements, it is ſaid to be found about Halifax, and in a meadow near the copper-mills at Derby. The indefatigable Ray affirms that nothing certain is known concerning its place of ſpontaneous growth, but that it is cultivated in moſt countries of Europe. In Cambridgeſhire, where the Saffron has been cultivated at leaſt two centuries, no wild plant was ever found, that I have heard of.—In Hackluyt's voyages (2. p. 164. edit. 1599.) indeed it is ſaid, that the ſoil in Herefordſhire yields the wild Saffron commonly; had this been true, it could hardly have eſcaped the curious reſearches of Ray; and beſides, our old authors called the vernal Crocus *wild* Saffron, appropriating the name *Saffron*, without any adjunct to the officinal ſpecies. Mr. Hudſon alſo has ſaid, " habitat in agro Cantabrigienſi & Eſſex-" ienſi—in pratis & paſcuis *paſſim.*" But it certainly does not grow wild in either of thoſe counties; nor any where ſo common at leaſt as to juſtify the uſe of the word *paſſim*, the ſenſe of which Mr. Hudſon ſeems to have miſtaken.

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[k] Linn. ſuppl.

[l] Hort. kew.

[a] This is probably C. montanus 1. Cluſ. hiſt.

It is commonly ſaid that Saffron was originally brought into England in the time of Edward III.; and that Sir Thomas Smith firſt introduced it into the neighbourhood of Walden in Eſſex.

The firſt of theſe aſſertions is very probable, but on what authority it reſts I have not been able to diſcover. It is mentioned by Strype, in his life of Sir Thomas Smith, and by Morant, in his hiſtory of Eſſex. But the firſt of theſe writers refers to Camden's Britannia; and the ſecond, to Ray's hiſtory, and the Philoſophical Tranſactions; in none of which books do I find any mention of the firſt introduction of Saffron into England. Mr. Gough, in his late edition of the Britannia, has alſo retailed the ſame report, but gives only the ſame references that Morant had ſet down before.

In Hackluyt's voyages (edit. 1599. 2. 165.) the firſt introduction of the Saffron into England is aſcribed to a pilgrim, who purpoſing to do good to his country, ſtole an head of Saffron, and hid the ſame in his Palmer's ſtaff. This ſtory carries a very legendary ſound with it; and being given only as a matter reported at Saffron Walden, may not perhaps obtain much credit.

That Sir Thomas Smith introduced Saffron into the neighbourhood of Walden, is a fact by no means well eſtabliſhed. None of the writers of this great man's life, mention any thing of the matter, except Strype; and he only ſays, " whether it was firſt " brought thither by this Knight's induſtry (being " a great planter) I know not." Certain it is, that Saffron was well known at Walden in 1582, in which year Hackluyt gave the remembrances for maſter S. (voy. 2. 164.): and if it be true, as I have been informed, that the corporation of Walden bear three Saffron plants in their arms; their charter having been granted, and probably their arms, in the third year of Edward VI.; it may be preſumed that the town was then famous for the cultivation of this plant.

Eſſex, however, was not the only county in which Saffron was then cultivated. Herefordſhire is particularly mentioned as that which yielded the beſt in all England: Mr. Houghton (in 1698) ſays, that he had ſeen ſome excellent Saffron from that county: and if we may believe Lyte, in his tranſlation of Dodoen's herbal (p. 155. edit. 1619.) it grew plentifully in ſome places of England and Ireland.

However this may be, Saffron was abundantly cultivated near Walden, at the end of the ſixteenth, and beginning of the ſeventeenth century. At what time it began to migrate into the neighbouring province, and at length finally quitted its primæval ſeat, I cannot preciſely aſcertain; but doubtleſs it was gradual, as its preſent decay in Cambridgeſhire has been. It ſhould ſeem as if in 1582 Saffron grew in both counties, and was then not much encouraged: for Hackluyt (2. 164.) ſays " if a vent " might be found, men would in Eſſex about Saf-" fronwalden and in Cambridgeſhire revive the " trade, for the benefit of ſetting the poor on " work."—Gerarde alſo (1597) informs us, that " Saffron groweth plentifully in Cambridgeſhire, " Saffron Walden and other places thereabout, as " corne in the fieldes." Camden (1586, &c.) makes no mention of Saffron as growing in Cambridgeſhire; but only obſerves that the fields all about Walden make a pleaſant ſhow with it. Speed, in his maps (1614) mentions it as growing with gain and increaſe in the north part of Eſſex.—From Blith's Engliſh improver improved (edit. 1653. p. 249.) we learn that " the Saffron country is on " one ſide and nook of Eſſex, and ſome part of " Suffolk; and at Saffron Walden and betwixt that " and Cambridge is very much of it in their com-" mon fields."—Robert Turner, in his Brittiſh Phyſician (edit. 1664. p. 284.) ſays, that " it is " plentifully manured in fields in Eſſex and Cam-" bridgeſhire."—And Robert Lovell, in his Compleat Herball (1665. p. 377.) aſſigns Cambridgeſhire, Saffron Walden, &c. as the places of growth of Saffron.—Mr. Ray, in his catalogue of Cambridgeſhire plants (1660), had ſet down Saffron (art. Crocus) as cultivated in that county: and in the liſts of plants with which he furniſhed Biſhop Gibſon for his edition of Camden's Britannia (1695), he ſays, that " it is planted and cultivated about " Walden plentifully; and in Cambridgeſhire fre-" quently."—Dr. Moriſon (1680) aſſures us, that Saffron is no where better or more flouriſhing than in England, eſpecially in Herefordſhire and Hampſhire, and about Saffron Walden, where it is abundantly cultivated.—And Mr. Houghton (1698) affirms, that the chief place in the world for Saffron, is Walden in Cambridgeſhire [Eſſex]; from whence comes the great quantities. *Collect.* 2. 332.—James Douglas, M. D. (in Philoſ. tranſact. nº 380. abr. 6. 311.) aſſerts that " Saffron has grown formerly in ſe-" veral counties of England, but that it then grew " moſt plentifully in Cambridgeſhire. He employed " proper perſons between the years 1723 and 1728 to " make obſervations on the culture of Saffron; and " aſſigns the place of its growth at that time, to all " the large tract of ground that lies between Saf-" fron Walden and Cambridge, in a circle of about " ten miles diameter."

Profeſſor Bradley, in 1724, ſays that the former of theſe places was once the chief market for it, but that of late years we find it cultivated in the grounds about Cambridge.

About this time it ſeems to have quitted the immediate neighbourhood of Walden, and to have migrated weſtward, nearly into the country where I found it in the year 1752. That is, in the pariſhes of Hinxton, Ickleton and Triplow, bordering on the Roman way, called the Ikenild ſtreet; and weſtward of theſe, to Gogmagog hills, in the pariſhes of Duxford, Newton, Harſton, Hauxton, Great and Little Shelford, Sawſton, Stapleford, and even as far as Fulborn, which is to the north of the hills; all in the county of Cambridge.

This plant, having given a prænomen to the town of Walden, might probably be ſuppoſed to have been cultivated there, long after it left the neighbourhood: but as we cannot doubt the accuracy of Mr. Ray, that event muſt have happened after the year 1695; and probably before 1723. The villages, however, of Ickleton and Hinxton are not above ſix miles diſtant from Saffron Walden.

The quantity of land under Saffron has been gradually leſſening during the laſt twenty or twenty-five years; owing, as it is thought, at firſt, to the lowneſs of the price, occaſioned by the great importation of foreign Saffron. It is now confined to two or three pariſhes only, of which Stapleford is one; and if ſome means are not uſed to encourage it, the cultivation of Saffron will probably ſoon be entirely loſt in this country.

Whether Saffron be of any national conſequence, I am not a competent judge; I only know that when the culture is entirely dropped, it will be no eaſy matter to revive it. Formerly the ſuperiority of Engliſh Saffron has been much celebrated, but lately it has been decried. This is not owing to our commodity being inferior to what it was; for it has at all times come out of the hands of the growers pure and genuine; but perhaps the foreign dealers are now wiſe enough to leave off their old ſophiſtications with baſtard Saffron or Safflower, Marygolds, &c.; and if ſo, their commodity, coming from a warmer climate, may have the ſuperiority. I only know that if the foreign Saffron can be afforded cheaper, it will be encouraged, without attending to its quality; and that I have very lately experienced a very ſenſible difference between the foreign and Engliſh Saffron, greatly to the advantage of our own.

Our modern European term of *Saffron* is from the Arabic *Sahafaran*; hence the Mooriſh and Spaniſh *Azafran, Azafraon, Safra*; the Italian *Zaffarano*, the German, Daniſh, Swediſh and French *Saffran*, or *Safran*, &c.

The varieties of autumnal Crocus are few, becauſe it produces no ſeed in our climates, whatever it may do in the Eaſt.] Mr. Miller has only four. 1. Sweet-ſmelling, which is his ſecond ſort, and our variety β. He ſays, that it grows naturally on the Alps and Swiſs mountains; that the root is ſmaller and more compreſſed, that the flowers riſe with a ſhort ſtalk, having a ſhort ſpathe juſt below the flower, which covers it before it expands; that the tube of the flower is very ſhort, the petals being divided almoſt to the bottom, and terminating in acute points; that the ſtamens and ſtyle are ſhort, and the leaves very narrow; that the colour is deep blue, but that it varies of a ſky blue. 2. Autumnal mountain; which has a flower of a paler blue colour. 3. Many-flowering blueiſh; with many ſky-blue flowers. 4. Small-flowering. This has a ſmall flower of a deep blue colour.—[Parkinſon has the ſame number.—Ray has ſix.]

2. The Spring Crocus has a pretty large compreſſed bulb, covered with a light brown, netted ſkin, from which ariſe four or five leaves of a purpliſh colour on their lower parts: from among theſe come out one or two flowers, ſitting cloſe between the young leaves, never riſing above two inches high, and having an agreeable odour. Out of the centre of the tube ariſes a ſlender ſtyle, crowned by a broad flat ſtigma of a golden colour. After the flower is paſt the germ puſhes out of the ground.

[The Spring Crocus in its wild ſtate is moſt commonly white with a purple baſe in Switzerland, according to Haller. Purple or white in Auſtria, according to Jacquin. Geſner gathered it with a yellow flower on the mountains of Glarus. Scopoli does not mention its colour, but ſays that it is not uncommon in Carniola. It is a native alſo of Italy and Spain.—In Britain it is not indigenous. I remember, when a boy, to have ſeen it in conſiderable quantity, in Batterſea meadow near the mill, apparently wild. It has been found alſo in the meadows about Nottingham, by Dr. Deering.

The varieties of Spring Crocus are very numerous. Mr. Miller recites only twelve.]

1. Broad-leaved, purple, variegated. This has a flower of a deep blue, and ſtriped.
2. Broad-leaved, plain purple.
3. Broad-leaved, violet-coloured, or large deep blue.
4. White with a purple bottom.
5. Broad-leaved, white, variegated.
6. Broad-leaved, with many violet-purple flowers ſtriped with white.
7. Broad-leaved, aſh-coloured.
8. Broad-leaved large yellow.
9. Broad-leaved ſmall pale yellow.
10. Broad-leaved, ſmall yellow, ſtriped with black.
11. Narrow-leaved, ſmall brimſtone.
12. Narrow-leaved, ſmall white.

[Parkinſon has no leſs than twenty-ſeven, all of which he has named and deſcribed particularly.

Modern catalogues ſet down many varieties of the ſeveral colours, which are blue and purple, yellow and white, or ſtriped. New ones are alſo conſtantly imported from Holland, each of which has a french or dutch title. The moſt common varieties now in our gardens are the Scotch, beautifully ſtriped; the Blue; the Blue ſtriped; White; Yellow of ſeveral ſhades, larger and ſmaller; Yellow ſtriped with black; Cloth of gold.

I ſeparate the Vernal from the Autumnal Crocus, on the authority of Miller, Haller and Jacquin; and my own opinion formed before I had ſeen the works of the two latter.]

PROPAGATION AND CULTURE.

SPRING CROCUS.

If the ſeeds of theſe flowers were ſown, there might be a greater variety of them obtained than is at preſent; but as they propagate very faſt by offſets, the ſeeds are very rarely regarded.

All theſe ſeveral varieties of Crocuſes are very hardy, and will increaſe exceedingly by their roots, eſpecially if they are ſuffered to remain two or three years unremoved; they will grow in almoſt any ſoil or ſituation, and are very great ornaments to a garden early in the ſpring of the year, before many other flowers appear. They are commonly planted near the edges of borders on the ſides of walks; in doing which, you ſhould be careful to plant ſuch ſorts in the ſame line as flower at the ſame time, and are of an equal growth, otherwiſe the lines will ſeem imperfect. Theſe roots, loſing their fibres with their leaves, may then be taken up, and kept dry until the beginning of ſeptember, obſerving to keep them from vermin, for the mice are very fond of them. When you plant theſe roots, after having drawn a line upon the border, make holes with a dibble about two inches deep or more, according to the lightneſs of the ſoil, and two inches diſtance from each other, in which you muſt place the roots with the bud uppermoſt; then with a rake fill up the holes in ſuch a manner as that the upper part of the root may be covered an inch or more, being careful not to leave any of the holes open; for this will entice the mice to them, and when once they have found them out, they will deſtroy all your roots, if not prevented.

This is the way in which theſe flowers were commonly diſpoſed in gardens, but the better way is to plant them ſix or eight near each other in bunches between ſmall ſhrubs, or on the borders of the flower-garden; where, if the varieties of theſe flowers are planted in different patches, and properly intermixed, they will make a much better appearance than when they are diſpoſed in the old method of ſtraight edgings.

In january, if the weather is mild, the Crocus will often appear above ground; and in february their flowers will appear, before the green leaves are grown to any length, ſo that the flower ſeems at firſt to be naked; but ſoon after the flowers decay, the green leaves grow to be ſix or eight inches long, which ſhould not be cut off until they decay, notwithſtanding they appear a little unſightly; for by cutting off the leaves, the roots will be ſo weakened as not to arrive at half their uſual bigneſs, nor will their flowers the ſucceeding year be half ſo large. Their ſeeds are commonly ripe about the latter end of april, or the beginning of may, when the green leaves begin to decay.

AUTUMNAL CROCUS.

The autumnal Crocuſes are not ſo great increaſers as are thoſe of the ſpring, nor do they produce ſeeds in our climate, ſo that they are leſs common in the gardens; theſe muſt be taken up every third year, otherwiſe the roots will run long, and produce no flowers; but they ſhould not be kept out of the ground longer than the beginning of auguſt, for they commonly produce their flowers the beginning of october; ſo that if they remain too long out of the ground, they will not produce their flowers ſo ſtrong, nor in ſuch plenty, as when they are planted early.

The method of cultivating Saffron, as it was preſented to the Royal Society, by Sir James Douglas.

1. *The choice and preparation of the ground.*—The greateſt part of the tract between Saffron Walden and Cambridge is an open level country, with few incloſures; and the cuſtom there is, to crop two years, and let the land be fallow the third. Saffron is generally planted upon fallow ground, and, all other things being alike, they prefer that which has borne Barley the year before.

The Saffron grounds are ſeldom above three acres, or leſs than one; and in chooſing, the principal thing they have to regard is, that they be well expoſed, the ſoil not poor, nor a very ſtiff clay, but a tema temperate dry mould, ſuch as commonly lies upon chalk, and is of an Hazel colour; though if every thing elſe anſwers, the colour of the mould is pretty much neglected.

[Profeſſor Bradley aſſerts (Huſb. & Gard. 2. 125.) that he has ſeen it proſpering well in common heath ground, where the ſurface had been burnt; and that ſome gentlemen had, by his advice, planted ſome acres of it on ſuch ground, hardly worth one ſhilling an acre, with ſucceſs. He doubts not but their example will be followed by many who have ſuch ſort of land; there being no want of manure in this caſe but the aſhes. In the true ſpirit of a projector he remarks, that the firſt promoters of this eaſy part of huſbandry will be the greateſt gainers, becauſe as it becomes more general, the price of Saffron will aſſuredly fall: nay, he even queſtions not, but in a few years, we ſhall ſee rather too much than too little, and that the markets will become overſtocked. This prophecy, however, has not been fulfilled, nor have we heard any more of the heath-culture of Saffron.]

The ground being made choice of, about Lady-day, or the beginning of april, it muſt be carefully ploughed, the furrows being drawn much cloſer together, and deeper, if the ſoil will allow it, than is done for any kind of corn; and accordingly the charge is greater.

About five weeks after, during any time in the month of may, they lay between twenty and thirty loads of dung upon each acre, and having ſpread it with great care, they plough it in as before. The ſhorteſt rotten dung is the beſt; and the farmers, who have the conveniency of making it, ſpare no pains to make it good, being ſure of a proportionable price for it. About Midſummer they plough a third time, and between every ſixteen feet and an half, or pole in breadth, they leave a broad furrow or trench, which ſerves both as a boundary to the ſeveral parcels, when there are ſeveral proprietors to one incloſure, and to throw the weeds in at the proper ſeaſon.

To this head likewiſe belongs the fencing of the grounds, becauſe moſt commonly, though not always, that is done before they plant. The fences conſiſt of what they call dead hedges, or hurdles, to keep out not only cattle of all ſorts, but eſpecially hares, which would otherwiſe feed on the Saffron leaves during the winter.

About the weather we need only obſerve, that the hotteſt ſummers are certainly the beſt, and therewith, if there be gentle ſhowers from time to time, they can hardly miſs of a plentiful crop, if the extreme cold, ſnow, or rain of the foregoing winter have not prejudiced the heads.

2. *Planting or ſetting the roots.*—The only inſtrument uſed for this is a narrow ſpade, commonly termed a ſpit ſhovel.

The time of planting is commonly in the month of july, a little ſooner or later, according as the weather anſwers. The method is this: one man with his ſpit ſhovel raiſes between three and four inches of earth, and throws it before him about ſix or more inches; two perſons, generally women, following with heads, place them in the fartheſt edge of the trench he makes, at three inches diſtance from each other, or thereabouts; as ſoon as the digger or ſpitter has gone once the breadth of the ridge, he begins again at the other ſide, and digging as before, covers the roots laſt ſet, and makes the ſame room for the ſetters to place a new row, at the ſame diſtance from the firſt, that they are from one another. Thus they go on, till a whole ridge, containing commonly one rod, is planted; and the only nicety in digging is, to leave ſome part of the firſt ſtratum of earth untouched, to lie under the roots, and, in ſetting, to place the roots directly upon their bottom.

What ſort of roots are to be preferred ſhall be ſhewn under the fourth head, but it muſt be obſerved in this place, that formerly, when roots were very dear, they did not plant them ſo thick as they do now; and that they have always ſome regard to the ſize of the roots, placing the largeſt at a greater diſtance than the ſmall ones.

The quantity of roots planted in an acre, is generally about ſixteen quarters, or a hundred and twenty-eight buſhels, which, according to the diſtances left between them, as before aſſigned, and ſuppoſing all to be an inch in diameter one with another, ought to amount to three hundred and ninety-two thouſand and forty in number.

From the time that the roots are planted, till about the beginning of ſeptember, or ſometimes later, there is no more labour about them; but as they then begin to ſpire, and are ready to ſhew themſelves above ground (which is known by digging a few out of the earth), the ground muſt be carefully pared with a ſharp hoe, and the weeds, &c. raked into the furrows, otherwiſe they would hinder the growth of the plants.

3. *Gathering and drying the flowers.*—In ſome time after appear the Saffron flowers, and this leads us to the third branch of our preſent method. The flowers are gathered as well before as after they are full blown, and the moſt proper time for this is early in the morning. The owners of the Saffron get together a ſufficient number of hands, who place themſelves in different parts of the field, pull off the whole flowers, and throw them handful by handful into a baſket, and ſo continue till all the flowers are gathered, which happens commonly about ten or eleven o'clock.

Having then carried home all they have got, they immediately ſpread them upon a large table, and fall to picking out the ſtigmas, and together with them a pretty long proportion of the ſtyle itſelf; the reſt of the flower they throw away as uſeleſs. The next morning they return into the field again, whether it be wet or dry weather, and ſo on daily, even on Sundays, till the whole crop be gathered.

The ſtigmas being all picked out of the flowers, the next labour is to dry them on the kiln. The kiln is built upon a thick plank, that it may be moved from place to place, ſupported by four ſhort legs; the outſide conſiſts of eight pieces of wood about three inches thick, in form of a quadrangular frame, about twelve inches ſquare at the bottom on the inſide, and twenty-two inches at top, which is likewiſe equal to the perpendicular height of it. On the foreſide is left a hole about eight inches ſquare, and four inches above the plank, through which the fire is put in; over all the reſt laths are laid pretty thick, cloſe to one another, and nailed to the frame already mentioned, and then are plaiſtered over on both ſides, as are alſo the planks at bottom very thick, to ſerve for a hearth. Over the mouth, or wideſt part, goes a hair cloth, fixed to the ſides of the kiln, and likewiſe to two rollers, or moveable pieces of wood, which are turned by wedges or ſcrews, in order to ſtretch the cloth. Inſtead of the hair cloth, many people now uſe a net-work, or iron wire, with which it is obſerved that the Saffron dries ſooner, and with leſs quantity of fuel; but the difficulty in preſerving the Saffron from burning, makes the hair cloth be preferred by the niceſt judges in drying.

The kiln is placed in a light part of the houſe, and they begin by laying five or ſix ſheets of white paper on the hair cloth, upon which they ſpread the wet Saffron between two and three inches thick; this they cover with other ſheets of paper, and over theſe lay a coarſe blanket five or ſix times doubled, or, inſtead thereof, a canvas pillow filled with ſtraw; and after the fire has been lighted ſome time, the whole is covered with a board, having a large weight on it.

At firſt they give it a pretty ſtrong heat, to make the chives ſweat (as their expreſſion is;) and in this, if they do not uſe a great deal of care, they are in danger of ſcorching, and ſo of ſpoiling all that is on the kiln.

When it has been thus dried about an hour, they take off the board, blanket, and upper papers, and take the Saffron off from that which lies next it, raiſing at the ſame time the edges of the cake with a knife; then laying on the paper again, they ſlide in another board between the hair cloth and upper papers, and turn both papers and Saffron upſide-down, afterwards covering them as above.

The ſame heat is continued for an hour longer; then they look on the cake again, free it from the papers, and turn it; then they cover it, and lay on the weight as before. If nothing happens amiſs during theſe firſt two hours, they reckon the danger to be over; for they have nothing more to do but to keep a gentle fire, and to turn their cakes every half hour till thoroughly dry, for the doing of which as it ought, there are required full twenty-four hours.

In drying the larger plump threads they uſe nothing more, but towards the latter end of the crop, when theſe come to be ſmaller, they ſprinkle the cake with a little ſmall beer, to make it ſweat as it ought; and they begin now to think that uſing two linen cloths next the cake, inſtead of the two innermoſt papers, may be of ſome advantage in drying, but this practice is followed but by few.

Their fire may be made of any kind of fuel, but that which ſmokes the leaſt is beſt, and charcoal, for that reaſon, is preferred to any other.

What quantity of Saffron a firſt crop will produce, is very uncertain; ſometimes five or ſix pounds of wet threads are got from one rood, ſometimes not above one or two, and ſometimes not enough to make it worth while to gather and dry it; but this is always to be obſerved, that about five pounds of wet Saffron go to make one pound of dry, for the firſt three weeks of the crop, and ſix pounds during the laſt week; and when the heads are planted very thick, two pounds of dried Saffron may, at a medium, be allowed to an acre for the firſt crop, and twenty-four pounds for the two remaining, the third being conſiderably larger than the ſecond.

In order to obtain theſe, there is only a repetition to be made every year of the labour of hoeing, gathering, picking, and drying, in the ſame manner as before ſet down, without the addition of any thing new, except that they let cattle into the fields, after the leaves are decayed, to feed upon the weeds, or, perhaps, mow them for the ſame uſe.

4. *Management of the roots.*—About the Midſummer after the third crop is gathered, the roots muſt be all taken up and tranſplanted. To take up the Saffron heads, or break up the ground (as the term is,) they ſometimes plough it, ſometimes uſe a forked kind of hoe, called a pattock, and then the ground is harrowed once or twice over; during all which time of ploughing, or digging, and harrowing, fifteen or more people will find work enough to follow and gather the heads as they are turned up.

They are next to be carried to the houſe in ſacks, and there cleaned and raſed; this labour conſiſts in cleaning the roots thoroughly from earth, and from the remains of old roots, old ſkins and excreſcences, and thus they become fit to be planted in new ground immediately, or to be kept for ſome time without danger of ſpoiling.

The quantity of roots taken up, in proportion to thoſe which were planted, is uncertain; but at a medium, it may be ſaid, that allowing for all the accidents which happened to them in the ground, and in breaking up from each acre, may be had twenty-four quarters of clean roots, all fit to be planted.

The owners are ſure to chooſe for their own uſe the largeſt, plumpeſt, and fatteſt roots, but do leaſt of all approve the longeſt pointed ones, which they call ſpickets, or ſpickards, for very ſmall, round, or flat roots, are ſometimes obſerved to flower well.

This is the whole culture of Saffron in the country above-mentioned, and we have only now to conſider the charges and profits which may be ſuppoſed, one year with another, to attend that branch of agriculture; and of theſe I have drawn up the following computation for one acre of ground, according to the price of labour in this country.

	l.	s.	d.
Rent for three years	3	0	0
Ploughing for three years	0	18	0
Dunging	3	12	0
Hedging	1	16	0
Spitting and ſetting the heads	1	12	0
Weeding or paring the ground	1	4	0
Gathering and picking the flowers	6	10	0
Drying the flowers	1	6	0
Inſtruments of labour for three years, with the kiln, about	0	10	0
Ploughing the ground once, and harrowing twice	0	12	0
Gathering the Saffron heads	1	0	0
Raiſing the heads	1	12	0
Total charge	23	12	0

This calculation is made upon ſuppoſition, that an acre of ground yields twenty-ſix pounds of nett Saffron in three years, which I ſtated only as a mean quantity between the greateſt and the leaſt; and therefore the price of Saffron muſt be judged accordingly, which I think cannot be done better than by fixing it at thirty ſhillings per pound; ſince in very plentiful years it is ſold at twenty, and is ſometimes worth between three and four pounds; at this rate, twenty-ſix pounds of Saffron are worth thirty-nine pounds, and the nett profits of an acre of ground producing Saffron, will, in three years, amount to fifteen pounds, thirteen ſhillings, or about five pounds four ſhillings yearly.

This, I ſay, may be reckoned the nett profit of an acre of Saffron, ſuppoſing that all the labour were to be hired for ready money; but as the planter and family do a conſiderable part of the work themſelves, ſome of this expence is ſaved; that is, by planting Saffron, he may not only reaſonably expect to clear about five pounds yearly per acre, but alſo to maintain himſelf and family for ſome part of each year; and it is upon this ſuppoſition only, that the reſult of other computations can be ſaid to have any tolerable degree of exactneſs, but the calculations themſelves are undoubtedly very inaccurate.

I have ſaid nothing here concerning the charge in buying, or profits in ſelling, the Saffron heads, becauſe, in many large tracts of ground, theſe muſt at length balance one another, while the quantity of ground planted yearly continues the ſame, which has been pretty much the caſe for ſeveral years paſt.

[Crocus. See *Hypoxis*, *Ixia*, *Memecylon*.

Crossopetalum. See *Rhacoma*.

CROSSOSTYLIS. (*From* Κροσσος, *a fringe, and* ϛυλις, *a little pillar or ſtyle: the ſtigma being fringed or jagged.*)

Lin. gen. Schreb. n. 1149. *Forſt. gen. t.* 44. *Juſſ.* 432.

Claſſ. 16. 6. Monadelphia Polyandria.

GENERIC CHARACTER.

Cal. *Perianth* turbinate, quadrangular, faſtened to the germ, four-parted: *ſegments* ovate, ſpreading, permanent.

Cor. *Petals* four, elliptic; *claw* narrow, inſerted into the calyx.

Nectary: corpuſcles twenty, filiform, ciliate, between the ſtamens.

Stam. *Filaments* twenty, filiform, ſhorter than the calyx, connected at the baſe into a little pitcher. *Anthers* ſmall, roundiſh.

Pist. *Germ* convex, ſuperior. *Style* cylindric, the length of the ſtamens, permanent. *Stigmas* four, ſpreading very much, trifid.

Per. Berry? hemiſpherical, grooved, one-celled.

Seeds very many, on a columnar receptacle in the centre of the fruit.

ESSENTIAL CHARACTER.

Cal. ſimple, four-parted. *Cor.* four-petalled. *Nect.* twenty corpuſcles between the filaments. *Stigmas* four, jagged. *Berry?*

SPECIES.

1. Croſſoſtylis biflora.

Forſt. gen. 88. *flor. auſtral. n.* 266.

Native of the Society iſles.

Cross-wort. See *Valantia.*]

CROTALARIA. (*From the form of the legume like a* κροταλον. *Linn.—Becauſe the ſeeds in the ripe cods make a rattling noiſe when ſhaken, like a Crotalum; or becauſe the children of the Indians uſe them inſtead of rattles. Miller.*)

Lin. gen. n. 862. *Reich.* 934. *Schreb.* 1172. *Dill. elth.* 122. *Gærtn. t.* 148.

Claſſ. 17. 4. Diadelphia Decandria.

Nat. order of *Papilionaceæ*; or *Leguminoſæ.* Juſſ. 354.

GENERIC CHARACTER.

Cal. *Perianth* three-parted, large, rather ſhorter than the corolla: the *two ſuperior diviſions* lanceolate, leaning on the ſtandard; the *third* lanceolate, concave, ſupporting the keel, three-cleft.

Cor. papilionaceous:

Standard cordate, acute, large, depreſſed on the ſides. *Wings* ovate, ſhorter by half than the ſtandard. *Keel* acuminate, length of the wings.

Stam. *Filaments* ten, connate, riſing, with a ſplit line on the back, and gaping baſe. *Anthers* ſimple.

Pist. *Germ* oblong, reflex, hirſute. *Style* ſimple, bent inwards at an angle, riſing. *Stigma* obtuſe.

Per. *Legume* ſhort, turgid, one-celled, two-valved, pedicelled.

Seeds one or two, globoſe-kidney-form.

Obs. *There is the greateſt affinity between* Crotalaria *and* Ononis.

Cr. laburnifolia *has the keel broad, compreſſed, and beaked; and the wings ſhorter by half than the ſtandard and keel.*

ESSENTIAL CHARACTER.

Legume turgid, inflated, pedicelled. *Filaments* connate, with a fiſſure on the back.

SPECIES.

* *Leaves ſimple.*

[1. Crotalaria perforata. *Perforated Crotalaria.*

Lin. ſpec. 1003. *Reich.* 3. 418. *mant.* 439. *amœn.* 6. *afr.* 38.

Leaves perfoliate, cordate, toothletted.]

2. Crotalaria perfoliata. *Perfoliate Crotalaria.*

Lin. ſpec. 1003. *Reich.* 3. 419. *Dill. elth.* 122. *t.* 102. *f.* 122.

Leaves perfoliate, cordate-ovate.

[3. Crotalaria amplexicaulis. *Stem-claſping Crotalaria.*

Lin. ſpec. 1003. *Reich.* 3. 419. *amœn.* 6. *afr.* 39. *Seba theſ.* 1. *t.* 24. (*Geniſta.*)

Stem-leaves claſping cordate alternate; floral-leaves oppoſite kidney-ſhaped coloured; flowers ſolitary.]

4. Crotalaria ſagittalis. *Virginian Crotalaria.*

Lin. ſpec. 1003. *Reich.* 3. 419. *hort. cliff.* 357. *Swartz obſ.* 278. *Gron. virg.* 105. *Mart. cent.* 43. *Herm. lugdb. t.* 203. *Pluk. alm. t.* 169. *f.* 6.

C. piloſa. *Mill. dict. n.* 2.

β. *Pluk. alm.* 122. *t.* 277. *f.* 2.

C. ſagittalis. *Mill. dict. n.* 3.

Leaves lanceolate, ſtipules (*not petioles*) *decurrent, ſolitary two-toothed.*

[5. Crotalaria chinenſis. *Chineſe Crotalaria.*

Lin. ſpec. 1003. *Reich.* 3. 419.

Leaves ovate ſubpetioled, ſtipules very minute.]

6. Crotalaria juncea. *Channel-ſtalked Crotalaria.*

Lin. ſpec. 1004. *Reich.* 3. 420. *mant.* 439. *hort. cliff.* 357. *upſ.* 210. *Trew. Ehret. t.* 47. *Pluk. alm. t.* 69. *f.* 5. *Rheed. mal.* 9. 47. *t.* 36.

Leaves lanceolate, petiolate-ſeſſile; ſtem ſtriated.

[7. Crotalaria imbricata. *Imbricate-leaved Crotalaria.*

Lin. ſpec. 1004. *ſyſt.* 649. *Reich.* 3. 420. *amœn.* 6. *afr.* 40. *Berg. cap.* 192. *Pluk. mant. t.* 388. *f.* 3.

Leaves ovate acute villoſe ſeſſile, flowers ſubſeſſile.]

8. Crotalaria retuſa. *Wedge-leaved Crotalaria.*

Lin. ſpec. 1004. *ſyſt.* 649. *Reich.* 3. 420. *fl. zeyl. n.* 276. *Gærtn. fruct.* 2. 316. *Herm. lugdb. t.* 201. *Rumph. amb.* 5. 278. *t.* 96. *f.* 1. *Rheed. mal.* 9. 45. *t.* 25. *Forſk. ægypt.* 134. *n.* 16. (Dolichos.)

Leaves oblong wedge-ſhaped retuſe.

[9. Crotalaria ſeſſiliflora. *Seſſile-flowered Crotalaria.*

Lin. ſpec. 1004. *ſyſt.* 649. *Reich.* 3. 420.

Leaves lanceolate ſubſeſſile; flowers ſeſſile lateral; ſtem equal.

10. Crotalaria triflora. *Three-flowered Crotalaria.*

Lin. ſpec. 1004. *ſyſt.* 649. *Reich.* 3. 421. *mant.* 440. *Berg. cap.* 193.

Leaves ovate ſeſſile ſmooth; branches angular; peduncles in threes, lateral one-flowered.]

11. Crotalaria verrucoſa. *Blue-flowered Crotalaria.*

Lin. ſpec. 1005. *Reich.* 3. 421. *fl. zeyl.* 277. *hort. cliff.* 357. *Burm. zeyl.* 81. *t.* 34. *Herm. lugdb. t.* 199. *Raii hiſt.* 1893. *Rheed. mal.* 9. 53. *t.* 29.

Leaves ovate; ſtipules lunate declined; branches four-cornered.

[12. Crotalaria biflora.

Lin. ſyſt. 649. *Reich.* 3. 421. *mant.* 516. 570. *Burm. ind.* 156. *t.* 48. *f.* 2. *Pet. gaz. t.* 30. *f.* 10.

Aſtragalus biflorus. *Lin. mant.* 273.

Leaves obtuſe; ſtems proſtrate herbaceous, peduncles two-flowered.

13. Crotalaria oppoſita.

Lin. ſyſt. 650. *ſuppl.* 322.

Liparia oppoſita. *Lin. ſyſt. ed.* 13. 554.

Spartium capenſe. *Lin. ſpec.* 995.

Smooth, without ſtipules; leaves oblong ſeſſile; peduncles axillary two-leaved.

14. Crotalaria linifolia. *Flax-leaved Crotalaria.*

Lin. ſyſt. 650. *ſuppl.* 322. *Rumph. amb.* 5. *t.* 96. *f.* 1. *Retz.*

Hirſute; leaves linear obtuſe hirſute petioled without ſtipules; ſtem angular; raceme terminating.

15. Crotalaria bifaria.

Lin. ſyſt. 650. *ſuppl.* 322.

Pubeſcent, diffuſed, ſtipuled; leaves in two rows, the lower orbicular, the upper oblong; peduncles one-flowered.

** *Leaves compound.*

16. Crotalaria lotifolia. *Lotus-leaved Crotalaria.*

Lin. ſpec. 1005. *Reich.* 3. 422. *Dill. elth.* 121. *t.* 102. *f.* 121. *Sloan. jam.* 2. 33. *t.* 176. *f.* 1, 2. *Raii ſuppl.* 465.

Leaves ternate obovate; flowers lateral ſubracemed.

17. Crotalaria lunaris.

Lin. ſpec. 1005. *Reich.* 3. 422. *hort. cliff.* 357.

Leaves ternate ovate acute; ſtipules ſemicordate lunate.]

18. Crotalaria laburnifolia.

Lin. ſpec. 1005. *ſyſt.* 650. *Reich.* 3. 422. *fl. zeyl.* 278. *Herm. lugdb. t.* 197. *Raii hiſt.* 1893. 1. *Burm. zeyl.* 82. *t.* 35. *Rheed. mal.* 9. 49. *t.* 27.

Leaves ternate ovate acuminate; ſtipules none; legumes pedicelled.

[19. Crotalaria cordifolia. *Heart-leaved Crotalaria.*

Lin. ſyſt. 650. *Reich.* 3. 423. *mant.* 266.

Spartium ſophoroides. *Berg. cap.* 198.

Leaves ternate obcordate mucronate; flowers in corymbs; ſtem ſhrubby.

20. Crotalaria incana. *Hoary Crotalaria.*

Lin. ſpec. 1005. *Reich.* 3. 423. *mant.* 440. *Swartz. obſ.* 278. *Jacqu. obſ.* 4. *t.* 82. *Sloan. jam.* 2. 34. *t.* 179. *f.* 1. *Raii ſuppl.* 466. 18. *Riv. tetr. t.* 138. (*C. trifolia.*)

Leaves ternate oval villoſe beneath; racemes ſpike-form; keel tomentoſe at the edge; legumes ſeſſile hirſute.

21. Crotalaria incaneſcens. *Spreading ſhrubby Crotalaria.*

Lin. ſyſt. 650. *ſuppl.* 323.

C. capenſis. *Jacqu. hort.* 3. 36. *t.* 64.

Leaves ternate. obtuſe; ſtipules leafy; branches hoary.

22. Crotalaria heterophylla.

Lin. ſyſt. 650. *ſuppl.* 323.

Leaves ternate elliptic emarginate, the lower ſimple.

23. Crotalaria quinquefolia. *Five-leaved Crotalaria.*
Lin. ſpec. 1006. *Reich.* 3. 423. *Rheed. mal.* 9. 51. *t.* 28. *Raii ſuppl.* 465. 11.
Leaves quinate.

24. Crotalaria floribunda. *Small-flowered Crotalaria.*
Ait. hort. kew. 3. 19.
Leaves ternate wedge-form; branches pubeſcent, legumes pedicelled ſmooth wrinkled compreſſed keeled.

25. Crotalaria axillaris. *Two-flowered Crotalaria.*
Ait. hort. kew. 3. 20.
Leaves ternate ovate-elliptic hairy beneath; ſtipules ſubulate minute; peduncles axillary twin one-flowered.

26. Crotalaria pallida. *Pale-flowered Crotalaria.*
Ait. hort. kew. 3. 20.
Leaves ternate lanceolate ſmooth; racemes terminating ſpike-form.

* *Leaves ſimple.*

27. Crotalaria ſericea. *Silky-leaved Crotalaria.*
Retz. obſ. 5. *n.* 69.
Leaves lanceolate acute ſilky beneath; racemes elongated.

Mr. Miller has three other ſpecies.

28. Crotalaria fruticoſa.
Mill. dict. n. 4. *Houſt. Mſs.*
Leaves ſimple linear-lanceolate hirſute, petioles decurrent; ſtem ſhrubby.

29. Crotalaria villoſa.
Mill. dict. n. 8. *Lin. hort. cliff.* 357. *Herm. lugdb.* 170.
Leaves ſimple ovate villoſe; petioles entirely ſimple; branches round.

30. Crotalaria angulata.
Mill. dict. n. 9.
Leaves ovate ſeſſile; branchlets angular hirſute; flowers lateral very ſimple.

From Loureiro.

31. Crotalaria heptaphylla. *Seven-leaved Crotalaria.*
Lour. cochinch. 433.
Leaves pinnate with ſeven leaflets, ſpikes long, ſtem arboreous.

32. Crotalaria ſcandens. *Climbing Crotalaria.*
Lour. cochinch. 433.
Leaves oblong, peduncles many-flowered axillary, ſtem ſhrubby climbing.

DESCRIPTIONS, *&c.*

The plants of this genus are either herbs or ſhrubs; the leaves either ſimple, ternate, or in ſome few caſes digitate; ſtipules either ſcarcely any, or conſpicuous, and for the moſt part diſtinct from the petiole; flowers generally in ſpikes, in ſome ſpecies terminating, in others axillary, or elſe oppoſite to the leaves; the legume in moſt is ſhort, with only one or two ſeeds in it, but in ſome it is longer, and contains ſeveral ſeeds. The genus ought certainly to be reformed, and ſome of the ſpecies referred to other genera[a].

Dillenius diſtinguiſhes it from Anonis or Ononis, by the greater length and more ſwelling form of the legumes; he obſerves alſo that they are pendulous in this genus: that the plant has no ſpines; that the leaves are not ſerrate, and the petioles not leafy.

1. Height eight feet. Stem ſmooth and even, with alternate branches. Leaves ſmooth, veined, ſcarcely an inch in length. The flowers ſmooth, yellow, in a kind of umbel, two together, terminating the branches. Standard hoary, pubeſcent on the outſide. Legumes compreſſed, ſmooth, not pedicelled, acute.

Native of the Cape of Good Hope[b]; where a decoction of the leaves is eſteemed a powerful diuretic.]

2. Stem ſhrubby, four or five feet high, round, covered with a light-brown bark. Leaves ſmooth, about four inches long, and near three broad, [reſembling much thoſe of our common *Thorough-wax* (Bupleurum) both in ſize and ſhape, but they are ſtiffer and more veined. The flowers are almoſt as large as thoſe of the Pea, all the petals being large.] They are of a pale yellow colour, and come out ſingly from the upper part of the branches, ſitting cloſe in the axils of the leaves; and appear in auguſt. [Legume ſmooth, cartilaginous, browniſh. It has the appearance of being ſhrubby, but the branches periſh every year. Its height is two feet, and it grows in open woods two hundred miles to the back of the ſettlements in Carolina. It was cultivated, but did not flower, in the Eltham garden, about the year 1732[c].] Mr. Miller had it from Dr. Dale, probably at the ſame time; it flowered with him, but did not produce any pods.

[3. This is a ſmooth ſhrub. Leaves ſmooth. Flowering branches dichotomous; the flowers yellow, peduncled, from the diviſions.

Native of the Cape of Good Hope[d].

4. Root annual. Stem herbaceous, half a foot high and more, erect, ſubdivided, ſtrict, round, pubeſcent. Leaves on very ſhort petioles, alternate, entire, rounded at the baſe, hoary underneath, and ſomewhat hirſute; (but ſometimes ſmooth.) Stipules at the ſides of the petioles, decurrent, bifid at the top, acute, as it were ſagittate. Peduncles terminating, ſolitary, oppoſite to the petioles, ſtrict, round, two or three-flowered. Flowers yellow, pedicelled. Calyx five-parted; two ſegments poſterior, three anterior, ovate-lanceolate, hirſute: at the baſe are two or three leaflets. Standard of the corolla roundiſh, erect, ſpreading, pale: wings ovate, embracing the keel; which is bifid at the baſe, and blunt at the end. Five of the filaments ſhorter than the other five: anthers oblong, thoſe of the ſhorter filaments ſmaller, roundiſh. Legume ſubſeſſile, almoſt cylindric, veined, pellucid, when ripe blackiſh. Seeds pedicelled, fixed to the ſuture in a quadruple row, kidney-form, ſhining[e].

Native of South America and Jamaica. It was firſt raiſed here in the botanic garden at Chelſea, from ſeeds ſent by Mr. Robert Millar, Surgeon, from Porto Bello, in the year 1734[f].]

Miller makes two ſpecies of this, 1. C. piloſa, n. 2. the ſeeds of which were ſent from La Vera Cruz by Dr. Houſtoun. 2. C. ſagittalis, n. 3. which Dr. Dale ſent him from South Carolina; and Dr. Houſtoun from Jamaica; ſo that it grows naturally in ſeveral parts of America. The latter is a lower plant, and the flowers are not more than half the ſize of the others.

[5. Shrubby. Stems and branches pubeſcent, round. Leaves bluntiſh, very entire, ſomewhat hairy on both ſides. Racemes few-flowered, rough with hairs. Bractes lanceolate, the length of the peduncles. Calyxes rough with hairs, the length of the corolla; which is yellow, with a ſtriated banner. Stipules ſubulate. Native of China[g].]

6. This riſes with an angular, ruſhy, ſtiff ſtem, from three to near four feet in height, dividing into three or four branches. Leaves narrow-lanceolate, alternate, cloſely covered with ſoft ſilvery hairs, on very ſhort petioles. The flowers are produced at the ends of the branches, in looſe ſpikes. [Upper lip of the calyx two-parted; lower boat-form, obſcurely three-toothed. Corolla large, deep yellow, with the axils of the wings black, having the appearance of Spaniſh Broom, (Spartium junceum.)[h]] The ſtyle ſtands out beyond the ſtandard. The flowers are ſucceeded by large turgid pods, containing one row of large kidney-ſhaped ſeeds.

Native of the Eaſt-Indies. The ſeeds were brought to Mr. Miller from the coaſt of Malabar before 1768, and ſucceeded in the Chelſea garden.

[7. This is a ſhrub, warted with knots from the fallen leaves: theſe are crowded, ſubimbricate, ſilky, ſmall, without ſtipules. Flowers ſolitary, purple. Native of the Cape of Good Hope[i].]

8. This riſes with an herbaceous ſtem near three feet high, dividing into ſeveral branches. Leaves pale green and ſmooth, [obovate with a recurved point, whence they are retuſe. Stipules very ſmall,

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[a] Juſſieu.

[b] Linn. mant. & amoen.

[c] Dillenius.

[d] Linn. amoen.

[e] Swartz.

[f] Mart. cent.

[g] Linn. ſpec.

[h] Ibid.

[i] Linn. amoen.

ſubulate, ſtanding out.] The flowers are produced in ſpikes at the end of the branches; they are pretty large, and of a yellow colour, [with the banner often purpliſh above. Legume ſmooth, cylindric, horizontal [k]; widening upwards, inflated, turgid at the ſides, depreſſed along the ſeed-bearing ſuture, and towards the baſe gradually attenuated into the peduncle. Seeds from fifteen to twenty, three-cornered-reniform, ending in a hooked beak remote from the ſeed, ſmooth, ſhining, dark-cheſtnut colour [l].

Native of the Eaſt-Indies. Annual. Cultivated by Miller in 1731 [m].] He received the ſeeds from Boerhaave. It flowers in july; and the ſeeds ripen in autumn, provided the plants are brought forward in the ſpring.

[9. Annual. Scarcely a foot high. Stem erect, round, little branched, ſtriate-furrowed. Leaves ſmooth on their upper ſurface, hairy on their lower. Stipules hardly viſible. Flowers axillary, blue; with two oblong bractes.—Native of China [n].

10. The whole plant is ſmooth. Leaves almoſt three inches in length. Bractes from the axils of the leaves towards the top, in threes, a little ſmaller than the leaves, and the length of the flowers.—Native of the Cape [o]. Biennial: flowering in june. Introduced 1786, by Mr. Francis Maſſon [p].]

11. This is an annual plant. Stem herbaceous, four-cornered, two feet high, [erect, flexuoſe]; dividing into three or four branches at top, which have alſo four acute angles. Leaves warted, pale green, on very ſhort petioles. [Racemes terminating: flowers alternate, ſmooth [q],] of a light blue colour; ſucceeded by ſhort turgid pods, incloſing one row of kidney-ſhaped ſeeds. It flowers in july and auguſt, and the ſeeds ripen in autumn. Native of the Eaſt-Indies. [Cultivated 1731, by Mr. Miller [r].

12. Stem erect, a palm in height, round, hairy, terminated by the peduncle. Branches from the baſe of the ſtem, many, alternate, ſimple, much longer than the erect ſtem. Leaves alternate, on very ſhort petioles, elliptic or oval-oblong, without veins, a little hairy, an inch in length. Peduncles terminating; but on the branches, the branch extending itſelf beyond the flower, they become lateral. Corolla yellow; the banner ovate, aſcending, the length of the calyx; (which is divided into five parts, the upper part bifid) wings oblong, preſſed cloſe; keel ventricoſe, beaked. Filaments alternately longer and ſhorter; anthers oblongiſh, but on the barren filaments round. Germ ovate, with a villoſe ſtigma. Legume twin-globular (becoming by culture ſubcylindric) inflated, one-celled, containing ſeveral ſeeds, on ſtiff, briſtle-form pedicels. There is no diſtinct ſtamen in the flower.—In the garden it puts on an appearance very different from what it has in its native ſoil, in the Eaſt-Indies. Koenig found it in the iſland of St. Johanna [s].

13. Shrubby, ſtems ſimple, very ſmooth. Leaves obtuſe, erect. Peduncles on the top of the ſtem, elongated, with a pair of leaves towards the flower, like thoſe of the ſtem. The flower comes out between the leaves of the peduncle, is ſingle, nodding and yellow. Found by Thunberg at the Cape of Good Hope [t].

14. Stems erect, filiform, ruſhy, ſimple, hirſute, hoary. Leaves on very ſhort petioles, and ſhorter. Racemes long. Flowers nodding, yellow. Legumes ſhort, obtuſe. It is like enough to *C. juncea* n. 6. Obſerved by Koenig, in the Eaſt Indies [u].

15. Stems diffuſed, round, pubeſcent. Leaves on ſhort petioles, ſpreading very much. Stipules ovate, tubular, reflex. Peduncles terminating, erect, long, filiform. Bractes two, near the flower, on the peduncle, oppoſite, like ſtipules. Corollas blueiſh, of the larger ſize. Legumes oblong with an acumen, hiſpid.—It varies in the form of the leaves. Found by Koenig, in the queen of Tanjour's garden, Amma Koil [x].

16. Stems ſarmentoſe, ſlender and weak, at bottom ſtiff and woody, but higher up, herbaceous, round, from a foot to eighteen inches in height, and more; about the middle dividing into branches, which are not very frequent, on which at ſhort intervals grow ſmooth ternate leaves, with a pair of ſtipules at the baſe of each petiole. Flowers axillary, on peduncles ſhorter than in ſome other ſpecies, three or four together, yellow, reſembling thoſe of the common Lotus; the banner larger than the other petals, and reflex, but the edges inflex, marked with ſo many red lines on the hinder part, as to appear wholly red there; wings and keel unſpotted, the latter greeniſh yellow; the wings converge and cover the keel. Legumes from one to three, ſubhirſute, ſwelling, rattling when the ſeeds are ripe.—The ſeeds came either from the Havanna or Mexico [y]. It is a native of Jamaica. Flowers in june and july; and was cultivated in the Eltham garden, 1732 [z].

17. Native of the Cape of Good Hope.]

18. Stem ſhrubby, four or five feet high, dividing into many branches. Flowers large, yellow, in large bunches from the ſide of the branches, appearing from july to ſeptember, and making a fine appearance.

[Annual. Plant ſmooth. Legume in the calyx peduncled. Keel of the corolla broad, compreſſed, beaked; wings half the length of that and the banner [a].

19. A ſhrub, eight feet in height, branched: branches ſomewhat angular, with truncated ſcars. Leaves petioled; leaflets ſmooth, ſharp at the baſe, nearly equal. Petioles ſhorter than the leaves. Stipules briſtle-form, minute. Corymbs terminating, ſolitary, ovate: peduncles, calyxes and corollas violet-coloured. The flower reſembles that of *Sophora biflora.* Stamens connate. Native of the Cape, on rocks [b].

20. Root annual. Stem from two to four feet high, almoſt ſimple, erect, pubeſcent. Leaves elliptic, entire, nerved. General petioles long, angular, horizontal, pubeſcent; partial very ſhort, round. Stipules ſolitary, deciduous. Flowers ſubracemoſe, greeniſh yellow, rather large. Peduncles three or four-flowered, ſhort, axillary. Pedicels longer than the peduncles. Bractes two, ſubulate (ſetaceous. Lin.) under each flower. Calyx five-cleft, ſilky. Standard of the corolla fulvous, ſtreaked; the reſt yellow. Stigma acute. Legume ſubſeſſile, turgid-inflated, villoſe-pubeſcent, beaked with the permanent ſtyle. Seeds oblong. It has the common ſmell of the leguminoſe tribe, but is fetid [c].

Native of the Weſt-Indies. It flowers in june and july. Cultivated 1714, by the Dutcheſs of Beaufort [d].

21. A ſhrub with hoary branches, very finely white-tomentoſe, in which it differs evidently from *C. laburnifolia*, which is ſmooth. Leaves petioled, naked; leaflets oval, nearly equal; petioles hoary. Stipules two, at the origin of each petiole, exactly reſembling the leaves, only of half the length. Panicles ſmall, ſimple. Flowers yellow: wings ſhorter than the keel, which is lunate, and ſomewhat beaked.—It ſeems to be only a variety of *C. laburnifolia*, for the ſtipules drop, after it has flowered [e].

Native of the Cape of Good Hope; flowering from june to october. Introduced 1774, by Mr. Francis Maſſon [f].

22. Annual. Stem erect, a foot high, ſmooth, a little branched at top. Lower ſtem-leaves elliptic, oleraceous, ſmooth, ribbed with nerves: upper obovate, alike. Petioles very ſhort, channelled. Stipules ſmall, ſubulate, patulous. Raceme when flowering terminating, when fruiting lateral. Corollas yellow, ſomewhat teſtaceous on the outſide,

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[k] Linn. ſpec.
[l] Gærtner.
[m] Hort. kew.
[n] Linn. ſpec.
[o] Linn. ſpec. & mant.
[p] Hort. kew.
[q] Linn. zeyl.
[r] Hort. kew.
[s] Linn. mant.
[t] Linn. ſuppl.
[u] Ibid.

[x] Linn. ſuppl.
[y] Dillenius.
[z] Hort. kew.
[a] Linn. ſpec. & ſyſt.
[b] Linn. mant.
[c] Swartz.
[d] Hort. kew.
[e] Linn. ſuppl.
[f] Hort. kew.

ſtriate-nerved. Legumes ſmooth. Native of the Eaſt-Indies [g].

23. Leaflets narrow-lanceolate, obtuſe, often retuſe, almoſt naked, the ſide ones ſhorter. Calyxes bell-ſhaped. Flowers in racemes, alternate, ſmooth. Native of the Eaſt-Indies [h].

24. Native of the Cape of Good Hope. Found there by Mr. William Paterſon. It is ſhrubby, and flowers in july and auguſt. Introduced 1780, by the Counteſs of Strathmore.

25. Native of Guinea. Found there by Mr. William Braſs. It is annual, and flowers in july. Introduced 1781, by the Earl of Tankerville and Dr. Pitcairn.

26. Native of Africa. Found there, by James Bruce, Eſq. It is annual, and flowers in june and july. Introduced 1775 [i].

27. A lofty plant, appearing to be ſhrubby, but in reality annual. Stem branched, ſtriated. Leaves on ſhort petioles, oblong, lanceolate, with a minute point, decreaſing towards the petiole, the upper ſurface ſmooth. Stipules ſemicordate, acuminate. Racemes ſimple, terminating and axillary. Bractes cordate, acuminate. Flowers peduncled, ſolitary, yellow. Peduncles having two or three ſmall bractes in the middle. Upper lip of the calyx deeply bifid; lower three-toothed, with the teeth lanceolate. Style thickening towards the ſtigma, hairy. Communicated by Koenig [k].]

28. The twenty-eighth ſort grows naturally in Jamaica, whence the ſeeds were ſent me by the late Dr. Houſtoun; this riſes with a ſhrubby taper ſtalk near four feet high, ſending out many ſide branches, which are very ſlender, ligneous, and covered with a light brown bark; the younger ſhoots have a leafy border or wing on two ſides, but the old branches have none; the flowers are produced near the end of the branches, three or four growing alternate on a looſe ſpike; they are of a dirty yellow, and ſmall; the pods which ſucceed them are about an inch long, very turgid, and of a dark blue when ripe.

29. The twenty-ninth ſort grows naturally at the Cape of Good Hope, whence I received the ſeeds. This riſes with a ſhrubby ſtalk about five feet high, dividing into ſeveral branches, with roundiſh leaves, ſitting cloſe to the branches; they are of a hoary green, and ſoft to the touch, the branches are taper and ſmooth; the flowers are produced at the end of the branches in looſe ſpikes; they are about the ſize of thoſe of the eleventh ſort, and of a fine blue colour. They come out in june and july, and in warm ſeaſons the ſeeds ripen in autumn.

30. This is an annual plant, riſing with a taper upright ſtem near three feet high, dividing at top into ſeveral hairy upright branches. Leaves ovate-lanceolate, pale green. The flowers are produced ſingly from the ſide of the branches, are of a bright yellow, and are ſucceeded by ſhort turgid pods, having one row of kidney-ſhaped ſeeds. It flowers in july and auguſt, and will perfect ſeeds in autumn. It was ſent from Campeachy, where it grows naturally.

[31. This is a tree ten feet in height, with diffuſed branches. Leaves unequally pinnate; leaflets ovate-oblong, veined, ſubtomentoſe; petioles ſhort. Flowers white, axillary and terminating, in long ſimple ſolitary ſpikes. Calyx five-toothed, villoſe, ſhort. Standard of the corolla emarginate, riſing: wings oblong, half the length of the ſtandard: keel bent in, ſhorter than the wings. Legume pedicelled, turgid, villoſe, unequal. Seeds few, roundiſh.

32. This is a large ſhrub, with long, woody, ſcandent branches. Leaves ovate-oblong, acuminate, quite entire, ſmooth, alternate, petioled. Flowers white. Calyxes ſmooth. Petals nearly equal, ſpreading. Legume turgid, acuminate at both ends; containing few ſeeds. This and the preceding are natives of Cochinchina [l].]

PROPAGATION AND CULTURE.

Moſt of theſe plants are propagated by ſeeds, which muſt be ſown upon a hot-bed in the ſpring, and when the plants are come up an inch high, they ſhould be tranſplanted to another hot-bed to bring them forward, obſerving to ſhade them from the ſun till they have taken new root; after which they ſhould have free air admitted to them in proportion to the warmth of the ſeaſon, to prevent their being drawn up weak. When the plants have acquired ſtrength in this bed, they ſhould be carefully taken up, with balls of earth to their roots, and each planted in a ſeparate pot, filled with light kitchen-garden earth, and plunged into a moderate hot-bed of tanner's bark, carefully ſhading them till they are rooted again; then they muſt be treated in the ſame manner as other tender exotic plants, giving them proper air and water in warm weather; when the plants are grown ſo tall as to nearly reach the glaſſes of the hot-bed, the pots may be removed into an airy glaſs caſe, or ſtove, where they may be ſcreened from inclement weather, and have proper air in hot weather; with this treatment the plants will flower in july, and continue to produce freſh ſpikes of flowers till the end of auguſt; and thoſe ſpikes of flowers which appear early in the ſeaſon, will be ſucceeded by ripe ſeeds in ſeptember, ſoon after which the plants will decay.

6. This plant is annual in England, but by the lower part of the ſtalk growing woody, it appears to be of longer duration in the country where it naturally grows; though it will not live through the winter here, for if the plants are placed in a ſtove, the heat is too great for them, and in a green-houſe they are very ſubject to mouldineſs in damp weather. I have ſown the ſeeds of this in the full ground, where the plants have grown upward of three feet high, and have flowered very well, but no pods were formed on theſe; and when they have been treated tenderly, the plants have grown much larger, and produced a greater number of flowers, but theſe have produced no ſeeds. The only way which I could obtain any ſeeds, was by raiſing the plants in pots upon hot-beds; and the beginning of july turning them out of the pots into the full ground on a very warm border under a wall, in which ſituation they flowered very well, and ſome few pods of ſeeds were ripened.

18. It is eaſily propagated by cuttings, during the ſummer months, if the cuttings are planted in pots, and plunged into a moderate hot-bed, being careful to ſhade them till they have taken root, and frequently refreſh them with water: during the months of july, auguſt, and ſeptember, the plants may be expoſed to the open air in a ſheltered ſituation, where they will produce many flowers; but in the autumn they ſhould be placed in a temperate ſtove, to preſerve them in winter.

[Thoſe ſpecies which are natives of the Cape will be ſufficiently protected by the Conſervatory or dry Stove; but ſuch as come from the Eaſt-Indies, and the hotter parts of Africa, muſt be kept in the Bark Stove.]

Crotalaria. See *Glycine* and *Sophora*.

CROTON. (Κροτων *of Dioſcorides. Derivation unknown.*)

Lin. gen. n. 1083. *Reich.* 1181. *Schreb.* 1462. *Gærtn. t.* 107. *Ricinoides Tourn.* 423.

Claſſ. 21. 9. Monoecia Monadelphia.—Monadelphia Dodecandria. *Thunb.*

Nat. order of *Tricoccæ.*—*Euphorbiæ.* Juſſ. 389.

GENERIC CHARACTER.

* *Male flowers* ſmaller than the females.

Cal. *Perianth* cylindric, five-toothed.

Cor. *Petals* in ſome five, ſcarce larger than the calyx, oblong, obtuſe.

Nectary five glands, affixed to the receptacle, ſmall.

Stam. *Filaments* ten or fifteen, ſubulate, connected at the baſe, length of the flower. *Anthers* roundiſh, twin.

* *Female flowers* remote from the males, on the ſame plant.

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[g] Linn. ſuppl. [h] Linn. ſpec. [i] Hort. kew. [k] Retz. [l] Loureiro.

Cal. *Perianth* many-leaved: *leaflets* ovate-oblong, erect.

Cor. *Petals* as in the males (in ſome ſcarce manifeſt.)

Pist. *Germ* roundiſh. *Styles* three, reflex-ſpreading, length of the flower, half-two-cleft. *Stigmas* reflex, two-cleft.

Per. *Capſule* roundiſh, three-lobed at the ſides, three-celled, each of the cells two-valved, ſize of the calyx; frequently much larger.

Seeds ſolitary, ovate, large.

Obs. *This genus is allied to* Acalypha, *differing chiefly in the calyx. Some ſpecies are furniſhed with petals, others are apetalous. Several have the filaments detached.*

In Cr. tinctorium *the calyx is five-leaved: the petals five, lanceolate. Stamens eight, monadelphous.*

In Cr. lucidum: *the calyx in the male flowers is ten-leaved; corolla none; ſtamens twelve: In the female flowers calyx five-leaved; germ hirſute; ſtyles three, ſix-parted.* R.

Species 42 *is diœcous: ſpecies* 51, *polygamous.*

ESSENTIAL CHARACTER.

Male. *Cal.* cylindric, five-toothed. *Cor.* five-petalled. *Stam.* ten to fifteen.

Fem. *Cal.* many-leaved. *Cor.* none. *Styles* three, bifid. *Capſ.* three-celled. *Seed* one.

SPECIES.

[1. Croton variegatum. *Variegated-leaved Croton.*
Lin. ſpec. 1424. *Reich.* 4. 183. *Burm. ind.* 303. *Rumph. amb.* 4. 65. *t.* 25. *Rheed. mal.* 6. 109. *t.* 61.
β. *Rumph. amb. t.* 26.
γ. *Rumph. amb. t.* 27.
Leaves lanceolate very entire ſmooth, painted, petioled.]

2. Croton lineare. *Willow-leaved Croton.*
Jacqu. amer. 256. *t.* 162. *f.* 4. *Ait. hort. kew.* 3. 374.
C. Caſcarilla. *Lin. ſpec.* 1424. *Reich.* 4. 183. *amœn.* 5. 411. *mat. med.* 206. *Swartz obſ.* 363. *Brown. jam.* 347. 5. *Sloan. jam.* 1. 133. 14. *t.* 86. *f.* 1. *Blackw. t.* 577. *Woodv. med. bot.* 116. *t.* 41. *Mill. dict. n.* 8.
Leaves linear very entire obtuſe, tomentoſe beneath, ſtem ſhrubby.

[3. Croton caſtaneifolium. *Cheſtnut-leaved Croton.*
Lin. ſpec. 1424. *Reich.* 4. 184.
Leaves lanceolate obtuſe ſerrate petioled ſmooth.]

4. Croton paluſtre. *Marſhy Croton.*
Lin. ſpec. 1424. *Reich.* 4. 184. *hort. cliff.* 445. *Mart. cent.* 38. (*Ricinoides.*)
Leaves ovate-lanceolate plaited ſerrate ſcabrous.

[5. Croton glabellum. *Laurel-leaved Croton.*
Lin. ſpec. 1425. *Reich.* 4. 185. *amœn.* 5. 409. *Brown. jam.* 348. 7. *Sloan. jam.* 2. 30. *t.* 174. *f.* 2. *Raii dendr.* 17.
Leaves ovate bluntiſh very entire, ſmooth and even; fruits peduncled.]

6. Croton tinctorium. *Officinal Croton.*
Lin. ſpec. 1425. *ſyſt.* 683. *Reich.* 4. 185. *hort. upſ.* 290. *mat. med.* 207. *Gærtn. fruct.* 2. 118. *Gouan. monſp.* 495. *Gron. orient.* 298. *Burm. ind. t.* 62. *f.* 1. *D'Aſſo. aragon. n.* 943.
Ricinoides ex qua paratur Tourneſol gallorum. *Tourn. inſt.* 655. *Niſſol. act.* 1712. 337. *t.* 17.
Heliotropium tricoccum. *Bauh. pin.* 253. *Raii hiſt.* 165. *Ger.* 265. 5. *emac.* 335. 4. *Park.* 439. 4.—parvum. *Lob. ic.* 261.—minus. *Geſn. ic.* 120. *t.* 4. *f.* 30.
Leaves rhombed repand; capſules pendulous; ſtem herbaceous.

[7. Croton glanduloſum.
Lin. ſpec. 1425. *Reich.* 4. 185. *amœn.* 5. 409. *Brown. jam.* 346. 1.
Leaves oblong ſerrate, biglandular at the baſe, fruits ſeſſile.]

8. Croton argenteum. *Silvery-leaved Croton.*
Lin. ſpec. 1425. *ſyſt.* 863. *Reich.* 4. 186. *hort. cliff.* 444. *Murr. in comm. gott.* 1781. *p.* 41. *t.* 4.
Leaves cordate-ovate, tomentoſe beneath, entire, ſerrate.

[9. Croton ſebiferum. *Poplar-leaved Croton,* or *Tallow-tree.*
Lin. ſpec. 1425. *ſyſt.* 863. *Reich.* 4. 186. *Pet. gaz. t.* 34. *f.* 3. (*Ricinus.*) *Pluk. amalth. t.* 390. *f.* 2.
Leaves rhomb-ovate acuminate flat ſmooth, glands ſubpetiolar.

10. Croton japonicum.
Lin. ſyſt. 863. *ſuppl.* 422. *Thunb. jap.* 270. *t.* 28, 29.
Leaves undivided and three-lobed, ovate acuminate entire ſmooth.

11. Croton acutum.
Lin. ſyſt. 863. *Thunb. jap.* 269.
Leaves ovate ſerrate acuminate two-glanded, ſtem herbaceous.

12. Croton Tiglium. *Purging Croton.*
Lin. ſpec. 1426. *Reich.* 4. 186. *fl. zeyl. n.* 343. *mat. med.* 207. *Gærtn. fruct.* 2. 119. *Lour. cochinch.* 582. *Burm. zeyl.* 200. *t.* 90. (Ricinoides.) *Rumph. amb.* 4. 98. *t.* 42. *Rheed. mal.* 2. 61. *t.* 75. *Raii hiſt.* 1803. 3.—1830. 58. 1855. & *ſuppl.* 112. 2. & 656. 2.
Pinus indica, nucleo purgante. *Bauh. pin.* 492.—& Lignum moluccenſe, fol. malvæ, &c. 393.
Leaves ovate ſmooth acuminate ſerrate, ſtem arboreous.

13. Croton lucidum. *Smooth Croton.*
Lin. ſpec. 1426. *ſyſt.* 864. *Reich.* 4. 186. *mant.* 497. *amœn.* 5. 410. *Brown. jam.* 347. *n.* 6.
C. ſpicatum. *Berg. in philoſ. tranſ. v.* 58. (1768.) *p.* 132. *t.* 7.
Leaves ovate ſmooth, flowers in ſpikes, ſtyles many-cleft, depreſſed-pubeſcent; becoming ſhrubby.

14. Croton lacciferum. *Lac Croton.*
Lin. ſpec. 1426. *Reich.* 4. 187. *fl. zeyl. n.* 344. *mat. med.* 207. *Gærtn. fruct.* 2. 119. *Lour. cochinch.* 582. *Burm. ind.* 304. *zeyl.* 201. *t.* 91. (*Ricinoides.*) *Pluk. alm.* 320. *Raii ſuppl.* 112. (*Ricinus ult.*) *Rumph. amb.* 3. 197. *t.* 127. (Halecus.) *Philoſ. tranſ. v.* 22. *p.* 157.
Lacca. *Garc. arom. l.* 1. *c.* 8.
Leaves ovate tomentoſe ſerrulate petioled, calyxes tomentoſe.

15. Croton balſamiferum. *Balſam Croton.*
Lin. ſyſt. 864. *Reich.* 4. 187. *mant.* 125. *Jacqu. amer.* 255. *t.* 162. *f.* 3. *hort.* 3. *t.* 46. *amer. pict. t.* 242.
Leaves ovate-lanceolate ſcabrous very entire, tomentoſe beneath.

16. Croton aromaticum. *Aromatic Croton.*
Lin. ſpec. 1427. *Reich.* 4. 187. *fl. zeyl. n.* 345. *Vahl ſymb.* 2. 98. *Gærtn. fruct.* 2. 119. *Burm. ind.* 204. *Burm. zeyl.* 202. 1. *Rumph. amb.* 3. 197. *t.* 126. *Herm. zeyl.* 11 & 46. *Lour. cochinch.* 583.
Leaves cordate-ovate ſcabrous ſerrate at the baſe beneath, and on the edge, having petioled glands, racemes terminating.

17. Croton humile. *Humble Croton.*
Lin. ſpec. 1427. *Reich.* 4. 188. *amœn.* 5. 410. *Brown. jam.* 347. *Swartz obſ.* 363.
Leaves cordate very entire ſcabrous ſubciliate tomentoſe beneath, ſtem ſhrubby.

18. Croton Ricinocarpos. *Surinam Croton.*
Lin. ſpec. 1427. *Reich.* 4. 188.
Mercurialis androgyna. *Lin. vir. cliff.* 98.
Ricinocarpos. *Boerh. lugdb.* 1. 254. 2. (*deſcript.*)
Leaves ſubcordate crenate, peduncles racemed, oppoſite to the leaves, ſtem herbaceous.

19. Croton moluccanum. *Molucca Croton.*
Lin. ſpec. 1427. *Reich.* 4. 188. *fl. zeyl. n.* 346. *Lour. cochinch.* 583. *Burm. ind.* 205. *zeyl.* 170. 1. (*Nux juglans*). *Pluk. alm. t.* 220. *f.* 5. (*Ricinus*).
Leaves cordate angular ſcabrous, tomentoſe beneath.

20. Croton flavens. *Yellow Croton* or *Balſam.*
Lin. ſpec. 1426. *Reich.* 4. 188. *amœn.* 5. 410. *Brown. jam.* 347. *n.* 3.
Leaves cordate oblong very entire tomentoſe on both ſides, branchlets more cloſely tomentoſe.

21. Croton capenſe. *Cape Croton.*
Lin. ſyſt. 864. *ſuppl.* 422.
Leaves haſtate and undivided lanceolate very entire and very ſmooth.]

22. Croton lobatum. *Various-leaved Croton.*
Lin. ſpec. 1427. *Reich.* 4. 189. *hort. cliff.* 445. *Forſk. ægypt.* 163. *Mart. cent.* 46. (*Ricinoides*).
Leaves unarmed-ſerrate, the lower five-lobed, the upper three-lobed.

[23. Croton ſpinoſum. *Thorny-leaved Croton.*
Lin. ſpec. 1427. *Reich.* 4. 189. *fl. zeyl. n.* 347. *p.* 238. *Forſk. ægypt. cent.* 6. 163. *Pluk. alm. t.* 108. *f.* 3.
Leaves palmate five-lobed and three-lobed, thorny-ſerrate; flowers ſcattered over the ſtem, and ſubſeſſile.

24. Croton Aſtroites. *Woolly Croton.*
Ait. hort. kew. 3. 375.
Leaves oval ſubcordate very entire ſtarry-tomentoſe on both ſides, branchlets more cloſely tomentoſe.

25. Croton punctatum. *Dotted-leaved Croton.*
Retz. obſ. 5. *n.* 85. *Jacqu. ic. rar.*
Leaves ovate acute entire, tomentoſe and dotted beneath, ſtem ſhrubby.

26. Croton nutans.
Forſt. fl. auſtr. n. 354. *Vahl ſymb.* 2. 96.
Leaves rhomb-ovate acuminate waved ſmooth, glands marginal.

27. Croton Inophyllum.
Forſt. fl. auſtr. n. 355.
Leaves obovate very entire, ſtem arboreous.

28. Croton hirtum.
L'Herit. ſtirp. nov. faſc. 1. 17.
Leaves ovate ſerrate, with glanduliferous hairs at the baſe, ſpikes ſeſſile, ſtem hiſpid.]

29. Croton althææfolium.
Mill. dict. n. 9.
Ricinoides americana fruteſcens, althææ fol. *Plum. cat.* 20.
Leaves oblong-cordate tomentoſe, ſtem ſhrubby branched, flowers in terminating ſpikes.

30. Croton ſalviæfolium.
Mill. dict. n. 10.
Ricinus ſalviæ fol. utrinque molli. *Pet. hort. ſicc.*
Leaves cordate acute, tomentoſe beneath, ſtem ſhrubby, flowers in ſpikes terminating and axillary.

31. Croton ſeſſiliflorum.
Swartz. prodr. 100.
Leaves ovate acuminate quite entire ſmooth, flowers ſeſſile axillary dioecous five-ſtamened.

32. Croton globoſum.
Swartz. prodr. 100.
Leaves ovate obtuſe entire, peduncles in pairs, flowers dioecous, fruits globular, echinate-hiſpid.

33. Croton divaricatum.
Swartz prodr. 100.
Leaves oblong obtuſe ſerrate, rough with hairs, biglandular at the baſe, racemes terminating ſolitary, ſtem ſhrubby, branches dichotomous divaricate.

34. Croton nitens.
Swartz. prodr. 100.
Leaves cordate-elliptic acuminate almoſt entire ſmooth ſhining above, dotted and ſilvery underneath, racemes axillary, leaves ſhorter, erect.

35. Croton laurinum.
Swartz. prodr. 100.
Leaves oblong acute quite entire, of ſome conſiſtence, ſmooth, petioles rugged, they and the leaves dotted underneath, racemes axillary, very long, patulous, ſtem arboreſcent.

36. Croton pallens.
Swartz. obſ. 100.]
C. fruticoſum. *Mill. dict. n.* 6.
Ricinoides fruteſcens, lauri fol., calyce ampliſſimo viridi. *Houſt. Mſs.*
Leaves ovate acuminate quite entire, ſmooth on both ſides, racemes ſolitary erect terminating, calyxes larger than the fruit.

37. Croton macrophyllum.
Swartz. prodr. 100.
Leaves cordate-roundiſh acuminate entire thick tomentoſe, nerved underneath.

38. Crotum populifolium.
Swartz. prodr. 101. *Vahl ſymb.* 2. 97.
Leaves broad-ovate acuminate ſerrate-toothed, ſomewhat rough with hairs, with one gland at the baſe above, petioles the length of the leaves, racemes terminating erect ſolitary, ſtem ſhrubby.

39. Croton cochinchinenſe.
C. punctatum. *Lour. cochinch.* 581.
Leaves lanceolate quite entire hoary underneath, ſhining, dotted, capſules ſcurfy.

40. Croton lanatum.
Lour. cochinch. 581.
Leaves ovate-lanceolate quite entire ſmooth oppoſite, corollas woolly, capſules ſix-valved.

41. Croton congeſtum.
Lour. cochinch. 582.
Leaves ovate gaſh-ſerrate ſmooth veined, flowers heaped naked axillary.

42. Croton dioicum.
Cavan. ic. hiſp. 4. *n.* 6. *t.* 6.
Leaves oblong obtuſe hoary, flowers terminating, on the male in ſpikes, on the female by threes.

43. Croton plicatum.
Vahl ſymb. 1. 78.
Leaves ovate plaited crenate hirſute, ſtem herbaceous.

44. Croton obliquum.
Vahl ſymb. 1. 78.
C. argenteum. *Forſk. ægypt.* 75. *n.* 491?
Leaves ovate-lanceolate quite entire, ſtem herbaceous, tomentoſe.

45. Croton coccineum.
Vahl ſymb. 2. 97.
Leaves ovate acuminate quite entire ſmooth, biglandular at the baſe, dotted with ſcarlet underneath, racemes terminating.

46. Croton lævigatum.
Vahl ſymb. 2. 97.
Leaves elliptic, very ſmooth and even, without glands, entire and ſerrate, obtuſe, racemes terminating, elongated.

47. Croton betulinum.
Vahl ſymb. 2. 98.
Leaves ovate obtuſe crenate-toothed, rugged, with dots on the upper ſurface, ſomewhat rough, with hairs underneath, racemes axillary.

48. Croton goſſypifolium.
Vahl ſymb. 2. 98. *t.* 49.
Leaves cordate three-lobed tomentoſe, biglandular at the baſe underneath, ſtem arboreous.

49. Croton procumbens.
Jacqu. amer.
Leaves wedge-ſhaped acute quite entire.

50. Croton niveum.
Jacqu. amer. pict. t. 263. *f.* 59.
Leaves cordate acuminate ſerrulate, tomentoſe-ſhining beneath, ſtem ſhrubby.

51. Croton polygamum.
Jacqu. amer. pict. t. 243.
Leaves lanceolate ſerrate, thinly ſet with decumbent hairs.

52. Croton? cyanoſpermum.
Gærtn. fruct. 2. 120.

53. Croton cardioſpermum.
Gærtn. fruct. 2. 120.

DESCRIPTIONS, *&c.*

The plants of this numerous genus are herbaceous, or more frequently ſhrubby. Leaves accompanied with ſtipules, generally alternate, ſeldom oppoſite. Flowers axillary or terminating, uſually in ſpikes, but ſometimes in corymbs: the ſpikes are moſtly monoecous (ſometimes dioecous, n. 2. or polygamous, n. 51.); the males above, the females below[a]. They are chiefly inhabitants of the Eaſt or Weſt-Indies: the ſixth ſpecies alone is European.

1. Native of Amboina and Japan: alſo of Mallicollo and Tanna in the South Seas.]

2. This riſes with a ſhrubby ſtem about ſix or ſeven feet high, ſending out many ſide branches, which are covered with a ſmooth bark of a yellowiſh

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[a] Juſſieu.

white colour, and garniſhed very cloſely with narrow ſtiff leaves, near three inches long, and about one eighth of an inch broad, of a light green on their upper ſide, but their under of the ſame colour with the bark, the midrib is furrowed on their upper ſide, and very prominent on the lower: the upper part of the branches divide into four or five ſmaller, ariſing from the ſame joint, and nearly equal in length; between theſe ariſes a long looſe ſpike of whitiſh green flowers. The whole plant has an aromatic odour when rubbed.

[According to Jacquin, it is only four feet high, and upright, the branches round, the leaves on a ſhort petiole, furniſhed with two ſtiffiſh ſtipules. Swartz remarks, that on the coaſt it has narrower leaves, and broader ones more in land; and that the flowers are dioecous.

It reſembles the European Roſemary pretty much, both in the manner of its growth, and the form and colour of its leaves, whence it has acquired the name of *Wild Roſemary*, in Jamaica. It is frequent on the ſouth ſide of the iſland, and generally uſed in warm reſolutive baths and fomentations[b]. Native of Jamaica, and other parts of the Weſt-Indies. It flowers in july, and was introduced about 1772 by Mr. William Malcolm[c].] It had, however, been cultivated before by Mr. Miller, to whom the ſeeds were ſent from Jamaica by Dr. Houſtoun.

[3. Native of South America[d].

4. Root annual. Stems round, fungous, ſmooth, procumbent or erect. Leaves oblong, ſerrate, ſmooth on both ſides, uſually two inches long, ſeldom one broad; petioles half an inch in length. Flowers axillary, towards the top of the ſtem, on ſpikes two inches long, in the upper part of which are four or five males, in the lower three or four females. The fruit is the ſize of a pea, rough with warts, or ſoft little ſpines. It varies in the ſize and form of the leaves.

Cultivated in the botanic garden at Chelſea in 1731[e]. Martyn has given an outline of the wild plant, by the ſide of that which was raiſed in the garden; and they differ ſo widely, that it would be difficult to ſuppoſe them of the ſame ſpecies, did we not know what great changes ſoil and climate will operate.]

Mr. Miller ſays, that the plant in its native marſhes has broad flat ſtalks, and leaves three inches long, ſcarce a quarter of an inch broad, rough, and but little indented on the edge; but that in dry ground the leaves are ovate, upwards of two inches broad, and ſerrate. He had the ſeeds from Dr. Houſtoun, who diſcovered it near La Vera Cruz. It flowers in july, and the ſeeds ripen in autumn.

[5. This grows in a ſhrubby form, and is ſeldom under ſeven or eight feet in height. All the parts of the plant are of an active warm nature, and have a pretty agreeable ſmell. It is common in all the low lands about Spaniſh town and Kingſton in Jamaica[f]: and was introduced here in 1778, by Thomas Clarke, M. D.[g]]

6. Root annual. Stem herbaceous, branching, about nine inches high. Leaves near two inches long, and one inch and a quarter broad in their wideſt part, on ſlender petioles near four inches long. Flowers in ſhort ſpikes from the ſide of the ſtalks, at the ends of the branches. [Stems covered with a glaucous meal. Leaves rhomboid, toothed, ſubtomentoſe. The male flowers diſpoſed in racemes. Calyx five-parted (five-leaved. *Lin.*) Petals five, lanceolate. Stamens eight or nine, monadelphous. Female flowers below the males, axillary, peduncled. Capſules tricoccous, ſcabrous, nodding. See n. 43.

The women about Albudebar dye their ſtockings with it.

Niſſole dyed both ſilk and wool of an elegant blue colour. But the attempts in France to produce a material from it for dyeing ſimilar to Indigo, did not meet with ſucceſs[h].]

This is the plant from which the Tournſol is made, that is uſed for colouring wines and jellies. It is made of the juice which is lodged between the calyx and the ſeeds: this, if rubbed on cloths, at firſt appears of a lively green, but ſoon changes to a blueiſh purple; if theſe cloths are put into water, and afterwards wrung, they will dye the water of a claret colour; the rags thus dyed, are brought to England, and ſold in the druggiſts ſhops by the name of Tournſol.

[Native of the South of France, Spain and Italy; and the kingdom of Tunis.

Cultivated 1570[i]. It flowers in july.

7. This ſeldom riſes above ſixteen or ſeventeen inches in height. The ſeeds are ſmall, and picked up every where in the fields, both by the wild and tame fowls, in the iſland of Jamaica, of which it is a native, in the Savannahs of Liguanea[k].]

8. Root annual. Stem a foot high, angular; branches naked from their diviſion to the top. Leaves an inch and half long, and three quarters of an inch broad, on petioles an inch in length. Flowers in ſhort cloſe terminating ſpikes, the upper ones male, the lower female, all white, the former ſoon falling.

[The head of fruits has three oval, hirſute, toothed bractes[l].

Introduced before 1733, by William Houſtoun, M. D.[m] who found it at La Vera Cruz, and ſent the ſeeds to Mr. Miller.

9. Leaflets broader than they are long, and involute: there are two glands at the baſe of the leaf[n].

The leaves dye a very fine black: in october they wither, turn to a dirty crimſon colour, and fall off before the capſules. The young leaves ſhoot out again in march. Each capſule contains three hard black ſhells, the ſize of pepper-corns or common peas, covered entirely with a delicate ſnow-white ſubſtance. It is not this that produces the Tallow, as is commonly ſuppoſed; but it is the oil expreſſed from the kernel, and this white ſubſtance muſt be well cleared from the ſhells before they are broken, for that will conſiderably leſſen the quantity of oil. For this purpoſe the ſhells ſhould remain ten or fifteen days in water to ſoak, and then they may be cleared of the white ſubſtance by rubbing; it will not, however, part from the ſhell without difficulty. The oil drops from the preſs like thick glutinous lamp oil, and ſoon hardens by cold to the conſiſtence of common tallow: by boiling it becomes as hard as bee's-wax[o].

It is a native of China; flowering in may and june, and ripening the ſeeds in november:—it flowers here in ſeptember; and was introduced in 1755, by Hugh Duke of Northumberland[p].

In Chineſe it is named Ko Sheu or Ou Ko, or as the French write it U-kieu.

10. Stem ſubangular, naked at bottom, tomentoſe at top, ſimple, a foot high and more. Leaves alternate, petioled, green above, yellowiſh beneath, netted all over with the veins, growing gradually ſmaller towards the top, the uppermoſt tomentoſe. Flowers terminating in ſpikes, which are peduncled, tomentoſe, and the length of the finger[q].

It bears a great reſemblance to *C. ſebiferum*, but the leaves are much larger, more acuminate, with five nerves running from the baſe: the panicle is villoſe, divided into racemes, and pyramidal[r].

Native of Japan: flowering in july and auguſt[s].

11. Stem angular, ſimple, ſmooth. Leaves alternate, petioled, unequally ſerrate, ſmooth, two inches wide, and between three and four long. Petioles angular, a finger's length. Two emarginate glands on the edge of the leaf, above the baſe. Flowers in racemes, the males at the end, the females below.

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[b] Browne. [c] Hort. kew. [d] Linn. ſpec.
[e] Houſtoun. in mart. cent. [f] Browne.
[g] Hort. kew.

[h] D'Aſſo. [i] Hort. kew. from Lobel. [k] Browne.
[l] Linn. ſyſt. [m] Hort. kew. [n] Linn. ſyſt.
[o] Blake Mſs. ſee Duhalde; and Groſier, p. 438. engl. edit.
[p] Hort. kew. [q] Thunberg. [r] Linn. ſuppl.
[s] Thunberg.

Raceme axillary, looſe, angular, ſmooth, a palm or ſpan in length. Calyx deeply five-parted, diviſions lanceolate, ſmooth, patulous. Petals white, woolly, the length of the calyx. Filaments about twelve, filiform.—Corolla in the female flowers none. Germ ſuperior, ovate, villoſe: ſtyles five, filiform: ſtigmas ſimple, obtuſe. Capſule three-cornered, obtuſe, villoſe, aſh-coloured, three-valved, three-celled.—It differs from *C. glanduloſum*, in its acute, ſmooth leaves, and peduncled fruits.—Cultivated in Japan, whither it was brought by the Portugueze. It flowers in ſeptember[t].

12. This is a middle-ſized tree, with a few ſpreading branches. Leaves alternate, nerved, on long petioles. Flowers in erect, ſimple, terminating racemes, ſcarcely the length of the leaf, the lower ones female, the upper male, pale-coloured; calyx five-leaved, very ſhort, under the capſule reflected. In the males corolla five-petalled, with fifteen ſtamens; in the females corolla none[u]. Capſule three-cornered-ovate, rather large, coriaceous, thin, ſmooth, three-grooved, tricoccous. Partitions very thin, almoſt membranaceous. Seeds convex on one ſide, very bluntly angular on the other, with a very thin edge, ſtraw-coloured, brown or blackiſh[x].

Native of the Eaſt-Indies, China and Cochinchina.

13. Calyx of the male ten-leaved, imbricate, hirſute within. Corolla none. Stamens twelve.—Calyx of the females five-leaved. Germ hirſute. Styles three, ſix-parted[y].

It ſeldom riſes above three feet in height; is pretty ſimple towards the root, and divides into three or four ſimple branches towards the top. Leaves pointed both ways. Frequent in St. Elizabeth's, Jamaica[z].

14. This is a middle-ſized tree, with a few long ſpreading branches, which according to Burmann are angular and rugged. Leaves ſubacuminate, unequally toothed, ſcattered over the branches, tomentoſe on both ſides, on long petioles: from the axils of theſe, ſays Burmann, ariſe ſmaller branches, bearing ſmaller leaves on petioles an inch in length. Racemes terminating, and very ſimple. Flowers white, with five-leaved calyxes; the upper male, villoſe, with a five-petalled corolla, and from fifteen to twenty ſtamens; the lower female, tomentoſe[a]: capſules ſmall, globular, without any groove, tricoccous, with the five-leaved ſpreading calyx permanent at the baſe: ſkin coriaceous, quite entire, white, tomentoſe on the outſide: ſhells the ſubſtance of paper, white, opening elaſtically. Seeds roundiſh, turgidly lens-ſhaped, very obſcurely wrinkled, of a brown bay colour[b], the ſize of hemp.

The leaves infuſed in warm water or milk purge and vomit—It exudes a very fine lac ſpontaneouſly; this appears like a bud at the origin of the branches, but ſparingly. They uſe this in Ceylon to varniſh their lances, the handles of their tools, &c. It is ſuperior to that which in Pegu and Siam is formed by the ants, and much more pure[c].

Lac is ſaid to exude in ſmall quantities from this and other ſpecies; but all that ſubſtance which we commonly call Gum Lac in Europe is the work of the red ants, who are ſuppoſed to collect or ſuck the reſinous juice from this and perhaps other trees, to digeſt it with the animal acid in their ſtomachs, and then to incruſt the branches with it, to ſerve as a neſt or comb for their young. It is not properly a gum, reſin or oil, not being ſoluble either in water or fat oils. The uſe of this ſubſtance is well known in dyeing ſilk and woollens of a ſcarlet colour, and the leather called Morocco leather, for ſealing-wax, varniſh, &c. The wood is light, white and brittle. The bark and reſin are reputed to be ſerviceable in ulcers of the mouth, in the gonorrhœa, fluor albus, dyſentery, &c.[d]

Native of the Eaſt-Indies, as Aſſam on the borders of Thibet, where the tree is called Bihar; the ſouthern provinces of Cochinchina, and Cambodia.

15. This is an upright, branched, diffuſed ſhrub, three or four feet high, very ſweet ſmelling, covered all over with a cloſe yellowiſh nap, and abounding with a balſamic, thickiſh, odorous, browniſh ſap, which exudes wherever a cut or rupture is made. Leaves petioled, green above, ferruginous-yellow underneath, thick, ſcatteringly alternate, two or three inches long, numerous. Spikes ſubterminating from the diviſions of the younger branchlets. Flowers ſmall, with white petals[e]. It much reſembles *C. humile*, but the leaves are not cordate[f].

Native of Martinico, Curaçao and Jamaica.

16. This is a middle-ſized tree with ſpreading branches, ſubdivided, round, rugged, with minute dots interſperſed with other larger ones, tomentoſe towards the end; hairs ſtellate. Leaves large, ſpreading, five-nerved, unequally ſerrate; the younger ones ſubtomentoſe, with ſtellate hairs, eſpecially underneath, and acuminate, the older ones almoſt naked, only a little hairy on the veins, beneath rugged, with dots, paler, obtuſe. Petioles tomentoſe, one-third only of the length of the leaf. Stipules briſtle-ſhaped, deciduous. Racemes terminating, quite ſimple, rather erect, two inches long. Bracte briſtle-ſhaped at the baſe of each pedicel. Flowers numerous, ſcattered, villoſe; the lower female, the upper male: the latter with the leaflets of the calyx ovate and numerous, ſtamens villoſe at the baſe[g]. Capſule ovate or globular, with the ſhort calyx turned back below, ſmooth, coriaceous, thick, brown, with ſix paler lines: ſkin corky, thick. Seeds ovate-oblong, convex on one ſide, angular on the other, wrinkled, with obſcure tubercles of a dark bay colour[h]. Herman collected a lac from the wounded bark, but in ſmall quantities.

Native of the iſland of Ceylon, and of China near Canton. Gærtner will not allow that it is *Halecus litorea* of Rumphius.

17. This is a ſhrub two feet high, with a ſmooth branching ſtem; the branches hoary at the end. Leaves alternate, rufous, clammy, with warts terminated by minute white hairs, contiguous at the baſe: petioles ſomewhat hairy. Spikes terminating, erect: male flowers above, five to ſeven, ſmaller, whitiſh; calyx five-leaved, leaflets hoary; petals five, white, equal to the calyx; filaments from twenty to twenty-four, anthers compreſſed, whitiſh: females below, larger, greeniſh; calyx five-leaved, leaflets tomentoſe or hoary; corolla none. Germ three-grooved, hirſute; ſtyles three, contiguous at the baſe, white, four-parted to the middle; ſtigmas firſt white, then rufeſcent. Capſule tricoccous, ſomewhat hirſute. Seeds roundiſh. The ſmell of the whole herb is ſtrong and balſamic[i]: it is very hot and pungent upon the palate; and is frequently uſed in baths and fomentations for nervous weakneſſes. Native of Jamaica in ſavannahs about Kingſton[k].

18. Branches alternate. Leaves alternate, petioled, naked. Peduncles longer than the leaves. The flowers every where heaped together in the racemes, the males and females mixed. Calyx three-leaved, narrow, white. It is an annual plant, native of Surinam[l].

The ſeeds were ſent to Boerhaave by John Hartogh.

19. This is a tree eight feet in height, with long reclining branches. Leaves alternate, broad, acute or acuminate, toothed, with a repand edge as in *Tuſſilago*, on long petioles. Flowers white, in ſhort racemes: males above, with a five-cleft calyx, a five-petalled obtuſe reflex corolla, and ten ſtamens;

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[t] Thunberg.
[u] Loureiro and Linn. zeyl.
[x] Gærtner.
[y] Linn. mant. & ſyſt. and Linn. zeyl.
[z] Browne.
[a] Loureiro
[b] Gærtner.
[c] Herman.

[d] Loureiro, Bomare dict. art. Fourmi. Philoſ. tranſ. vol. 71 and 79. Nicholſon's Chemiſtry, 490.
[e] Jacquin.
[f] Linn. mant.
[g] Vahl & Linn. zeyl.
[h] Gærtner.
[i] Swartz.
[k] Browne.
[l] Linn. ſpec.

females at the baſe two or three together, with a five-cleft calyx, and a five-petalled, acute, erect corolla. Capſule ſmooth and even, bigger than a walnut; a great quantity of oil is extracted from it. Native of Ceylon and the Molucca iſlands[m].

20. This riſes frequently to the height of two or three feet. In ſize and general form it is like the ſeventeenth ſort, but is eaſily diſtinguiſhed by the thickneſs of its extreme branches, which are pretty ſoft and luxuriant. All parts of the plant are equally ſharp, and ſometimes uſed in reſolutive baths. Native of Jamaica, in ſavannahs about Kingſton[n].

21. Found at the Cape of Good Hope by Thunberg[o].

22. Stems round, furrowed, herbaceous, ſlightly hairy, erect, branched, a foot and half in height. At the top of the ſtem and ends of the branches come out ſpikes of flowers five or ſix inches in length; on the upper half of theſe are male flowers, which are ſmall, having a five-cleft calyx, and a corolla of five very ſmall petals, both of a purple colour; the females are below, on the ſame ſpikes; theſe have no petals, but a roundiſh germ incloſed in a green many-leaved calyx; the ſtyles are purple, fringed at the end, and permanent. The fruit is ſmooth, the ſize of a large pea, or a horſe-bean[p].

It is an annual plant, and flowers in july. Houſtoun found it commonly about Vera Cruz, and ſent the ſeeds to England in 1730[q].

23. Native of the Eaſt-Indies.

24. Shrubby. Flowering in july and auguſt. Native of the Weſt-Indies. Mr. Francis Maſſon Introduced 1782[r].

The ſpecific character given of this ſpecies in the Kew catalogue is very nearly the ſame with that which is given by Linneus of the twentieth.

25. Fructification in a ſpike; capſules ſilky, ſcarlet, hairy. Sent from Ceylon by Koenig[s].

26. This reſembles C. ſebiferum, but the leaves are leſs acuminate; the glands are not on the petiole at the inſertion of the leaves, but rather on the margin of the leaf itſelf, a little above the baſe; the ſpikes are elongated, two or three inches in length; the flowers are diſtinct[t].

Native of the Society and Friendly iſles, and the New Hebrides[u].

27. Native of New Caledonia.—There are two other ſpecies of Croton found in the iſle of Tanna. *Forſt.* 551. 552.

28. This is an annual plant, a foot in height. Stem herbaceous, erect, round, glandular, with ſtellate hairs on each gland, ſparingly branched, dichotomous or trichotomous at top: branches patulous, the lower alternate, the upper oppoſite, or in whorls three together. There are ſome glands next the ſtipules on each ſide. Leaves alternate, except the uppermoſt, which are oppoſite from the forks of the branches; they are ſpreading, ſubcordate, unequally ſerrate or toothed, acute, and have a few pedicelled glands near the petiole, but on the edge; they are three-nerved, the nerves papilloſe-hiſpid, veined, wrinkled, pale green on both ſides, three inches long, two inches and a half broad. Petioles ſhorter than the leaf, round on one ſide, grooved on the other, hiſpid and papilloſe like the ſtem. Stipules two, ſubulate, hairy, permanent. Spikes between the forks of the branchlets terminating, erect, ſeſſile, ſix lines long. Flowers cloſe, ſeſſile, duſky herbaceous, from one to two lines in length: under each flower a linear hairy bracte, ciliate on each ſide, with three glandular hairs, the length of the calyx, permanent. Male flowers above, with a five-leaved calyx, five-petalled corolla, and ten filaments: females below, with a five-leaved calyx, and no corolla. Capſule rugged, rough with hairs. Seeds oblong, gibbous on the outſide, within ſomewhat angular, and ſcored with a line, having a ſcar at top, and being of a brown colour.

It is ſingular in having glands of three different ſorts: 1. villiferous veſicles on the ſtem, branches, petioles, nerves and fruit: 2. a few naked glomerate glands below the axils: 3. pedicelled glands at the baſe of the leaves, and at the edges of the bractes. It differs from *C. paluſtre* in having ſeſſile ſpikes, not axillary, leaves three-nerved, not plaited, nor the nerves parallel: it differs from *C. glanduloſum* in having pedicelled glands.

Native of Guiana. Raiſed in the Paris garden from ſeeds ſent by Louis Richard. It flowered in 1783, but periſhed without producing ſeeds[x].]

29. The twenty-ninth ſort grows naturally in Jamaica, from whence it was ſent me by the late Dr. Houſtoun; this riſes with a ſhrubby ſtalk ſix or ſeven feet high, dividing upward into ſeveral branches, which are covered with a yellowiſh down, garniſhed with long heart-ſhaped leaves, ending in acute points; theſe are two inches and a half long, and one broad in their wideſt part, ſtanding on long foot-ſtalks, covered on both ſides with a woolly down of the ſame colour as the branches. The flowers are produced on long cloſe ſpikes at the end of the branches; the male flowers, which are ſituated on the upper part of the ſpikes, have white flowers of one leaf, divided into five parts almoſt to the bottom, and have five taper ſtamens, ſituated in the bottom. The female flowers on the lower part of the ſpikes, have large woolly calyxes, and are ſucceeded by round capſules.

30. The thirtieth ſort riſes with a ſhrubby ſtalk near four feet high, dividing into many ſmaller branches, which have a ſilvery bark, and are garniſhed with ſmall heart-ſhaped leaves, about three quarters of an inch long, and half as broad at their baſe, ending in acute points; theſe are woolly on both ſides, but their under ſide is ſilvery, their upper ſide of a yellowiſh green. The flowers are produced in ſhort ſpikes at the end of the branches, are ſmall, white, and have woolly calyxes. The female flowers on the lower part of the ſpikes are ſucceeded by roundiſh capſules.

[31. Native of Hiſpaniola.

32. Native of Jamaica.

The place of theſe two is between the fifth and ſixth ſpecies.

33. Native of the Weſt-Indies. Its place is between the eighth and ninth ſpecies.

34, 35. Natives of Jamaica. Their place is between the ninth and tenth ſpecies[y].]

36. This riſes with a ſhrubby ſtem to the height of ſeven or eight feet, is covered with an aſh-coloured bark, and divides at top into many ſlender branches; ſome of theſe are terminated by five or ſix branchlets, all ariſing from the ſame joint; theſe are naked below, but towards their upper part they have ſmooth lanceolate leaves, about two inches and a half long, and three quarters of an inch broad, on pretty long foot-ſtalks; the flowers are produced in ſhort ſpikes at the ends of the branches, are of an herbaceous colour, and are incloſed in large green calyxes. Native of Jamaica, where it was diſcovered by Dr. Houſtoun.

[37. Native of the Weſt-Indies. The place of this is between the ninth and tenth ſpecies[z].

38. Branches ſmooth, ſcarred. Leaves approximating towards the top, broad-ovate, unequally tooth-ſerrate, with ſtellate fulvous hairs on both ſides: petioles the length of the leaves. Raceme terminating, erect, an inch and half long. Peduncle rough with hairs. Calyxes of the females with lanceolate, hairy, tooth-gaſhed leaflets, and glandular teeth: of the males ſmooth, coloured. Germ rough with hairs[a]. Native of Jamaica, and other parts of the Weſt-Indies. Its place is between the tenth and eleventh ſpecies. 31 to 35 incluſive are ſhrubby; the three laſt are perennial[b].]

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[m] Loureiro. Linn. zeyl. & Burm. zeyl.
[n] Browne.
[o] Linn. ſuppl.
[p] Houſtoun in Mart. cent.
[q] Mart. cent.
[r] Hort. kew.
[s] Retz.
[t] Vahl.
[u] Forſter.

[x] L'Heritier.
[y] Swartz.
[z] Ibid.
[a] Vahl.
[b] Swartz.

Mr. Miller has a Croton under this name, but it is a different ſort. The ſtem is ſhrubby, ſeven or eight feet high, ſending out many irregular branches, covered with an aſh-coloured bark. Leaves heart-ſhaped, near four inches long, and two inches broad in their wideſt part, ending in acute points; they are of a light green on their upper ſide, but woolly on their under, and have ſlender foot-ſtalks; they come out ſingle, and two or three from the ſame joint. The flowers are produced in ſhort ſpikes from the ſide of the branches; they are of a whitiſh green colour. It was ſent from Jamaica by Mr. Robert Millar.

[39. This is a middle-ſized tree, with ſpreading branches. Leaves alternate, ſmooth, white underneath, dotted, whence Loureiro has given this ſpecies the name of *punctatum*, but that having been before occupied by Retzius, I have been compelled to change it; and perhaps after all, this may prove to be no more than a variety of *C. Caſcarilla*, to which Loureiro obſerves it bears a reſemblance, only the leaves are not tomentoſe, and are void of ſmell.—The flowers are white, in ſimple, oblong, terminating racemes, the females at the baſe; both have a five-parted, bell-ſhaped calyx; and five lanceolate-ovate, ſpreading petals, nearly equal to the calyx: the males have fourteen filaments, longer than the corolla: the females have a three-cornered, ſuperior germ, three ſhort ſtyles, and three quadrifid ſtigmas, the clefts filiform, and bent in.

Native of the woods of Cochinchina[c].

40. This is a large tree, with ſpreading branches. The flowers white, in ſimple, terminating racemes. Male flowers at the top: calyx tubular, five-parted, erect; corolla five-petalled, petals ovate, concave, woolly within, equal to the calyx; filaments fifteen, equal to the corolla: females below; calyx five-leaved, leaflets ovate, acute, ſpreading, permanent; corolla none; germ ovate, ſuperior, ſtyle none, ſtigmas three, filiform, ſhort, bifid, reflex. Capſule ovate; ſeeds ovate, tubercled at top. Native of mountain woods in Cochinchina.

The wood is white, heavy, and very durable: it is uſed in building, and for piles of bridges[d].

41. Stem ſuffruticoſe, five feet high, with many reclining branches. Leaves alternate, unequal. The male flowers have eighteen ſtamens; the females are ſucceeded by pendulous capſules; neither have any petals. Native of China, about Canton[e].

42. Stem ſuffruticoſe, round, with divaricating branches; the whole plant clothed with a ſoft nap. Leaves ſcattered, ſubſeſſile, ſilvery underneath, quite entire, ſomewhat channelled, patulous. Male flowers in terminating ſpikes, each flower pedicelled, and having a ſubulate bracte: calyx half-five-cleft, bell-ſhaped: corolla none, except the five yellow nectareous glands placed in a ring at the bottom of the calyx: filaments twelve or thirteen, free or detached, a little longer than the calyx, fixed in the bottom of it, villoſe, green. Female flowers like the males in the calyx and glands, but on a ſeparate individual, in threes, terminating, on ſhort peduncles: germ tomentoſe, globular-three-cornered; ſtyles three, united at the baſe, half-five-cleft: capſule larger than a pea, with one ovate, very ſmooth ſeed in each cell. Before the ſpikes come, this plant much reſembles the Stock-gilliflower, or *Cheiranthus incanus*.

Native of Mexico. Cultivated in the garden of the Duke del Infantado near Madrid; flowering and fruiting all the month of auguſt[f].

43. Branches round, ſomewhat rugged, hoary, hirſute above, as are alſo the leaves, with cloſe ſtellate hairs. Leaves like thoſe of *Heliotropium ſupinum*, wrinkled, rounded at the top, ſoft, hoary, half an inch or more in length. Petiole the length of the leaf; a purple gland at the top, and two underneath at the baſe of the leaf. The infloreſcence as in *C. tinctorium* (n. 6.). Capſules pendulous, of a violet purple colour. It is by no means a variety of *C. tinctorium*; the leaves of which are rhomboid angular-toothed, ſubrepand flat, the younger ones only having a ſingle plait or two; they are hoary indeed underneath, but with minute, not long, very copious hirſute hairs; the petiole has no gland, there being only the pair at the baſe of the leaf.

Obſerved in Arabia by Forſkal[g].

44. This is allied to the preceding; but the hairs are leſs diſtinct, ſo that the whole plant appears to be tomentoſe; the leaves are narrow, flat, quite entire, and have no glands either on the petiole, or at the baſe of the leaves, which are oblique and narrower on one ſide at the baſe. Native of Egypt[h].

The proper place of theſe two is between the ſixth and ſeventh ſpecies.

45. Branches round, with a brown bark, mealy-villoſe at top. Leaves two or three inches long, attenuated at the end, ſomewhat ſharp at the baſe, three-nerved, netted underneath, and ſlightly tinged with numerous, very minute, ſcarlet pellucid dots, and having a brown gland on each ſide at the inſertion of the petiole, which is an inch and half long and round. Racemes either ſingle, or ſeveral from the topmoſt axils crowded together, two inches long. Peduncle of a yellow ferruginous colour, angular. Flowers ſubſeſſile. Styles reflex. Germ whitiſh, dotted with ſcarlet. Capſules oblong, ſcarlet.

Found in Ceylon by Koenig[i].

46. Branches round, proliferous, ſcaly with meal, and aſh-coloured at top. Leaves heaped at the ends of the branchlets, two inches and more in length, paler underneath, membranaceous, either quite entire or obſcurely and remotely ſerrate, the ſerratures blunt, always quite entire at the baſe. A minute gland by the ſide of the petiole, at its inſertion underneath. Stipules ſubulate, deciduous. Peduncle terminating, erect, ſtriate-angular, covered with farinaceous ſcales, a ſpan long, muricated with fallen flowers. Calyx ſubhirſute. Stamens numerous.

Native of Hainam: obſerved by Dr. Dahl[k]. The place of this and the preceding is between the twelfth and thirteenth ſpecies.

47. This has the appearance of *Betula* or Birch. Branches round, with a purpliſh bark, tomentoſe-hoary at the end. Leaves have ſtellate hairs underneath; the younger ones are hoary, and have a minute pedicelled gland at each ſide of the baſe underneath; petiole ſhorter than the leaf, filiform. Racemes at the end of the branches, but as theſe grow forward, becoming lateral, an inch and half in length, erect. Flowers ſmall, rough with hairs; females below; calyx five-leaved; leaflets linear, blunt. Native of the iſland of St. Thomas in the Eaſt-Indies. The place is between the ſeventeenth and eighteenth ſpecies[l].

48. This is a tall tree, with round branches, tomentoſe and hoary at top. Leaves heaped towards the ends of the branches, alternate, a long ſpan and more in length, the lobes ovate, acute, the middle one elongated; they are ſcarcely toothletted, tomentoſe on both ſides, with ſtellate hairs, ſoft, whiter underneath, the younger ones hoary. Petiole one-third of the length of the leaf. Underneath at the inſertion of the leaf on each ſide is a minute brown ſeſſile gland. Raceme terminating, erect, tomentoſe, about a ſpan in length. Flowers copious, ſcattered, males intermixed with females. Germ hirſute, hoary. Styles three, two-parted. Native of the iſland of Trinidad, found there by von Rhor. Its proper place is between the twenty-firſt and twenty-ſecond ſpecies[m].

49. This is an inodorous, ſhrubby, ſmooth plant, three feet high, the ſtems partly procumbent, partly erect. Leaves petioled, alternate, two inches long. Peduncles axillary and very ſhort, having uſually four males at top, and two females at bottom. Flowers ſmall, green; the petals of the females twice as long as the calyx. Common at Carthagena[n].

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[c] Loureiro. [d] Ibid. [e] Ibid. [f] Cavanilles.

[g] Vahl. [h] Ibid. [i] Ibid. [k] Ibid. [l] Ibid. [m] Ibid. [n] Jacquin.

50. This is a ſhrub ten feet high, erect, having a pleaſant aromatic ſmell through all parts of it. Leaves green above, but beneath ſilvery and ſhining, varying much in ſize. Spikes cloſe, an inch long, loaded with many male flowers, but having very few females either below them or intermixed with them. Calyx tomentoſe, ſubferruginous. Corolla white. Styles three, branched, the length of the germ, reflex, and embracing it cloſely. The flowers come out in vaſt abundance before the appearance of the leaves, and the males falling off whiten all the ground. Native of Carthagena[o].

51. This is an upright ſhrub, four feet high, but little ſubdivided. Branches round, ſmooth, aſh-coloured. Leaves acute, ſmoothiſh, green on both ſides, beſet with ſilvery hairs, on very ſhort petioles, alternate, almoſt three inches long. Peduncles many-flowered, very ſhort, axillary, one or two. Flowers whitiſh, inodorous, hermaphrodite, male and female on the ſame or different plants. The firſt have a three-grooved germ, a ſemitrifid villoſe ſtyle, and oblong petals longer than the five-leaved calyx: the laſt have a corolla the length of the calyx, which is looſe and ſpreading, and a three-grooved ſemitrifid ſtyle, with the ſegments bifid. It flowers in june and july, uſually before the leaves appear. Native of Carthagena[p].

Many of the new ſpecies deſcribed above from ſeveral authors, may hereafter, from a more accurate examination by ſuch as have leiſure and opportunity, turn out either to be varieties, or the ſame ſpecies under different names, in the mean time they are given here on the authority of their reſpective authors.

Gærtner has added two very doubtful ſpecies, of which he thinks one (n. 52.) may be an *Adrachne*, (Andrachne) on account of its twin ſeeds, and ſlightly curved embryo, though it differs from that and all the *Tricoccæ* in the ſtructure of the ſeed. The fruit of the other (n. 53.) does not belong to a *Croton*, but having received it under that name, and not knowing where elſe to place it, he has left it under that genus.

52. Calyx five-leaved, ſmall, turned back below the capſule, which is globular, ſmooth, very obſcurely three-grooved, three-celled, tricoccous. Shells of the ſubſtance of paper, bivalve, elaſtic. In each cell a pair of ſeeds glued together, convex on one ſide, very obtuſely angular on the other; but when ſeparate acutely three-cornered, acuminate at the top and baſe, a ſort of dry berry, violet-coloured or blue purple, of a very ſmooth, even, ſhining ſurface; outer covering membranaceous, ſpongy within, middle bony, ſmall, obliquely cordate, compreſſed; inner membranaceous, pale, faſtened to the albumen.—It is called in Ceylon *Lyan-gheddie.*

53. Capſule globular, terminated by a three-ſided three-tubercled point, ſmooth, without any groove, tricoccous. Rind corky, thick, opening into ſix parts from the baſe. Shells the ſubſtance of paper, elaſtic, white, ovate. Seeds ſolitary, heart-ſhaped, ſomewhat compreſſed, convex on one ſide, on the other flat or ſlightly concave, with an umbilical perforation in the hollow of the heart. Outer covering membranaceous, wrinkled; middle cruſtaceous, brittle, pale ſtraw-colour; inner membranaceous, very thin, brown.—It is called in Ceylon *Kebella* and *Kebbele*; theſe differ only in the colour of the outer covering of the ſeed, which in the former is fulvous or red, in the latter duſky or brown[q].]

PROPAGATION AND CULTURE.

All theſe plants, except the ſixth, are natives of warm countries, and will not thrive in England, unleſs they be tenderly treated. They are all propagated by ſeeds; thoſe which are annual perfect their ſeeds in England; but the ſhrubby ſorts very rarely arrive to that perfection, ſo their ſeeds muſt be procured from the countries where they naturally grow. The ſeeds muſt be ſown on a hot-bed early in the ſpring, and when the plants are fit to remove, they ſhould be each tranſplanted into a ſmall pot, and plunged into a moderate hot-bed of tanner's bark, where they ſhould be ſhaded from the ſun till they have taken freſh root; then they muſt have air admitted to them daily, in proportion to the warmth of the ſeaſon; they muſt alſo be frequently refreſhed with water. After the plants are grown too tall to remain in the frames, they ſhould be removed, either into the ſtove or a glaſs caſe, where there is a hot-bed of tanner's bark, into which the pots ſhould be plunged, and there the annual ſorts will flower and perfect their ſeeds; but the ſhrubby ſorts muſt be removed into the bark-ſtove in the autumn, and during the winter ſeaſon they ſhould have but little water; and the ſtove ſhould be kept in a good temperature of heat, otherwiſe they will not live through the winter in England.

As theſe plants retain their leaves all the year, they make a pretty variety in winter, when they are intermixed with other plants, whoſe leaves are of different forms and colours from theſe.

6. The ſeeds of this plant ſhould be ſown in the autumn, ſoon after they are ripe, in a ſmall pot filled with light earth, and plunged into an old tan-bed in a frame, where they may be ſcreened from cold in the winter; and in the ſpring following the pot ſhould be removed to a freſh hot-bed, which will bring up the plants in a month's time; when theſe are grown large enough to remove, they ſhould be each planted in a ſmall pot, and plunged into a freſh hot-bed, being careful to ſhade the glaſſes daily, until the plants have taken new root; then they ſhould have air daily admitted according to the warmth of the ſeaſon, and but little water given to them: with this management I have had the plants flower and produce good ſeeds here, but never could obtain any with other treatment.

Unleſs the plants are brought forward in a hot-bed, the ſeeds do not ripen in this country. [Moſt of the ſhrubby ſorts may be increaſed by cuttings or layers, or both. C. lineare and Aſtroites will ſtrike very eaſily from cuttings: C. glabellum and ſebiferum not ſo eaſily, but they may be raiſed from layers, when ſeeds cannot be procured from abroad.

CROTON. See *Cluytia*, and *Tragia*.

CROW-BERRY. See *Empetrum*.

CROW-FOOT. See *Ranunculus*.

Crow-Garlick. See *Allium*.]

CROWN-IMPERIAL. See *Fritillaria*.

CRUCIANELLA. (*Dimin. from crux, a croſs; the leaves being placed croſswiſe.*)

Lin. gen. n. 126. *Reich.* 133. *Schreb.* 163. *Gærtn.* 24. *Rubeola Tourn.* 50.

Claſſ. 4. 1. Tetrandria Monogynia.

Nat. order of *Stellatæ.—Rubiaceæ.* Juſſ. 197.

GENERIC CHARACTER.

CAL. *Perianth* two-leaved, inferior: *leaflets* lanceolate, ſlightly keeled, acuminate, ſtiff, converging-compreſſed.

COR. one-petalled, funnel-form. *Tube* cylindric, filiform, longer than the calyx. *Border* four-cleft; *diviſions* tailed, with the points inflex.

STAM. *Filaments* four, placed in the mouth of the tube. *Anthers* ſimple.

PIST. *Germ* compreſſed, between the calyx and corolla. *Style* two-cleft, filiform, length of the tube. *Stigmas* two, obtuſe, oblong.

PER. *Capſules* two, connate.

SEEDS ſolitary, oblong.

OBS. Crucianella Maritima *has five-cleft corollas, with five ſtamens.*

Cr. Ægyptiaca *and* capitata *have alſo five-cleft flowers.* R.

ESSENTIAL CHARACTER.

Cal. two-leaved. (Involucre two or three-leaved, chaffy, calyx none. *G.*) *Cor.* one-petalled, funnel-form, with a filiform tube, and tailed border. *Seeds* two, linear (inferior, naked, bald. *G.*)

SPECIES.

1. Crucianella anguſtifolia. *Narrow-leaved Crucian.* *Lin. ſpec.* 157. *Reich.* 307. *hort. upſ.* 27. *cliff.* 32. *Sabb. hort.* 2. *t.* 12. *Gærtn. fruct.* 111.

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[o] Jacquin.

[p] Ibid.

[q] Gærtner, 2. p. 120.

Rubia anguſtifolia ſpicata. *Bauh. pin.* 334. *prodr.* 145. *Raii hiſt.* 485. *Park.* 276. 2.
Pſeudo-rubia. *Mor. hiſt.* 3. *ſ.* 9. *t.* 22. *f. penult.*
Erect; leaves in ſixes linear; flowers in ſpikes.

2. Crucianella latifolia. *Broad-leaved Crucianella.*
Lin. ſpec. 158. *ſyſt.* 151. *Reich.* 307. *hort. upſ.* 27. *cliff.* 33.
Rubia latifolia ſpicata. *Bauh. pin.* 334. *Raii hiſt.* 485.
R. ſpicata. *Bauh. hiſt.* 721. 2.—cretica. *Ger. emac.* 1119. 4.—latiore fol. *Park.* 275. 1.
Procumbent; leaves in fours lanceolate; flowers in ſpikes.

[3. Crucianella ægyptiaca. *Ægyptian Crucianella.*
Lin. ſyſt. 151. *Reich* 308. *mant.* 38.
C. herbacea. *Forſk. ægypt.* 30.
Leaves in fours ſublinear; flowers in ſpikes five-cleft.

4. Crucianella patula. *Spreading Crucianella.*
Lin. ſpec. 158. *Reich.* 308. *amœn.* 3. 401.
Diffuſed; leaves in ſixes; flowers ſcattered.]

5. Crucianella maritima. *Sea Crucianella.*
Lin. ſpec. 158. *ſyſt.* 151. *Reich.* 308. *Sabb. hort.* 2. *t.* 13.
Rubia maritima. *Bauh. pin.* 334. *Dod. pempt.* 357. *Cluſ. hiſt.* 2. 176. *Raii hiſt.* 485. *Ger.* 961. *emac.* 1119. 3. *Park. theat.* 275. 6.
R. marina narbonenſium. *Bauh. hiſt.* 721, 722. *f.* 1.
A procumbent underſhrub; leaves in fours mucronate; flowers oppoſite five-cleft.

[6. Crucianella monſpeliaca. *Montpellier Crucianella.*
Lin. ſpec. 158. *Reich.* 308. *Sauv. monſ.* 225. *Villars dauph.* 2. 316.
Rubia ſpicata repens. *Magn. monſp.* 225. *Raii hiſt.* 486.
Procumbent; leaves acute, thoſe on the ſtem in fours and ovate; on the branches about five and linear; flowers in ſpikes.]

7. Crucianella hiſpida.
Mill. dict. n. 4.
Rubeola americana hirſuta, parietariæ fol., flor. umbellatis purpureis. *Houſt. Mſs.*
Stem hiſpid; leaves lanceolate hirſute oppoſite; flowers umbelled terminating.

8. Crucianella americana.
Mill. dict. n. 5.
Leaves linear-lanceolate hirſute oppoſite, ſtem erect villoſe, flowers ſolitary axillary.

[9. Crucianella capitata.
Billardiere ic. ſyr. 1. *p.* 12. *t.* 3.
Procumbent, ſuffruticoſe, leaves in ſixes, ſublinear, flowers in heads, five-cleft.

DESCRIPTIONS, &c.

Theſe are herbaceous plants. Leaves ſtellate, from four to ſix in a whorl, often linear. Flowers bracted, in cloſe terminating ſpikes, or ſometimes but not ſo commonly in corymbs.]

1. This is an annual plant, which riſes with ſeveral upright ſtalks a foot high, having ſix or ſeven very narrow leaves in whorls at each joint. The flowers grow in cloſe ſpikes at the top, and from the ſides of the branches; they are ſmall, white, not longer than the calyx, and make no great appearance. It flowers in june and july, and the ſeeds ripen in autumn.—Native of the South of France and Italy.

[Cultivated 1659 in the botanic garden at Oxford[a].]

2. This is alſo an annual plant, ſending out ſeveral branching ſtalks from the root, which lie proſtrate. The flowers are produced in long ſpikes at the extremities of the branches; they are very ſmall, and make no great appearance.

[The ſtem is ſometimes erect, and perhaps it is only a variety of the foregoing. *Lin. ſyſt.*

Ray obſerves that the firſt differs from this only in the narrowneſs of the leaves and ſpikes, and the general lowneſs and ſmallneſs of the plant.—Native of the South of France and the iſlands of the Archipelago.

Cultivated 1663[b]. It flowers in june and july.

3. Annual. Stems not at all woody, a palm in height, at firſt erect, then ſpreading, at the root diffuſed or proſtrate. Leaves revolute, ſcabrous on the upper ſurface and at the edge; the loweſt ovate, the lower lanceolate, the reſt linear. Spikes terminating, ſolitary, lax. Bractes lanceolate, not keeled. Flowers hirſute, longer than the bractes, yellowiſh white, five-cleft and awned, as in *C. maritima.*—Native of Egypt[c].

4. Native of Spain. Annual.]

5. This is like the ſecond in the appearance of the leaves and ſtalks, but the flowers grow on the ſide of the ſtalks, almoſt in whorls, and make little appearance.

[Stems procumbent, perennial, woody. Leaves lanceolate, ſtiff, acute. Bractes ovate. Corollas five-cleft, awned; anthers black. Flowers triſt, yellowiſh colour; cloſed in the day, opening in the night, and of a ſtrong ſmell[d].—Native of the South of France, Italy, and Sicily.

Cultivated 1640[e]. It flowers in june and july.

6. Root annual. Plant ſmall, glaucous all over[f]. Stems thickiſh, diffuſed. Branches alternate, ſtraight, ſimple. Spikes terminating, like thoſe of the firſt ſpecies[g].

This creeps by the root, and the ſpikes are much larger, longer, and more frequent[h].

Native of the South of France, about Montpellier, and Vienne: alſo in Paleſtine.]

7. This has four-cornered rough prickly ſtalks, which bend downward. The flowers are produced in ſmall cluſters at the ends of the branches; the corolla is blue, and cut into four parts at the top; the capſules are two joined together, with one oblong ſeed in each.

8. This riſes with a ſhrubby branching ſtalk near three feet high; with narrow-lanceolate leaves covered with ſtinging hairs. Flowers pale blue, ſucceeded by twin fruit like the former.

Both are natives of La Vera Cruz in New Spain, whence they were ſent by Dr. Houſtoun. The plants grew in the Chelſea garden very well during the ſummer ſeaſon, but periſhed in the autumn before their ſeeds were ripe.

[9. Root perennial, horizontal, ſtrong, woody. Stem ſuffruticoſe, weak, naked at bottom; branches filiform. Leaves uſually ſix together, ovate-lanceolate, acute, rugged, rolled back on the ſides, on the fruit-bearing branches remote, on the others approximating. Flowers dark, almoſt black, ſome peduncled, others ſeſſile, ſupported by an involucre, which is one-leafed, two-parted, and has ſix or ſeven teeth. The ſeſſile flowers have the calyx or bracte three-toothed: the peduncled flowers have a three-leaved inferior calyx with unequal leaflets. Border of the corolla five-cleft, the ſegments bent in and having a claw at the tip. Filaments five, very ſhort: anthers oblong, two-grooved, dark-coloured. Style ſhorter than the tube, cloven and one part longer than the other: ſtigmas capitate, obtuſe. Capſules two, not opening, connate, one-celled. Seeds ſolitary, oblong.—Native of mount Lebanon, near the ſummit[i].]

PROPAGATION AND CULTURE.

1. 2. 5. 6. Theſe are preſerved in ſome gardens for the ſake of variety; if the ſeeds are ſown on a bed of light earth early in the ſpring, where they are deſigned to remain, they will require no other culture, but to thin them where they are too cloſe, and keep them clean from weeds; or if the ſeeds are permitted to ſcatter, the plants will come up in the ſpring, and require no other treatment; but the fifth ſort will not ripen its ſeeds here, when the autumn is not favourable.

Cruciata. See *Anagallis, Aſperula, Galium, Gentiana, Rubia,* and *Valantia.*

Crucita. See *Cruzita.*

[**Crupina.** See *Centaurea.*

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[a] Hort. kew.
[b] Ibid. from Ger. emac.
[c] Linn. mant.
[d] Linn. ſpec.
[e] Hort. kew. from Parkinſon.
[f] Villars.
[g] Linn. ſpec.
[h] Ray from Magnol.
[i] Billardiere.

Crus corvi. See *Panicum.*

Crus Galli. See *Cratægus* and *Panicum.*

Crusta Ollæ. See *Oldenlandia.*

Crux Andreæ. See *Aſcyrum.*

CRUZĪTA.

Lin. gen. n. 167. *Reich.* 179. *Schreb.* 224. *Loefl.* Claſſ. 4. 2. Tetrandria Digynia.
Atriplices. Juſſ. 85.

GENERIC CHARACTER.

Cal. *Perianth* three-leaved: the anterior leaf linear, acute, the lateral ones ovate, concave: permanent.

Cor. *Petals* four, of the appearance of the calyx, ovate, concave, the two outward ones perfectly entire; the inner ones with a very thin lacerated border.

Stam. *Filaments* four, capillary, a little ſhorter than the calyx. *Anthers* ſmall.

Pist. *Germ* ovate, obtuſe, compreſſed. *Style* very ſhort, two-parted: with ſpreading diviſions. *Stigmas* ſimple.

Per. none. *Corolla* converging, deciduous with the ſeed.

Seed ſingle, naked.

Obs. *The author now names the corolla the interior four-leaved calyx, and the perianth the exterior three-leaved calyx; therefore there is no corolla.* Syſt. veget. R.

ESSENTIAL CHARACTER.

Inner calyx four-leaved; *outer* three-leaved. *Cor.* none. *Seed* one.

SPECIES.

1. Cruzita hiſpanica.
Lin. ſpec. 179. *ſyſt.* 167. *Reich.* 351. *Loefl. itin.* 203.

DESCRIPTION, &c.

Stem high. Leaves oppoſite, lanceolate, quite entire. Flowers ſpiked, collected into a panicle.—Native of South America[a].

CRYPSIS. (From Κρυψις, *a hiding or concealing; the ſpike of flowers being concealed within the ſheath of the leaf.*)

Ait. hort. kew. 3. 505. *Lin. gen. Schreb. p.* 785. *n.* 1710. Pallaſia. *Scop. hiſt. nat.* 62. Antitragus. *Gærtn. t.* 80.
Claſſ. 2. 2. Diandria Digynia.
Nat. order of *Graſſes.*

GENERIC CHARACTER.

Cal. *Glume* one-flowered, two-valved: *valves* oblong-lanceolate, keeled, awnleſs; outer ſmaller.

Cor. *Glume* two-valved: *valves* lanceolate-oblong, awnleſs; inner longer than the calyx, outer ſhorter than the calyx.

Stam. *Filaments* two, capillary, longer than the corolla. *Anthers* oblong, cordate, incumbent.

Pist. *Germ* ſuperior, oblong. *Styles* two, capillary, ſhorter than the ſtamens. *Stigmas* hairy.

Per. none. *Corolla* incloſing the ſeed.

Seed ſingle, ſubcolumnar.

ESSENTIAL CHARACTER.

Cal. Glume two-valved, one-flowered. *Cor.* Glume two-valved, awnleſs.

SPECIES.

1. Crypſis aculeata. *Prickly Crypſis.*
Ait. hort. kew. 1. 48. *Vahl. ſymb.* 2. 17.
α. Schœnus aculeatus. *Lin. ſpec.* 63. *ſyſt. ed.* 13. *p.* 81. *Schreb. gram.* 2. 62. *t.* 32.
Phleum ſchoenoides. *Jacqu. auſtr.* 5. 29. *t. app.* 7.
Anthoxanthum aculeatum. *Lin. ſuppl.* 89. *ſyſt. ed.* 14. 73.
Antitragus aculeatus. *Gærtn. fruct.* 2. *p.* 7.
Phalaris vaginiflora. *Forſk. ægypt.* 18.
Dactylis? *Pallas it. ruth.* 2. 733. *t.* K. *f.* 1. & *t.* Q. *f.* 2.
Gramen aculeatum. *Camer. epit.* 745.
β. Phleum ſchoenoides. *Jacqu. obſ. in collect.* 1. *p.* 111. *ic.* 1. *t.* 15.

DESCRIPTION, &c.

Root annual. Culms many diffuſed, four inches high, branching, covered with the ſheaths of the leaves, which are ſmooth except at the edge; the upper ones gradually broader. Spike ſubglobular, almoſt faſtigiate, with the flowers almoſt ſeſſile in the boſom of the involucre; which is three-leaved, and a little longer than the ſpike[b]. Or, as Gærtner expreſſes it, the flowers are in a head, covered by two or three leaves, which are ventricoſe at the baſe, and ſerve it for an involucre. The flowers ſometimes have three ſtamens. The common receptacle is conical and tubercled, covered all over with florets. Seed free, without any groove, looſely ſurrounded by the calyx and corolla, which are both permanent; it is ſomewhat of an elliptic form, compreſſedly lenticular, pale, but where the ſcutellum is brown or cheſtnut-coloured, ſmooth but not ſhining. The ſcutellum is linear-lanceolate, nearly the ſame length with the ſeed, and placed at one edge of it. The embryo is long, ſubulate and yellowiſh.

This graſs was ſucceſſively named *Schœnus*, *Phleum*, and *Anthoxanthum* by Linneus. It differs abundantly from the firſt in its ſcutellate embryo: from the ſecond both in the form and ſituation of the calyx and ſcutellum or eſcutcheon: from the third, in its want of the awned nectary, and in its whole habit. It is therefore of a diſtinct genus. Gærtner thinks it might poſſibly have been known to Pliny under the name of *Tragos*; hence and from its bearing ſome ſimilitude to Kali, which is by ſome called *Tragos*, he names it *Antitragus.* Pliny's words are: "Eſt alia herba Tragos, ſemipedem alta, "fruticoſa, ſine foliis, puſillis racemis rubentibus, "grano tritici, acuto acumine, & ipſa in maritimis "naſcens." L. 25. ſ. 17. p. 440.

This graſs is a native of the South of Europe and Siberia. It is common alſo in Barbary.—Monſ. Thouin introduced it at Kew in 1783. It flowers in auguſt[c].

CRYPTOSTŎMUM. (*From* Κρυπτω, *to conceal, and* στομα, *the mouth: becauſe the mouth or opening of the corolla is concealed by the nectary.*)

Lin. gen. Schreb. n. 344. Moutabea. *Aubl.* 274. *Juſſ.* 420.
Claſſ. 5. 1. Pentandria Monogynia.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, funnel-form, ventricoſe at the baſe, coloured, with a five-cleft border: *ſegments* lanceolate, unequal.

Cor. one-petalled, funnel-form: *tube* very ſhort, inſerted into the throat of the calyx: *border* five-cleft; ſegments lanceolate, acute, unequal, converging.

Nectary faſtened to the baſe of the corolla, broad, arched, cloſing the mouth of the corolla, five-toothed.

Stam. *Filaments* none. *Anthers* five, each inſerted below each toothlet of the nectary.

Pist. *Germ* roundiſh, in the bottom of the calyx. *Style* cylindric, the length of the calyx. *Stigma* capitate.

Per. *Berry* globular, three-celled.

Seeds ſolitary, ovate, acute, marked with a large *hilum* or ſcar.

ESSENTIAL CHARACTER.

Cal. ventricoſe, five-cleft. Tube of the corolla inſerted into the throat of the calyx, border five-cleft. *Nect.* five-toothed, cloſing the mouth of the corolla. *Berry.* *Seeds* ſcarred.

SPECIES.

1. Cryptoſtomum gujanenſe. *Guiana Cryptoſtomum.*
Moutabea Guianenſis. *Aubl. pl. Guian.* 2. *p.* 680.
Cryptoſtomum guijanenſe. *Lin. ſyſt. nat. Gmel. p.* 390.

DESCRIPTION, &c.

This, which is the only ſpecies known, is a kind of ſpreading ſhrub, which grows in the iſle of Cayenne and in Guiana. Its native name is Aimoutabu.

The root of this ſhrub puts forth ſeveral twiggy and branching ſtems, of the length of five or ſix feet or more. By means of theſe twigs and branches it forms buſhes, more or leſs thick. Theſe branches are garniſhed with alternate, nearly ſeſſile, ſmooth, green, entire, oval leaves, terminating in a point. The flowers are produced in little cluſters from the boſoms of the leaves. They exhale an odour much reſembling that of the Syringa. The ovary becomes a three-celled yellow berry, each cell containing a kind of Almond, of an agreeable ſubſtance and of a gelatinous nature, and which the Creoles are fond of.

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[a] Linn. ſpec.

[b] Linn. ſuppl.

[c] Hort. kew.

CUBÆA.

Scop. Lin. gen. Schreb. n. 702. Tachigali. *Aubl. t.* 143. Tachigalia. *Juſſ.* 349.

Claſſ. 10. 1. Decandria Monogynia.

Nat. order of *Lomentaceæ. Leguminoſæ* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, turbinate, ſpreading, permanent, five-parted: *parts* roundiſh, cancave; four erect, the fifth and loweſt larger, declined.

Cor. *Petals* five, oblong, almoſt equal, furniſhed with claws, inſerted into the neck of the calyx; the three upper ones erect, the two lower declined.

Stam. *Filaments* ten, villoſe at the baſe, inſerted into the calyx below the petals, the three upper ones ſhorter, filiform, erect, preſſed cloſe to the upper petals; the ſeven lower ones longer, capillary, incumbent on and longer than the lower petals. *Anthers* oblong.

Pist. *Germ* oblong, pedicelled. *Style* capillary. *Stigma* acute.

Per. *Legume* long, coriaceous, villoſe, ventricoſe, obliquely acuminate, one-celled.

Seeds ſeveral, ſomewhat kidney-form.

ESSENTIAL CHARACTER.

Cal. turbinate, five-parted, unequal, permanent. *Petals* five, unequal. *Filaments* villoſe, three ſhorter. *Germ* pedicelled. *Legume* villoſe, ſix or ſeven-ſeeded.

SPECIES.

1. Cubæa paniculata. *Panicled Cubæa.*
   Tachigali paniculata. *Aubl. pl. Guian.* 1. *p.* 372. *t.* 143. *fig.* 1.
2. Cubæa trigona. *Trigonal Cubæa.*
   Tachigali trigona. *Aubl. pl. Guian.* 1. *p.* 374. *t.* 143. *fig.* 2.

DESCRIPTIONS, *&c.*

1. The firſt of theſe, or Cubæa paniculata, is a tree of ſixty feet high, extremely branchy at top: the branches are thick, the ſmaller ones or ramulets trigonal, growing in a ſcattered manner: the leaves are large, alternate, pinnate: the leaflets in ſix pairs, oppoſite, ſubovate, acute, quite entire, green and ſmooth above, ſomewhat downy beneath, and of an aſh-coloured green: there are two oppoſite ſtipules at the baſe of the leaf-rib: the flowers are ſpicated, terminal, and diſpoſed into a very ample panicle: the ramulets of the panicle are long, trigonal, and many-flowered. The flowers alternate, ſubpedunculated. It grows near the banks of rivers. Its native name is Tachigali.

2. This is found in the ſame ſituations, and is probably rather a variety of the former than truly diſtinct; and differs in having the pinnules ſituated alternately on the triangular midrib.

Cuckold Tree. See *Mimoſa.*

Cuckow Flower. See *Cardamine.*

Cuckow Pint or Pintle. See *Arum.*]

CUCUBALUS. (*Cucubalus of Pliny. From* κακος, *bad, and* βολος, *a caſt; or* βαλλω, *to caſt.* Lin.)

Lin. gen. n. 566. *Reich.* 615. *Schreb.* 771. *Gærtn.* 77. *Tourn.* 176. *Juſſ.* 302.

Claſſ. 10. 3. Decandria Trigynia.

Nat. order of *Caryophyllei.*

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, tubular, five-toothed, permanent.

Cor. *Petals* five. *Claws* the length of the calyx. *Border* flat: *diviſions* often bifid.

Nectary none crowning the corolla.

Stam. *Filaments* ten, ſubulate; the alternate ones later, alternately inſerted into the claws of the petal. *Anthers* oblong.

Pist. *Germ* ſomewhat oblong. *Styles* three, longer than the ſtamens, ſubulate. *Stigmas* pubeſcent, oblong, bent in an oppoſite direction to the ſun.

Per. *Capſule* covered, acuminate, three-celled, gaping five ways at the tip.

Seeds very many, roundiſh.

Obs. *The genus is diſtinguiſhed from Silene by the corolla having no nectarial crown.*

C. otites *is diæcous.*

The figure of the calyx is various in different ſpecies. R.

C. bacciferus *has a crowned corolla, and therefore is to be referred to the genus* Silene. Hall. R.

It has alſo a one-celled berry. S.

ESSENTIAL CHARACTER.

Cal. inflated. *Pet.* five, having claws, but no crown. *Capſ.* three-celled.

SPECIES.

1. Cucubalus bacciferus. *Berry-bearing Campion.*
   Lin. ſpec. 591. *ſyſt.* 419. *Reich.* 2. 340. *hort. cliff.* 170. *upſ.* 109. *Hudſ. angl.* 185. *Pollich pal. n.* 414. *Mill. fig. t.* 112. *Gærtn. fruct.* 1. 376. *Krock. ſileſ. n.* 658.
   Silene baccifera. *With.* 452. *Villars dauph.* 3. 605.
   Lychnis baccifera. *Scop. carn. n.* 517.
   Lychnanthus volubilis. *Gmel. in act. petrop.* 1759. *v.* 14. *p.* 525. *t.* 17. *f.* 1.
   Viſcago bacc. petalis ſerratis. *Hall. helv. n.* 912.
   Cucubalus Plinii. *Lugd.* 1429. *Tournef. inſt.* 339. *Raii ſyn.* 267. *Mor. hiſt. ſ.* 1. *t.* 1. *f.* 7.
   Alſine ſcandens baccifera. *Bauh. pin.* 250.
   A. baccifera. *Ger. emac.* 614. 13. *Raii hiſt.* 682.
   A. repens. *Dod. pempt.* 403.—baccifera. *Park. theat.* 759. 1.
   Cucubalum, vel. Alſine baccifera. *Bauh. hiſt.* 2. 175. 1.
   Calyxes bell-ſhaped, petals diſtant, pericarps coloured, branches divaricate.
2. Cucubalus Behen. *Bladder-Campion,* or *Spatling Poppy.*
   Lin. ſpec. 591. *Reich.* 2. 340. *fl. ſuec. n.* 385. *lapp.* 180. *hort. cliff.* 176. *Hudſ. angl.* 186. *With.* 445. *Relh. cant.* 318. *Engl. bot.* 164. *Pollich pal. n.* 415. *Leers herb. n.* 332. *Allion. pedem. n.* 1586. *Fl. dan. t.* 857. *D'Aſſo aragon. n.* 372. *Plenck, ic. t.* 349. *Villars dauph.* 3. 613. *Krock. ſileſ. n.* 659.
   Viſcago caule brachiato nodoſo, calycibus inflatis venoſis. *Hall. helv. n.* 913.
   Lychnis Behen. *Scop. carn. n.* 514.
   L. ſylveſtris, quæ Been album vulgo. *Bauh. pin.* 205. *Raii hiſt.* 998. *ſyn.* 337. *Mor. hiſt. ſ.* 5. *t.* 20. *f.* 1. *Pet. brit. t.* 57. *f.* 2. *Blackw. t.* 268.
   Behen album. *Ger.* 550. 2. *emac.* 678. 2. *Bauh. hiſt.* 3. 356.
   Papaver ſpumeum. *Lob. ic.* 340. *Park. theat.* 263.
   β. Lychnis maritima repens. *Bauh. pin.* 205. *Raii hiſt.* 998. *Bauh. hiſt.* 3. 357. 1. *Ger.* 382. 2. *emac.* 469. 2. *Park.* 639. 3, 4.
   Silene amoena. *Hudſ. angl.* 188—not of Linneus.
   Calyxes ſubglobular ſmooth netted-veined; capſules three-celled, corollas almoſt naked.
3. Cucubalus fabarius.
   Lin. ſpec. 591. *Reich.* 2. 341.
   Lychnis maritima ſaxatilis, fol. anacampſerotis. *Tournef. cor.* 24. *Boerh. lugdb.* 1. 214.
   Behen album ſ. Polemonium ſaxatile, fabariæ folio, ſiculum. *Bocc. muſ.* 133. *t.* 92.
   Leaves obovate fleſhy.
4. Cucubalus viſcoſus. *Clammy Campion.*
   Lin. ſpec. 592. *ſyſt.* 419. *Reich.* 2. 341. *fl. ſuec. n.* 386. *Krock. ſileſ. n.* 660.
   C. dubrenſis. *Mill. dict. n.* 6.
   Lychnis. *Till. piſ.* 105. *Tourn. cor.* 24. 14. *itin.* 2. *t.* 361.—viſcoſa. *Scop. carn. n.* 518? (See n. 16.)
   Flowers lateral, every way decumbent; ſtem undivided, leaves reflex at the baſe.
5. Cucubalus ſtellatus. *Four-leaved Campion.*
   Lin. ſpec. 592. *Reich.* 2. 341. *hort. upſ.* 110. *Gron. virg.* 50. (Silene). *Cold. noveb.* 106. (Drypis).

Lychnis caryophyllæus virginianus, &c. *Raii hiſt.* 1895.
Leaves in fours.

[6. Cucubalus ægyptiacus. *Egyptian Campion.*
Lin. ſyſt. 419. *Reich.* 2. 342. *mant.* 385.
Flowers erect, petals emarginate retroflex, with a toothlet on each ſide.]

7. Cucubalus italicus. *Italian Campion.*
Lin. ſpec. 593. *Reich.* 2. 342. *Jacqu. obſ.* 4. *p.* 12. *t.* 97.
Petals ſemibifid, calyxes club-ſhaped, panicle dichotomous erect, ſtamens and piſtils declined, ſtem erect.

[8. Cucubalus tataricus. *Hyſſop-leaved Campion.*
Lin. ſpec. 592. *Reich.* 2. 342. *hort. upſ.* 111.
Petals two-parted, flowers in one row, decumbent, peduncles oppoſite ſolitary erect, ſtem entirely ſimple.

9. Cucubalus ſibiricus. *Siberian Campion.*
Lin. ſpec. 592. *Reich.* 2. 342. *Gmel. ſib.* 4. 140. *n.* 34.
Viſcago. *Hall. goett.* 1. 150. *fig.*
Petals emarginate, flowers ſubverticilled, whorls umbellate leafleſs.]

10. Cucubalus catholicus. *Panicled Campion.*
Lin. ſpec. 593. *Reich.* 2. 342. *hort. upſ.* 111. *Jacqu. hort.* 1. 23. *t.* 59. *Krock. ſileſ. n.* 661.
Lychnis. *Cupan. cath.* 110.
β. L. nocturna non viſcoſa, herbaceo flore. *Dill. elth.* 425. *t.* 316. *f.* 408.
Petals two-parted, flowers panicled, ſtamens long, leaves lanceolate-ovate.

[11. Cucubalus molliſſimus. *Velvet Campion.*
Lin. ſpec. 593. *Reich.* 2. 343. *mant.* 385.
Petals half-two-parted, panicle dichotomous, ſtem and leaves ſoft like velvet, root-leaves ſpatulate.]

12. Cucubalus Otites. *Spaniſh Campion* or *Catchfly.*
Lin. ſpec. 594. *Reich.* 2. 343. *hort. cliff.* 272. *Hudſ. angl.* 186. *With.* 446. *Sowerby engl. bot. t.* 85. *Relh. cant. n.* 319. *Fl. dan. t.* 518. *D'Aſſo aragon. n.* 373. *Pollich pal. n.* 416. *Plenck, ic. t.* 348. *Villars dauph.* 3. 615. *Krock. ſileſ. n.* 662.
Viſcago. *Hall. helv. n.* 920.
Lychnis Otites. *Scop. carn. n.* 515.
L. viſcoſa, fl. muſcoſo. *Bauh. pin.* 206. *Raii hiſt.* 1002. & 1895. *ſyn.* 340. *Mor. hiſt. ſ.* 5. *t.* 20. *f.* 5. *Pet. brit. t.* 57. *f.* 11.
L. ſylveſtris ſeſamoides minor, fl. muſcoſo. *Mentz. pug. t.* 3. *f.* 2.
Seſamoides magnum ſalmanticum. *Cluſ. hiſt.* 1. 295. 1. *Ger.* 396. 1. *emac.* 493. 1.
Muſcipula ſalamantica major. *Park. theat.* 636.
M. muſc. fl., ſ. Ocymoides belliforme. *Bauh. hiſt.* 3. 350. 2.
Flowers dioecous, petals linear undivided.

[13. Cucubalus reflexus.
Lin. ſpec. 594. *ſyſt.* 419. *Reich.* 2. 343. *hort. upſ.* 112.
Lychnis. *Magn. monſp.* 171. *t.* 170. *Mor. hiſt.* 2. 544. *app. t.* 36. *Raii hiſt.* 996. 12.
Flowers ſpiked alternate in one row ſubſeſſile, petals ſubbipartite obſcure.

14. Cucubalus ſaxifragus.
Lin. ſyſt. 420. *Reich.* 2. 344. *mant.* 71. *Schreb. dec.* 9. *t.* 5.
Lychnis orientalis minima, &c. *Tournef. cor.* 24.
Petals bifid, calyxes ſtriated, the terminating ones ſubſeſſile, the ſide ones peduncled.

15. Cucubalus pumilio. *Dwarf Campion.*
Lin. ſyſt. 420. *Reich.* 2. 344. *mant.* 71.
Silene pumilio. *Jacqu. auſtr.* 5. *app. t.* 2.
Lychnis pumilio. *Scop. carn. n.* 513.
Betonica coronaria, &c. *Bauh. hiſt.* 3. 337.
Caryophyllus alpinus, calyce oblongo hirſuto. *Bauh. pin.* 209. *Mor. hiſt. ſ.* 5. *t.* 25. *f. ult.*
Stems one-flowered, ſhorter than the flower.

16. Cucubalus glutinoſus.
Retz. obſ. 2. *n.* 50.
Petals two-parted, calyxes club-ſhaped, panicle dichotomous ſpreading very much, ſtamens and piſtils ſtraight.]

17. Cucubalus paniculatus.
Mill. dict. n. 12.
Root-leaves ovate, acute, ſtem-leaves lanceolate oppoſite; flowers panicled, erect.

DESCRIPTIONS, *&c.*

1. [Root perennial, creeping, and ſpreading far in the ground. The whole plant ſomewhat hairy. Stems mounting four or five and even eight or ten feet, among buſhes, but trailing if not ſupported; herbaceous, and dyeing to the root every year: they are cylindric, roughiſh, and of a pleaſant green. Side branches oppoſite at each joint, horizontal or ſlanting downwards; the joints large. The leaves grow oppoſite at every joint, and reſemble thoſe of Chickweed both in ſhape and colour, but are larger and ſoft to the touch, being a little villoſe; they are oval-lanceolate, very entire, on ſhort leaf-ſtalks, thoſe below the branches bent down to the ſtem. Flowers axillary, ſtanding ſingle on ſlender peduncles, and nodding. Calyx ovate, bellying, cloven more than half way down, frequently tinged with purple. Petals ſpreading, white, cloven, claws very narrow, little ears at the baſe of the border, ſerrated at the end; ſo that this, according to ſome authors, is properly a *Silene*. Fruit an oval capſule reſembling a berry, almoſt as large as a ſmall black cherry; very black when ripe, ſmooth, ſhining, ſoft, and full of pulp: at firſt it has three cells, but the partitions being of a looſe texture; they ſoon ſhrivel up, and give the appearance of there being but one cell; it does not open at the point as in *Silene* and this genus. As the fruit enlarges, the calyx becomes more reflex; and when it is at the full ſize, appears open, the calyx being turned back to the peduncle. Seeds from thirty or thirty-five to forty, pedicelled, ſhining, wrinkled, kidney-form, blackiſh[a].

I have left this ſpecies where Linneus has placed it, though Haller and others think that it does not properly belong to this genus. Dr. Stokes has given the following ſpecific character—*ſtem branched, flowers ſolitary from the diviſions of the branches, calyxes bell-ſhaped five-cleft, petals bifid diſtant:* and remarks that its habit is that of *Ceraſtium*, but its general ſtructure that of *Silene*; and that it ſeems to form the connecting link between them.

Native of Germany, Flanders, France, Switzerland, Carniola, Italy, Spain; in woods and hedges. Mr. Ray obſerved it about Frankfort; in Italy and the South of France.—In Britain it has been found only in the Iſle of Angleſea, by Mr. Fowlkes of Llanbeder near Ruthin, a great collector of many rare Britiſh plants which I preſerve in my herbarium.—Johnſon in Gerarde ſpeaks of it as being wild in England, but ſays, that he has not ſeen it growing but in the garden of his friend Mr. Pemble at Marribone.—Parkinſon affirms that he has ſometimes found it by hedge ſides in our own land.—It flowers in june and july.

According to Mr. Miller, the berries are affirmed to be no leſs deadly, than the *Atropa* or deadly Nightſhade itſelf.

2. Root perennial, woody, yellow on the outſide, white within. Plant generally free from hairs. Stem decumbent at the baſe, branched, and dichotomous near the ſummit, round, green or red, a foot or eighteen inches in height; the joints large. Leaves below the forkings of the ſtem connate, frequently tinged with purple; the reſt not properly connate, but ſeſſile in pairs, cordate-lanceolate, very entire, covered on both ſurfaces with numerous pimples; they are ſoft and of a ſea-green colour: ſometimes however they are rough, or fringed with prickle-like hairs, or have a few hairs ſcattered over the ſurface. Flowers, ſome ſolitary at the diviſions of the ſtem, others crowded at the ends of the branches, ſome on long peduncles, nodding. Calyx inflated, longer than the claws of the petals, veined with green or browniſh purple, but ſometimes without veins. Petals white, cleft beyond the middle, diſtant, the ſegments frequently ſlightly ſerrulate; the

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[a] Miller's figures, Withering, Stokes in With. Woodw. Mſſ. Scopoli.

claws having rudiments of a crown, and thus forming a link between this genus and *Silene*. Stamens not longer than the germ, five of them fixed to a glandular nectary at the bottom of the flower, and ſhedding their farina ſooner than the other five, which are fixed to the petals: anthers yellowiſh, (ſometimes purple) with a greeniſh dirty yellow farina. Germ blackiſh and ſmooth, ſupported by a ten-cornered column: ſtigma not pubeſcent. Capſule generally opening ſix ways, but ſometimes five or ſeven, each valve generally ſplitting into two teeth: three-celled only at the baſe. Seeds ſmall, angular, prickly, glaucous-brown [b].

Linneus informs us, that a female variety is frequent in the Upſal garden; ſmaller than the hermaphrodite, the calyxes exactly ovate, more duſky, not oblong-ovate, corolla leſs, ſtamens ſhorter by half than the corolla terminated by a tubercle without anthers, ſtyles three or five, longer than the corolla, declining. Both plants are fertile [c].

This ſpecies varies with broader and narrower leaves, ſmooth and hairy; alſo with a double flower. Hence Mr. Miller has made three ſpecies of this:] 1. *C. latifolius*, our Engliſh Spatling Poppy, which he defines to have erect ſmooth ſtems, and the ſtamens longer than the corolla. 2. *C. anguſtifolius*, the Alpine Campion, differing from the foregoing in having much longer and narrower leaves, the ſtalks more divided and ſpreading, and the roots not creeping. 3. *C. Behen* (*var. γ. Lin. fl. ſuec.*); native of Sweden and other northern countries, where it paſſes for our common ſort. The ſtalks of this are much larger, the leaves longer and more pointed; the calyx curiouſly veined like net-work, of a purpliſh colour, whereas that of our common ſort is plain.

[Native of almoſt every part of Europe, in corn fields and dry paſtures; flowering in june, july, and auguſt.

According to Linneus, horſes, cows, ſheep, and goats eat it: Schreber on the contrary ſays that cattle reject it.—In Gothland, they apply the herb externally in eryſipelatous eruptions [d].—The leaves boiled have ſomething of the flavour of Peas, and proved of great uſe to the inhabitants of Minorca in 1685, when a ſwarm of locuſts had deſtroyed the harveſt [e].

Beſides thoſe given above, it has the names of *white corn Campion*, and *white Bottle*.]

3. Root biennial, putting out many ſucculent leaves near the ground, out of the middle of which ariſes an upright ſtalk about fifteen inches high, the lower part of which has leaves of the ſame form and conſiſtence as thoſe at bottom, but ſmaller; theſe are placed oppoſite; the upper part of the ſtalk divides into two ſmaller, on which ſtand a few ſmall herbaceous flowers at each joint. It flowers in june, and ſometimes ripens ſeeds in autumn.

It was diſcovered in the Levant by Tournefort, who ſent the ſeeds to the royal garden at Paris. It is a native of Sicily.

[4. Root biennial. Stem very ſimple, a foot high, erect, firm, round, villoſe, viſcid at top. Root-leaves narrow-lanceolate, almoſt ſmooth, acuminate; ſtem-leaves broader, claſping, viſcid-villoſe, ſomewhat waved, reflex at the baſe, not on the ſides. Peduncles oppoſite, ſhort, three-flowered. Flowers decumbent: calyx cylindric, ten-cornered, viſcid; petals white, two-parted. Stamens longer than the corolla; anthers greeniſh. Styles longer than the corolla. The flowers do not all turn one way, as in moſt of the ſpecies, but nod every way, and ſmell ſweet at night. Fruit ovate, one-celled [f].

Native of the Levant, Italy, Carniola, Sweden. Linneus obſerves that this is one of the many plants common to Sweden and Mount Ararat, as we find from Tournefort's collections.—It is certain that the Dover Campion (*Raii ſyn.* 340. 12.) is not this plant; but in the opinion of Dr. Stokes, nothing more than a variety of *Silene nutans*, if at all different. Retzius however, who cultivated them in his garden, ſays that the Dover Campion is ſo like *C. italicus* (n. 7.) in all reſpects, that he cannot diſtinguiſh them. The Italian plant indeed is more tender and delicate; that of Dover more ſtiff, larger, more patient of cold, the petals ſomewhat deeper cloven and not ſtained underneath as the Italian is, but theſe differences not being ſufficient to conſtitute a ſpecific diſtinction, he regards them as varieties.—Mr. Miller ſays the root is perennial, the corolla pale red, and that it flowers in june.]

5. The fifth ſort grows naturally in Virginia and Canada. This has a perennial root, from which ariſe two or three ſlender upright ſtalks about a foot high, their lower part having four leaves at each joint, placed in form of a croſs; theſe are ſmooth, of a deep green, about an inch and an half long, and half an inch broad near their baſe, terminating in acute points; the joints of the upper part of the ſtalk have white fringed flowers, ſtanding ſingle upon pretty long peduncles, which come out by pairs oppoſite. The flowers appear in june, and in warm ſeaſons the ſeeds will ripen in England.

[Petals four-cleft, with two-parted lobes; and having no crown [g].

Cultivated in 1768, by Mr. Miller [h].

6. Stem weak, branching, ſpread upon the ground. Leaves linear (not ſmooth), the younger ones ciliate at the baſe. Flowers axillary, ſolitary, ſeſſile. Calyx cylindric, in the fruit obovate, ten-cornered, with the interſtices membranaceous, the teeth ſmall. Petals minute, hardly longer than the calyx. Styles often four.—Found in Egypt, by Haſſelquiſt [i].]

7. Stem about two feet high, viſcid, and from each joint two ſide branches, under which are ſituated two very narrow leaves; it ſpreads out and forms a ſort of panicle at top, the ſtem and branches being terminated by cluſters of greeniſh flowers.

[Biennial. Leaves lanceolate, bluntiſh, pointing one way. Stem, eſpecially at bottom, hoary with a ſcarcely viſible cotton. Flowers on peduncles, erect: calyxes club-ſhaped, marked with ten grooves. Petals broadiſh, white, beneath lead colour [k].

Jacquin obſerves, that the branches are dichotomous; the leaves leſs tomentoſe than the ſtem, ſeſſile, ſome bluntiſh others pointed, the upper ones almoſt linear [1] and the ſtamens concolor with the piſtil inclining towards the ground.

Retzius conſiders our Dover Campion as a variety of this. See n. 4.

Native of Italy. Cultivated 1768, by Mr. Miller [l].
It flowers in may and june, and the ſeeds ripen in autumn.

8. Native of Ruſſia. Introduced about 1772. It flowers from june to auguſt; and is perennial [m].

9. Stamens longer than the flower.—Native of Siberia [n]. Introduced 1773, by Chevalier Murray. It flowers from june to auguſt; and is perennial [o].]

10. This is a perennial plant, ſending out many long leaves near the ground, between theſe ariſe round viſcid ſtalks three feet high (or from eighteen inches to that height), having at each joint two long narrow leaves, ending in acute points. The ſtalks branch out into many diviſions, on the upper parts of which the peduncles ariſe from each joint by pairs oppoſite; each of theſe ſuſtains three or four flowers of an herbaceous colour. [To this we may add, that the ſtems are erect or nearly ſo, glaucous, very ſmooth and thick. Leaves ſeſſile, waved, glaucous, ſmooth, quite entire, only on the lower part of the ſtem, and connate. Flowers in a nodding panicle: calyx ventricoſe, inflated, not ſinuated or angular: petals white: anthers reddiſh: ſtyles white: capſule ſubglobular [p]. Linneus affirms, that the calyx is duſky or brown; Krocker ſays, it is either of a very pale whitiſh bay, or elſe greeniſh and glaucous netted with bay-coloured veins.

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[b] Withering, Stokes in With. Woodw. Mſſ. Relhan, Pollich, Haller, Gmelin, Scopoli.

[c] Linn. ſpec.

[d] Linn. ſuec.

[e] Withering.

[f] Lin. ſuec.

[g] Linn. ſpec.

[h] Hort. kew.

[i] Linn. mant.

[k] Linn. ſpec.

[l] Hort. kew.

[m] Ibid.

[n] Linn. ſpec.

[o] Hort. kew.

[p] Krocker.

Native of Italy, Sicily, and Sileſia. Cultivated 1711, in the botanic garden at Chelſea[q]. It flowers in auguſt.

β. Perennial. Root-leaves many, oblong, narrow (the firſt broader) ſmooth, without veins. Stems two feet high and more, round, ſmooth, purpliſh towards the top, glaucous, not viſcid: towards the middle and upper part come out branches in pairs, of a purpliſh green colour, dividing into others that are ſimilar, which put forth flowers in june and july: calyxes oblong, cylindric, ſmooth, pale, glaucous; corollas herbaceous or yellowiſh green, petals narrow, divided to the middle, opening at night. Five of the ſtamens come out firſt, and afterwards the five others; anthers greeniſh. Capſule ſix-valved. At firſt the flowers are crowded into an oblong, pendulous ſpike; then they become looſer and form a thin nodding panicle; and when the ſeeds grow ripe, the whole panicle becomes erect.—It was ſent over by Boerhaave, and cultivated in the Eltham garden[r].

11. Stems many, rather ſtiff, erect, a foot high, ſomewhat tomentoſe, very ſoft: branches at bottom alternate, ſhorter. Stems mixed with thoſe which are barren, ſhorter by half than the others, erect; crowded with leaves at the end. Lower leaves ſpatulate; the reſt lanceolate; all ſomewhat fleſhy, very ſoft, tomentoſe, bluntiſh, ſomewhat reflected at the end, ſpreading. Panicle brachiate, with dichotomous branches, (viſcid, with three-flowered branchlets, *mant.*). Calyxes obtuſely toothed, club-ſhaped, erect, very ſoft. Flowers white, erect; borders ſhorter than the calyx, cloven half way; claws longer than the calyx. Stamens the length of the calyx. Styles longer than the corolla. Perennial, ſhrubby.—Native of the ſea coaſts of Italy[s].

12. Root long, fuſiform, ſlender. The root-leaves form a thick tuft, and are wedge-ſhaped, or rather ſpatulate, entire and acuminate, diminiſhing into a long channelled foot-ſtalk: they are clammy, and rough with minute, thick-ſet, curved, and ſometimes ſtellated hairs. From theſe ariſe one or ſeveral ſtems, from one to two feet high, upright, the lower part cloathed with a few oppoſite leaves, ſhaped like the root-leaves, the upper part is naked and clammy; at the bottom of the panicle are two membranaceous connate bractes, and the ſame under each ſet of flower-ſtalks. The lower part of the panicle both of the male and female flowers conſiſts of oppoſite branches, each topped with a kind of umbel (to which the two bracteal leaves form a ſort of general involucre) of ſeſſile flowers, and others each on a ſingle peduncle; ſome of the umbels are proliferous, and bear ſecond, and theſe again third umbels. The male flowers often produce abortive piſtils, and the females abortive ſtamens. The male plants bear more flowers, and in cloſer panicles than the female. Capſules long, elliptical[t], ſix-valved[*]. Calyx ſtreaked with green lines. Corolla pale green, or herbaceous-yellow: petals narrow, linear, very entire, a little bent in at the tip. Five filaments longer and five ſhorter than the corolla. Styles three[u], or rather varying from three to five[x]. *Pollich ſays that the flowers he deſcribes are hermaphrodite: ſuch are rarely ſeen with us.*

The male plant, ſays Haller, has a larger flower, and a reddiſh calyx: the female has a ſmaller flower, and a green calyx.]

The male plants often grow four or five feet high; but thoſe of the female are ſeldom above three feet. The flowers of the former are produced in looſe ſpikes from the lower joints of the ſtalk, but on the upper part, they ſtand in ſingle peduncles in cluſters quite round the ſtalks; theſe are ſmall, and of a greeniſh colour. The female plants have three or four flowers growing upon each peduncle, which ariſes from the ſide of the ſtalk.

[According to Scopoli, the male flowers are apetalous, and have the rudiment of a three-ſtyled germ. With us both ſexes have the ſame narrow entire yellowiſh petals.—In Tartary it is found with a hermaphrodite flower.

Native of Germany, Denmark, Switzerland, the Valais, France, Italy, Carniola, Spain, Siberia, England, in gravelly and ſandy ſoils: as in gravel pits, on the north ſide of Newmarket, about Chippenham. Beyond Barton Mills in the way to Brandon, and beyond Brandon in the road to Hillborough. Near Swaffham and Narborough, Norfolk.—It flowers in july and auguſt. It is marked by Linneus, Villars, Krocker, *&c.* as perennial. Miller ſays biennial: and ſo it is marked in the Kew catalogue.

Gerarde calls it great Baſtard Weld or Woade: he had the ſeeds from Padua, and expected the flowers 1597.—Parkinſon names it greater Spaniſh Catchfly. They did not know that it was a native of England; Ray ſeems firſt to have noticed this.

Ray alſo ſays, it is known in Suffolk by the name of Star of the Earth, and is in great repute as a remedy for the Hydrophobia. See hiſt. p. 1895. and Philoſ. tranſ. n. 187. Though Ray has no doubt of its efficacy, we ſhould be ſorry now to depend on ſuch a remedy in ſuch a diſorder.

13. Linneus deſires that this may be compared with *Silene mutabilis*, of which perhaps it may be only a variety.

According to Moriſon, the ſtem is a foot high, and erect; two narrow hirſute leaves at each joint: towards the top it bears white flowers, with narrow petals cloven to the middle, all turned one way; capſules oblong, hirſute on the outſide; ſeeds blackiſh.

Magnol thus deſcribes his plant: root white, fibrous. Stem (ſometimes there are two) a palm and half in height. Root-leaves form a tuft on the ground, like thoſe of Daiſy, and are hairy; ſtem-leaves two oppoſite at each joint, narrow and oblong. At the top of the ſtem a ſpike of flowers, bent down at firſt like a Scorpion's tail, but gradually becoming erect, after the flowers fall. Petals whitiſh, deeply cloven, bending inwards when they begin to wither. It is an annual plant. Linneus marks it as perennial.

Native of Montpellier.—Ray found Moriſon's plant about Naples, and Meſſina.

14. Root perennial. Stem a palm in height, with linear leaflets. Every calyx is ſeſſile between two leaflets, and from the axils of theſe other petioles frequently ariſe, and therefore it is not between two ſcales as in the genus Dianthus.—Native of the Levant[y].

15. Root-leaves forming a tuft, linear, obtuſe, ſmooth and even. Stem very ſimple and ſhort, bearing one flower, but having often three joints. Calyx oblong, bell-ſhaped, patulous, obtuſe, pubeſcent, the length of the ſtem[z]. Corolla red, the borders elliptic: germ ſeſſile; ſtyles ſhort[a].—Near Geneva. In Styria, and the mountains bordering on Carinthia. Mountains of Italy and Moravia. Perennial.

16. Root flowering the ſecond year. Stems erect, dichotomous, ſomewhat villoſe, here and there covered with a tenacious viſcid juice. Leaves lanceolate, acute, very entire, hiſpid, eſpecially the midrib; the upper ones linear. Calyx funnel-form, ten-angled, viſcid, when fruit-bearing club-ſhaped. Corolla greeniſh white; claws the length of the calyx, border cloven almoſt to the baſe. Stamens ſtraight, the length of the corolla or rather longer; anthers incumbent. Germ pedicelled, cylindric, obtuſe, higher than the calyx; ſtyles three diverging; ſtigmas very ſimple, obtuſe. Capſule globular (having a club-ſhaped appearance on account of the pedicel) half-three-celled, opening with a ſix-toothed, revolute top. Seeds kidney form[b].—Retzius doubts whether the Lychnis viſcoſa Scop. 518. (ſee n. 4.) be different from this.]

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[q] Hort. kew. [r] Dillenius. [s] Linn. ſpec. and mant.
[t] Woodw. Mſſ. [*] Scopoli. [u] Pollich. [x] Engl. bot.

[y] Linn. mant. [z] Ibid. [a] Scopoli. [b] Retz.

17. This is a biennial plant. Root-leaves many, on long petioles. From among theſe ariſes an upright ſtalk, ſending out two oppoſite ſide-branches at each joint; under each of theſe is one lanceolate acute leaf. Theſe ſide-branches, and alſo the upright ſtems are terminated by whitiſh flowers, formed into a panicle, and ſtanding erect. They appear in june, and are ſucceeded by ſeeds which ripen in autumn.—Native of Spain and Italy, whence Mr. Miller had the ſeeds. He cultivated it in 1759.

PROPAGATION AND CULTURE.

1. Delights in ſhade, and will thrive in almoſt any ſoil. It is apt to multiply too faſt by its creeping roots.

2. A rambling weed, and ſeldom cultivated. The root ſtrikes ſo deep into the ground, as not eaſily to be deſtroyed by the plough; and therefore it is frequently ſeen growing in bunches among corn.

3. The plant is biennial, generally periſhing when it has produced ſeeds; but unleſs it is ſown upon very dry rubbiſh, and in a warm ſituation, the plants will not live through the winter in England; for when they are in good ground they grow large, and are ſo replete with moiſture, as to be affected by the firſt froſt in the autumn; but where they have grown upon an old wall, I have known them eſcape, when all thoſe were killed which grew in the ground.

7 to 10, 12, *&c.* Theſe are propagated by ſeeds, which ſhould be ſown where the plants are deſigned to remain; for as they ſend out long top roots, they do not bear tranſplanting, unleſs it is performed while the plants are young. The twelfth is very hardy, and will thrive in almoſt any ſoil or ſituation, but agrees beſt with a dry ſoil. It is neceſſary to have ſome male plants among the females, to have perfect ſeeds.

[CUCUBALUS. See *Lychnis* and *Silene.*
CUCULLARIA. See *Valantia.*
CUCUMBER. See *Cucumis.*]

CUCŬMIS. (From Κικυὸς, or Σικυος, and that from Hebrew קיקא. Varro ſays, *Cucumeres dicuntur a curvore, ut curvimeres dicti.*)

Lin. gen. n. 1092. *Reich.* 1192. *Schreb.* 1479. *Juſſieu* 395. *Gærtn. t.* 88. *Tourn.* 31. Melo. *Tourn.* 32. Anguria. *Tourn.* Colocynthis. *Tourn.*

Claſſ. 21. 10. Monoecia Syngeneſia.
Nat. order of *Cucurbitaceæ.*

GENERIC CHARACTER.

* *Male flowers.*

CAL. *Perianth* one-leafed, bell-ſhaped, the margin terminated by five ſubulate teeth.

COR. five-parted, growing to the calyx, bell-ſhaped: *diviſions* ovate, veiny-wrinkled.

STAM. *Filaments* three, very ſhort, inſerted into the calyx, converging, of which two are bifid at the tip. The *anthers* are lines creeping upwards and downwards, outwardly adnate. *Receptacle* three-cornered, truncated, in the centre of the flower.

* *Female flowers* on the ſame plant with the males.

CAL. *Perianth* as in the males, ſuperior, deciduous.

COR. as in the males.

STAM. none. *Filaments* three, acuminate, very ſmall, without anthers.

PIST. *Germ* inferior, large. *Style* cylindric, very ſhort. *Stigmas* three, thick, gibbous, two-parted, turned outwards.

PER. *Pome* (Berry, *G.*) three-celled; (or four-celled, *G.*) cells membranaceous, ſoft, ſeparate (into two ſecondary ones, *G.*)

SEEDS numerous, ovate-acute, compreſſed, placed in a double order.

ESSENTIAL CHARACTER.

Calyx five-toothed. *Cor.* five-parted.
MALE. *Filaments* three.
FEM. *Piſt.* three-cleft. *Pome* with argute ſeeds.

SPECIES.

[1. Cucumis Colocynthis. *Bitter Cucumber* or *Gourd, Coloquintida.*
Lin. ſpec. 1435. *Reich.* 4. 204. *hort. upſ.* 293. *mat. med.* 209. *Blackw. t.* 441. *Sabb. hort.* 1. *t.* 70.
Colocynthis fr. rotundo, major. *Baub. pin.* 313.
Colocynthis. *Cam. epit.* 982. *Baub. hiſt.* 2. 232. *Ger.* 768. *emac.* 915. *Raii hiſt.* 642. *Mor. hiſt. ſ.* 1. *t.* 6. *f.* 1.
C. vulgaris. *Park. theat.* 160.
Leaves multifid; fruits globular ſmooth.

2. Cucumis prophetarum. *Globe Cucumber.*
Lin. ſpec. 1436. *Reich.* 4. 204. *amœn.* 4. 295. *Jacqu. hort.* 1. *t.* 9. *Blackw. t.* 589. *Shaw afr.* 164. (Colocynthis.)
Leaves cordate five-lobed toothletted obtuſe; fruits globular ſpiny-muricate.

3. Cucumis Anguria. *Round prickly-fruited Cucumber.*
Lin. ſpec. 1436. *ſyſt.* 869. *Reich.* 4. 205. *hort. upſ.* 292. *Brown. jam.* 353. 1. *Pluk. phyt.* 170. *f.* 3.
Anguria amer. fr. echinato eduli. *Tourn. inſt.* 107. *Mill. fig. t.* 33.
Leaves palmate-ſinuate; fruits globular echinate.

4. Cucumis africanus. *African Cucumber.*
Lin. ſyſt. 869. *ſuppl.* 423.
Leaves palmate-ſinuate; ſtem angular; fruits oval echinate.

5. Cucumis acutangulus. *Acute-angled Cucumber.*
Lin. ſpec. 1436. *ſyſt.* 869. *Reich.* 4. 205. *Jacqu. hort.* 3. *t.* 73, 74. *Grew muſ.* 229. *t.* 17. *f.* 2. *Pluk. phyt. t.* 172. *f.* 1. *Rumph. amb.* 5. *t.* 149. *Lour. cochinch.* 591. *Burm. ind.* 209.
Leaves rounded-angular; fruits with ten acute angles.]

6. Cucumis Melo. *Common* or *Muſk Melon.*
Lin. ſpec. 1436. *Reich.* 4. 205. *hort. cliff.* 451. *upſ.* 292. *mat. med.* 210. *Sabb. hort.* 1. *t.* 65. *Blackw. t.* 329. *Lour. cochinch.* 591.
Melo. *Mill. dict. Baub. hiſt.* 2. 242. *Ger.* 771. *emac.* 917. *Park. par.* 525. *Raii hiſt.* 644. *Mor.* 1. 6. 3, 4.
M. vulgaris *Baub. pin.* 310.
Angles of the leaves rounded; fruits toruloſe.

[7. Cucumis Dudaim. *Apple-ſhaped Cucumber.*
Lin. ſpec. 1437. *Reich.* 4. 206. *Dill. elth.* 223. *t.* 177. *f.* 218. *Raii ſuppl.* 333. (Melo.) *Walth. hort.* 133. *t.* 21. (Cucumis.)
Angles of the leaves rounded; fruits ſpherical with the navel retuſe.]

8. Cucumis Chate. *Hairy Cucumber.*
Lin. ſpec. 1437. *Reich.* 4. 206. *Haſſelqu. itin.* 491. *edit. engl.* 258. *Forſk. ægypt. cent.* 6. *p.* 163. *Raii hiſt.* 646. 4.
C. ægyptius rotundifolius. *Baub. pin.* 310. *Mor.* 1. 7. 3.
C. ægyptius Chate. *Baub. hiſt.* 2. 248. *f.* 2.
Chate. *Alp. ægypt.* 114. *t.* 116. *Veſl. ægypt.* 47.
Hirſute; angles of the leaves entire, rounded; fruits fuſiform, drawn to a point at each end, rough with hairs.

9. Cucumis ſativus. *Common Cucumber.*
Lin. ſpec. 1437. *Reich.* 4. 206. *hort. cliff.* 451. *upſ.* 292. *mat. med.* 210. *Gærtn. fruct.* 2. 47. *Lour. cochinch.* 591. *Sabbat. hort.* 1. *t.* 63. *Black. t.* 4. *Park. theat.* 772. 1.
C. ſativus vulgaris. *Baub. pin.* 310.
C. vulgaris. *Dod. pempt.* 66. *Baub. hiſt.* 2. 245. *Ger.* 762. 1. & 764. *emac.* 910. 1. & 4. *Raii hiſt.* 645. *Mor.* 1. 6. 6.
Cucumer. *Park. parad.* 524.
Leaves ſtraight between the angles; fruits oblong, ſcabrous.

[10. Cucumis anguinus. *Serpent Cucumber* or *Melon.*
Lin. ſpec. 1437. *Reich.* 4. 207. *Rumph. amb.* 5. 407. *t.* 148.
Leaves lobate; fruits cylindric very long, ſmooth and even, writhed.]

11. Cucumis flexuoſus. *Flexuoſe Cucumber* or *Melon.*
Lin. ſpec. 1437. *Reich.* 4. 207. *Baub. pin.* 310. *Thunb. jap.* 324. *Raii hiſt.* 646.
C. oblongus. *Baub. hiſt.* 2. 247. *Dod. pemp.* 662.

C. anguinus. *Ger.* 763. 3. *emac.* 910. 2. *Mor.* 1. 6. 7.—flexuoſus. *Park. theat.* 772. 2.
Leaves angular-ſublobate; fruits cylindric furrowed curved.

12. Cucumis conomon.
Lin. ſyſt. 869. *Thunb. jap.* 324.
Leaves angular-ſublobate toothed; fruits fuſiform ten-furrowed ſmooth.

13. Cucumis maderaſpatanus.
Lin. ſpec. 1438. *Reich.* 4. 207. *hort. upſ.* 293. *Lour. cochinch.* 592. *Lin. fl. zeyl.* 356. (Bryonia.) *Berg. cap.* 351. (Bryonia.) *Pluk. alm.* 123. *t.* 170. *f.* 2.
Leaves cordate entire toothletted; fruits globular ſmooth.

DESCRIPTIONS, &c.

Theſe are all annual plants, with herbaceous ſcandent ſtems. The leaves of *Colocynthis* and *Anguria* are palmate-laciniate, in the other ſpecies they are heart-ſhaped. Peduncles ſhort, one or many-flowered. Fruit of *Colocynthis* ovate, of a comparatively ſmaller ſize, with a dry bitter pulp or fleſh not eatable: of *Anguria* ſmaller than any of the reſt, echinate on the outſide, within pulpy, watery, eatable: of *Melon* ovate, fleſhy, ſweet, with a grooved or netted ſurface: of *Cucumber* oblong, ſubcylindric, the ſurface unequal, within fleſhy, inſipid [a].

1. Coloquintida has leaves of a dark green, rough, and deeply laciniated in the manner of thoſe of the Citrul, but ſmaller: the ſtems are rough, and trailing, like thoſe of Bryony. The flowers are rather ſmall and of a dull yellowiſh colour: the fruit is round; of the ſize of an Orange; it is green at firſt, but grows yellow when quite ripe: the pulp or internal part is light, ſpongy, and white, and is moſt intenſely and intolerably bitter: it is this ſubſtance dried which is the Coloquintida of the ſhops. Its native place is unknown.

Gerarde ſays, it has been delivered unto him for a truth, that Coloquintida grows in the ſands of the Mediterranean ſea ſhore wild, eſpecially at that ſide of Barbary, as alſo without the mouth of the ſtraits near to Santa Cruz, &c.

It flowers from may to auguſt. Cultivated in 1551 [c].

2. The plant is ſmaller in every part than the common Melon, and has a nauſeous odour: the ſtem and footſtalks are rough and angular: the leaves are cordate, rough beneath, five-lobed, and toothed; the intermediate lobe nearly twice the length of the others: the peduncles are one-flowered: the fruits are ſmooth, but are armed with ſoft and innocent prickles ſcattered upon them. They are variegated with uncertain ſtreaks, alternately greeniſh and yellowiſh: their bitterneſs equals that of Coloquintida [d].

Native of the Levant; flowering from june to ſeptember. Introduced 1777, by Joſ. Nic. de Jacquin, M. D. [e]

3. Flowers ſmall, like thoſe of Bryony. Stems angular hiſpid [f].

The fruit of this ſort is eaten when green by the inhabitants of the Weſt Indian iſlands, where it is indigenous, as Cucumbers; but theſe are far inferior to our common Cucumber. The fruit ſeldom grows ſo large as a pullet's egg, and is in ſhape like it; but the rind is cloſely beſet with blunt prickles, ſomewhat like the ſkin of a hedgehog: where it is expoſed to the full air, it is of a dark green colour, but when it is cloſely covered, either by the leaves or weeds, it is white [g]. The fruit is frequently uſed in the ſugar iſlands, with other herbs, in ſoups; and is eſteemed an agreeable and wholeſome ingredient in them [h].

It flowers in july and auguſt; and was cultivated by Mr. Miller in 1755 [i].

4. Stems numerous, ſomewhat angular, proſtrate. Leaves five-cleft. Flowers ſmall.—Native of the the Cape of Good Hope [k].

5. Flowers yellow; males terminating, on many-flowered peduncles: females lateral, ſolitary. Leaves cordate, ſharply angular, ſerrate-toothed, hairy. Stem five-cornered, acute, climbing. Fruits ovate or oblong, obtuſe, five inches long, browniſh-yellow, ſmooth. Seeds ſuboval, compreſſed, ſmooth, black, looking as if they had been chewed, as in Anguria [l]. The fruit is very inſipid, but it is eaten boiled and pickled.

Native of India. Flowering from june to ſeptember. Cultivated 1692, by Biſhop Compton [m].

6. Melon or Muſk Melon has the ſtems procumbent or trailing to a great length, and very much branched, furniſhed with tendrils for climbing. Leaves palmate-ſinuate, or entire, waving about the edge and ſlightly toothed, with rounded corners; rough with briſtles. Flowers pale yellow, lateral, ſolitary. Calyx covered with white hairs. Corolla wrinkled, ribbed, and having briſtles along the ribs on the outſide. The female flowers, as they are commonly called, have four large anthers, and the germ is ſubglobular and covered with white hairs. This diſcovery of the flowers commonly called females being real hermaphrodites with fertile anthers, as they ſeem to be, makes it probably leſs neceſſary to carry the males to them, as practiſed by ſome gardeners, though nature having provided male flowers, it is moſt likely that the pollen in the anthers of the others is frequently defective.—Fruit roundiſh or oval, blunt, commonly furrowed longitudinally, ſometimes netted, ſometimes warted or carbuncled, from four to ten or twelve inches in length and diameter, yellowiſh green or white; pulp firm, muſky, reddiſh ſeldom green. Seeds many, oblong, pale, in a watery pulp. It was firſt introduced into Europe from Perſia.

It has lately been affirmed that it is a native of Calmuc Tartary: but it is difficult to determine the original country of thoſe plants which have been cultivated time immemorial. It appears from Lobel to have been cultivated in England before 1570.

Gerarde (1597) ſays, that he has ſeen at the Queen's houſe at Saint James very many of his firſt ſort (green with a red fleſh) ripe, through the diligent and curious nouriſhing of them by a ſkilful gentleman the keeper of the ſaid houſe, called Maſter Fowle; and in other places near unto the right honorable, the Lord of Suſſex houſe of Bermondſey by London, where from year to year there is very great plenty, eſpecially if the weather be any thing temperate.

Parkinſon (1629) informs us that Melons have been only eaten by great perſonages, becauſe the fruit was not only delicate but rare; and therefore divers were brought from France, and ſince were nurſed up by the kings or noblemens gardiners only: but now divers others that have ſkill and conveniency of ground for them do plant them and make them more common.

7. The lower leaves roundiſh, the upper ſomewhat angular, both toothed about the edge, ſomewhat hirſute, paler underneath. Flowers yellow, divided into five or ſix roundiſh ſegments, ſlightly crenate on the edge. Fruit the ſize and form of an Orange; the rind ſmooth, ſometimes ſparingly warted, ſlightly furrowed only at top, variegated with green and dark orange, and oblong unequal green ſpots, when the fruit is full ripe becoming yellow and at length whitiſh: it has a very fragrant vinous muſky ſmell, and a whitiſh, flaccid, inſipid pulp [n].

It is a native of the Levant. Dillenius ſays that the ſeeds which grew in the Eltham garden (1732) were reported to come from Morocco, and were received from Mr. Peter Collinſon, who had them from Lord Petre. It flowers in july and auguſt.

8. Stems decumbent, cirrhoſe, obſcurely five-cornered. The whole plant covered cloſe and thick with ſoft, white, pullucid hairs, like the germ in the common Melon, which differs from this in being rough with ſtiffiſh, conical, diſtant hairs. The

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[a] Juſſieu.
[c] Hort. kew.
[d] Jacquin.
[e] Hort. kew.
[f] Linn. ſpec.
[g] Miller's figures.
[h] Browne.
[i] Hort. kew.
[k] Linn. ſuppl.
[l] Linn. and Loureiro.
[m] Hort. kew.
[n] Dillenius.

fruit ſwells in the middle, is rough, with erect, white hairs, and has a beak at each end[o]. In the fertile earth round Cairo, after the inundation of the Nile, and no where elſe in Egypt.—Linneus ſays Egypt and Arabia.—Native of the Levant[p].

The fruit is rather watery; the fleſh almoſt of the ſame ſubſtance with the Melon; the taſte ſomewhat ſweet and cool, but not ſo cool as the water melon. The grandees and Europeans in Egypt eat it as the moſt pleaſant fruit they have, and that from which they have leaſt to apprehend[q]. With us it is very indifferent. Cultivated in 1768, by Mr. Miller[r].

9. The common Cucumber, ſo generally cultivated for the table, is ſo well known, ſays Mr. Miller, as not to require a particular deſcription. [We may however remark, that the leaves differ from thoſe of the Melon very much in their form, running out into ſharp angles, eſpecially at the end, with the line between the angles ſtraight, having the nerves prominent on the upper ſurface, and very rough, with briſtles; they are alſo of a firmer texture. In the flowers the ſegments of the calyx are much longer; the corolla of a deeper yellow, each petal or part much wrinkled, commonly rolled in at the edges, the ribs at the back briſtly as in the Melon, and the principal rib ending in a long green point: there are no veſtiges of anthers in the female flowers, and the germ is very oblong, angular but obſcurely, not hairy, but muricated with prickles ariſing from a ſmooth warty ſubſtance: in ſome of the highly-cultivated varieties this natural pricklineſs vaniſhes.

The principal varieties are the following:

1. Common rough green prickly.—Six or ſeven inches long, with a dark green ſkin, cloſely ſet with ſmall prickles. Hardy, a plentiful bearer, but does not fruit early.

2. Short green prickly.—Three or four inches long. Skin rather ſmooth, but having ſmall black prickles. One of the hardieſt and earlieſt ſorts.

3. Long green prickly.—From ſix to eight or nine inches long, thinly ſet with prickles. This is a good bearer, and the beſt for the main crops. There is a variety of this with white fruit.

4. Early green cluſter.—Shortiſh, early, and remarkable for the flowers appearing in cluſters.]

5. Long ſmooth green Turkey.—The ſtalks and leaves much larger than the former ſorts. The fruit is generally twice the length (ten to fifteen inches), and has a ſmooth rind without prickles.

6. Long ſmooth white Turkey.—Differs little from the foregoing, except in colour. It is, however, leſs watery, and is therefore generally better eſteemed.

[7. Large ſmooth green Roman.—The plants are very ſtrong; and the fruit large, long, and quite ſmooth.]

8. Long white prickly Dutch.—Fruit eight or ten inches long, white, with ſmall black prickles. A bad bearer, at leaſt with us, and not ſo hardy as the common ſorts; but the fruit is leſs watery, and has fewer ſeeds.

[The four laſt varieties are all, indeed, but indifferent bearers; but the fruit being very large, handſome, and well taſted, ſome plants ſhould be admitted where there is room.

Parkinſon (parad. 1629.) enumerates the long green—the ſhort—the long yellow—the early ripe or French—the Dantſicke—the Muſcovic. He alſo informs us, that pickled Cucumbers, which were then much uſed for ſauce all winter long, came from beyond ſea; and though ſome ſtrove to equal them, yet theſe were nothing comparable to the former.

Ray, in his travels, obſerves that in Italy they call our Cucumbers *Citrulli*; and water Melons and Pompions *Cucumeri*. In Spaniſh it is called *Cobombro*; in French *Concombre*; in Swediſh *Gurka*; in Daniſh *Angurke, Agurke*; in Dutch *Komkommer*; in German *Gurke, Kukummer*.

10. Flowers ſmaller than others of the genus, and with a long tube: leaves a palm long and broad; divided, but not very deeply, into five or ſeven ſegments, obſcurely toothed at the edges. The flowers ſcarce exceed the ſize of Jeſſamine flowers. The fruit or Cucumber is three feet, or three feet and a half long; it is never ſtraight, but ſtrangely twiſted, ſo as to reſemble a ſnake: it is externally of a grayiſh green, and grows very red in time. The odour is rank, and the taſte bitter[s].

11. Fruit the ſize of a large pear, of an oblong cylindric form, ſmooth, even, eatable and delicious. It is cultivated about Nagaſaki and elſewhere in Japan; is ripe in June, and is called by the Dutch Banket-Melon[t]. Cultivated 1597[u].

12. Stem decumbent, ſtriated, hiſpid with ſcattered hairs, as are the petioles. Leaves cordate, nerved, pale underneath, rough, with hairs on both ſides, eſpecially the nerves underneath. Flowers axillary, peduncled, aggregate, yellow. Peduncles very ſhort, hiſpid. Fruit the ſize of a man's head, or larger, oblong. It is cultivated every where in Japan: the fruit preſerved is ſold under the name of *Connemon*, and is a common food among the Japoneſe; it is alſo frequently eaten by the Dutch at Batavia, and is ſometimes brought to Holland[x].

13. Stem herbaceous, ſlender, angular. Leaves frequently angular at the baſe, oblong, acute, ſmooth[y]. Loureiro ſays, it is very nearly allied to Melothria. According to him, the ſtem is round, ſlender, branched, climbing. Leaves roundiſh, petioled, alternate, ſmall. Flowers white, axillary, on many-flowered peduncles. Fruit half an inch in diameter, yellow.—Native of Ceylon and other parts of the Eaſt-Indies, of Cochinchina, and alſo of the Cape of Good Hope.

Virtues.

The plants of this genus in general, or, to ſpeak more properly, of this natural tribe, are conſidered as cooling: the ſpecies moſt in uſe is the C. ſativus, or common Cucumber: this, however, when it is too large, or advanced beyond a certain period of its growth, acquires a bitterneſs, and then becomes unwholeſome. The Melon alſo under certain circumſtances is apt to diſagree, unleſs corrected by ingredients of a warming nature, as pepper, &c. The Citrul or water melon is much eſteemed as a cooling food in the warmer climates. The ſeeds of melons, cucumbers, &c. were formerly uſed in medicine, under the title of the cold ſeeds, in emulſions, &c. Coloquintida, or the dried pulp of the C. Colocynthis, is an extremely ſtrong and irritating cathartic, and has been ſometimes commended not only as an efficacious purgative, but alſo as an alterative, in obſtinate chronical diſorders; others, however, have conſidered it as a dangerous drug: its principal uſe has been that of a ſtimulus to other purgative medicines: thus an extract of Colocynth has been ſometimes ordered in conjunction with aloes; and for mixing with various purgative pills, &c.

PROPAGATION AND CULTURE.

1 to 5. and 10 to 13. Being annual plants, are raiſed from ſeed; and coming from hot or warm climates, require the protection of the dry or bark ſtove; eſpecially the third, which is a native of the Weſt-Indies.]

6. THE MELON.

Varieties or ſorts.—There is a great variety of this fruit cultivated in the different parts of the world, and in this country there are too many of them propagated, which are of no value, eſpecially by thoſe who ſupply the markets, where their ſize is chiefly regarded; ſo that by endeavouring to augment their bulk, the fruit is rendered of no value; I ſhall therefore only mention a very few of the varieties, which are the moſt deſerving of care, excluding the common Melons, as being unworthy of the trouble and expence in cultivating.

1. The ſort of Melon which is in the greateſt eſteem among all the curious in every part of Europe, is the Cantaleupe; which is ſo called from a place about fourteen miles from Rome, where the

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[o] Linn. ſpec. [p] Hort. kew. [q] Haſſelquiſt. [r] Hort. kew.

[s] Rumphius. [t] Thunberg. [u] Hort. kew. from Ger. [x] Thunberg. [y] Linn. zeyl.

pope has a country ſeat, in which place this fruit has been long cultivated; but it was brought thither from that part of Armenia which borders on Perſia, where this fruit is in ſo great plenty, that a horſe-load is ſold for a French crown. The fleſh of this Melon, when in perfection, is delicious, and does not offend the moſt tender ſtomachs, but may be eaten with ſafety. The Dutch are ſo fond of this fruit, as to cultivate very few other ſorts, and by way of pre-eminence, call it only by the appellation of Cantaleupe, and never join the title of Melon to it, which they apply indifferently to all the other ſorts. The outer coat of this is very rough, and full of knobs and protuberances like warts; it is of a middling ſize, rather round than long, and the fleſh is for the moſt part of an Orange colour, though there are ſome with a greeniſh fleſh, but I have never met with any of that colour ſo good as thoſe of the other.

2. The Romana is by ſome much eſteemed, and when the fruit is well conditioned, the plants in perfect health, and the ſeaſon dry, it is a good Melon, and may be brought forwarder in the ſeaſon than the Cantaleupe; therefore thoſe who are deſirous of early Melons may cultivate this ſort.

3. The Succado is alſo a good ſort, and may be cultivated for early fruit, but theſe muſt give way to the Cantaleupe, when that is in ſeaſon.

4. The Zatte is alſo a very good Melon, but very ſmall. The fruit of this is ſeldom bigger than a large orange; it is a little flatted at the two ends, and the outer coat is warted like the Cantaleupe, but there is ſo little fleſh in one of theſe fruit, that they are ſcarce worthy the trouble of propagating.

5. The ſmall Portugal Melon, which is by ſome called the Dormer Melon, is a pretty good fruit, and the plants generally producing them in plenty; by many people this is preferred to moſt other, eſpecially thoſe who love a plenty, and are not ſo nice in diſtinguiſhing the quality: this may alſo be cultivated for an early crop.

6. But the beſt Melon for this purpoſe is the Black Galloway, which was brought from Portugal by Lord Galloway many years ſince, but of late years is rarely to be met with in England, it having degenerated by growing among other ſorts. The fruit of this ſort will ripen in a ſhorter time from its firſt ſetting, than any other which I have yet ſeen; and when ſuffered to ripen naturally, is not a bad fruit.

Of the ſeeds.—The few varieties here mentioned, are ſufficient to ſatisfy the curious, and there are ſcarce any other which deſerve the trouble; indeed thoſe who have a true taſte for this fruit, ſeldom cultivate any but the Cantaleupe; but as I before obſerved, where this fruit is deſired early in the ſeaſon, the Cantaleupe is not ſo proper as ſome of the other, therefore a few plants of one of the other ſorts ſhould be raiſed earlier in the ſpring, but ſhould be in a different part of the garden from the Cantaleupe Melons; for when two ſorts of Melons grow near, they cannot be preſerved perfectly right; therefore the Dutch and German gardeners are very careful in this reſpect, and in order to keep the ſort in perfection, do not plant any other ſort of Melon, Cucumber, or Gourd, near theſe, leſt, by the impregnation of the farina of thoſe other, theſe fruit ſhould be rendered bad; and in this particular I am convinced, from long experience, they are right; and from the not obſerving this, many perſons who are lovers of this fruit, have gradually diminiſhed their goodneſs, without knowing the cauſe, and have imputed it to the long cultivating from the ſeeds ſaved in the ſame garden, believing it abſolutely neceſſary to procure ſeeds from a diſtant place frequently to preſerve them good: indeed, where a perſon can ſecurely depend on the care and ſkill of thoſe he procures the ſeeds from, it is a very good method to exchange ſeeds now and then; but there are ſo few who are exact in making choice of the fruits from which they ſave the ſeeds, or careful enough to do it themſelves, but often depend on others to clean the ſeed, that I ſhould adviſe every one to do it himſelf, which is the ſure way to have it good; for I have frequently been deceived myſelf, by depending on the fidelity and ſkill of others; nor could I procure any of theſe ſeeds from Cantaleupe which were good, until my much honoured friend the Chevalier Rathgeb ſent me plentifully of it from thence; though I had often been ſupplied with ſeeds by perſons who I thought could not be deceived in their choice, and who lived near the place of their growth.

Before I quit this head, I beg leave to caution all perſons againſt depending upon ſeeds which are brought from abroad, either by thoſe perſons who import them for ſale, or gentlemen who frequently bring or ſend over theſe ſeeds to their friends, for it ſeldom happens that any of theſe prove tolerable. I have been ſo often deceived by theſe myſelf, as to determine never to make trial of any of theſe ſeeds again, unleſs I receive them from a perſon who is ſkilful, and who eat of the fruit himſelf of which he ſaved the ſeeds; for in Italy, Spain, Portugal, and many parts of France, the gardeners are very careleſs in the choice of all their ſeeds, but of the Melons they are remarkably ſo; and as for thoſe which come from Conſtantinople, Aleppo, and other parts of Turkey, I have rarely ſeen one Melon produced from thoſe ſeeds which was tolerable.

The ſeeds of Melons ſhould not be ſown until they are three years old, nor would I chuſe to ſow them when they are more than ſix; for although they will grow at ten or twelve years old, yet the fruit which are produced from thoſe old ſeeds are ſeldom ſo thick fleſhed as thoſe which come from ſeeds which are freſher: and it is the ſame of light ſeeds, which ſwim upon water when they are taken out of the pulp, for I have made ſome trials of theſe, and have had them grow at three years old; but not one of the Melons produced on theſe plants was near ſo deep fleſhed, as thoſe which grew upon plants raiſed from heavy ſeeds taken out of the ſame fruit, though they grew in the ſame bed, and were cultivated exactly in the ſame manner; nor was their fleſh ſo firm, but rather inclining to be meally; therefore I would not adviſe the ſowing of theſe light ſeeds, nor thoſe which are very old.

Method of cultivation.—Having thus largely treated of the choice of the ſorts, and of the ſeeds, I ſhall next proceed to the method of cultivating them, in order to obtain plenty of good fruit: the method which I am going to preſcribe being very different from what has been conſtantly practiſed in England, will, I doubt not, be objected to by many; but it is what has been practiſed in all the good gardens in Holland and Germany, where the Cantaleupe Melon is produced in great plenty and perfection; and from ſeveral years experience, I have found this to be the only method in which theſe Melons can be cultivated with ſucceſs; and I am likewiſe convinced of its being the beſt way to obtain plenty of any other ſort of Melon.

It is common to hear many perſons valuing themſelves upon having two or three early Melons, which when brought to the table are not better than a Pumpkin, and theſe are procured at a great expence, and with much trouble; and in order to have them ripe a little earlier than they would naturally come, if ſuffered to grow to their full ſize, the ſtem upon which the fruit grows is commonly twiſted, to prevent the nouriſhment entering the fruit, whereby the growth is checked; then the fruit is cloſely covered with the mowings of graſs-plats, laid of a ſufficient depth to cauſe a fermentation, by which the fruit becomes coloured: but where this unnatural method is practiſed, the fruit has little fleſh, and that has neither moiſture, firmneſs, or flavour; ſo that after four months attendance, with a great expence of dung, &c. there may, perhaps, be three or four brace of Melons produced, which are fitter for the dunghill than the table. Therefore my advice is, never to attempt to have theſe fruit ripe earlier than the middle or latter end of june, which is generally ſoon enough for this climate; and from that time to the end of ſeptember, they may be had in plenty, if they are ſkilfully managed; and when the autumn has continued favourable, I have had them very good in the middle of october.

Sowing the ſeeds.—But in order to continue this fruit ſo long, the ſeeds muſt be ſown at two or three different ſeaſons: the firſt ſhould be ſown about the middle or end of february, if the ſeaſon proves forward; but if it is otherwiſe, it will be better to defer it till the end of that month; the future ſucceſs greatly depends on the raiſing the plants in ſtrength, which cannot be ſo well effected, if the weather ſhould prove ſo bad after the plants are come up, as that a ſufficient quantity of freſh air cannot be admitted to them, therefore it is not adviſeable to be too early in ſowing the ſeeds.

When the ſeaſon is come, theſe ſeeds may be ſown on the upper ſide of a Cucumber-bed, where there are any; and if there are none, a proper quantity of new horſe-dung muſt be provided, which muſt be thrown in a heap to ferment, and turned over, that it may acquire an equal heat, in the ſame manner as is directed for Cucumbers; and the plants muſt be raiſed and managed in the ſame manner as is directed for them, until they are planted where they are to remain for good, to which article the reader is deſired to turn, to avoid repetition.

The ſecond ſeaſon for ſowing theſe ſeeds is about the middle of march, and both theſe ſowings muſt be underſtood to be planted under frames; for thoſe which are deſigned for bell or hand-glaſſes, or to be covered with oil papers, ſhould not be ſown till about a week in april; for when theſe are ſown earlier, if the plants are properly managed, they will grow ſo long as to extend their ſhoots to the ſides of the glaſſes, before it will be ſafe to let them run out; for it often happens in this country, that we have ſharp morning froſts in the middle of may; ſo that if the ends of theſe Vines are then without the glaſſes, if they are not covered with mats to guard them againſt the froſt, they will be in danger of ſuffering greatly therefrom; and on the other hand, if the plants have ſpread ſo much as to fill the glaſſes, and not permitted to run out, they will be in equal danger of ſuffering by their confinement, from the heat of the ſun in the day time; therefore it is that I ſhould adviſe the putting the ſeed rather a little later into the hot-bed for the glaſſes, than thoſe which are to be covered with the oil papers. Nor will the times here mentioned be found too late, for I have put the ſeeds of Cantaleupe Melons into a hot-bed the third of may, which were not tranſplanted, but remained where they were ſown, and covered with oiled paper; and from this bed I cut a large crop of good fruit, which ripened about the latter end of auguſt, and continued till the end of october. This I only mention, to ſhew what has and may be done, though it muſt not be always depended on.

Preparing the beds or ridges.—But we next come to the making and preparing of the beds, or, as the gardeners term it, the ridges, into which the plants are to be put out to remain; theſe ſhould always be placed in a warm ſituation, where they may be defended from all cold and ſtrong winds, for the eaſt and north winds are generally very troubleſome in the ſpring of the year; ſo that if the place be expoſed to thoſe aſpects, it will be difficult to admit a proper ſhare of freſh air to the young plants; and if it is much expoſed to the ſouth-weſt winds, which often are very boiſterous in ſummer and autumn, theſe will turn up and diſplace the Vines, whereby they will ſuffer greatly; therefore the beſt poſition for theſe beds is where they are open to the ſouth, or a little inclined to the eaſt, and ſheltered at a diſtance by trees from the other points; this place ſhould be incloſed with a good Reed fence, which is better for this purpoſe than any other incloſure, becauſe the winds are deadened by the Reeds, and are not reverberated, as they are by walls, pales, and other cloſe fences; but in making the incloſure, it ſhould be extended to ſuch diſtance every way from the beds, as not to obſtruct the ſun's rays during any part of the day; this ſhould have a door wide enough to admit of wheelbarrows paſſing, to carry in dung, earth, &c. and it ſhould be kept locked, that no perſons ſhould be allowed to go in but thoſe who have buſineſs; for ignorant perſons, having often curioſity to look into the beds, open the glaſſes and let the cold air to the plants, and frequently leave the glaſſes in part open; or ſometimes when they are raiſed by the gardener to admit the freſh air, the tilts are thrown down, ſo that the air is excluded; all which are very injurious to the young plants, as is alſo the handling of the fruit after it is ſet; therefore none ſhould be admitted, but when the perſon who is intruſted with the care of them is there.

Preparation of the earth and dung.—The next thing is the preparation of the earth for theſe plants, in which the Dutch and German gardeners are very exact: the mixture which they generally prepare is of the following ſorts; of hazel loam, one third part; of the ſcouring of ditches or ponds a third part, and of very rotten dung a third part; theſe are mixed up at leaſt one, and often two years, before they make uſe of it, frequently turning it over, to incorporate their parts, and ſweeten it; but the compoſt in which I find theſe plants ſucceed beſt in England, is two-thirds of freſh gentle loam, and one-third of rotten neats dung; if theſe are mixed together one year before it is wanted, ſo as to have the benefit of a winter's froſt and ſummer's heat, obſerving to turn it over often, and never ſuffer weeds to grow upon it, this will be found equal to any other compoſt whatever.

As theſe plants ſucceed beſt when they are planted young, ſo before the plants appear there ſhould be a quantity of new dung thrown in a heap, proportionable to the number of lights intended, allowing about fifteen good wheelbarrows full to each light; this muſt be two or three times turned over, to prepare it (as is directed for Cucumbers) and in a fortnight it will be fit for uſe, at which time the trench muſt be dug to receive the dung, where the bed is intended; this muſt be made wider than the frames, and in length proportional to the number of frames intended. As to the depth, that muſt be according as the ſoil is dry or wet; but in a dry ground it ſhould not be leſs than a foot, or a foot and a half deep; for the lower theſe beds are made, the better they will ſucceed, where there is no danger of their ſuffering by wet. In the well laying and mixing of the dung, the ſame care muſt be taken as is directed for Cucumbers. When the bed is made, the frames ſhould be placed over it to keep out wet; but there ſhould be no earth laid upon it till after it has been three or four days made, and is found of a proper temperature of heat; for many times theſe beds will heat ſo violently when they are firſt made, as to burn the earth, if covered with it; and when this happens, it is much the beſt way to take this earth off again, for the plants will never thrive in it.

Planting and management of the beds.—As ſoon as the bed is found to be of a proper warmth, the earth ſhould be laid upon it, which at firſt need not be more than two inches thick, except in the middle of each light, where the plants are to be placed, where there muſt be a hill raiſed fifteen inches high or more, terminating in a flat cone; in two or three days after the earth is put on the bed, it will be of a proper temper to receive the plants; then in the evening you may tranſplant the plants, but always do it when there is little wind ſtirring: in taking up the plants, their roots ſhould be carefully raiſed with a trowel, ſo as to preſerve all their fibres; for if theſe are broken off, the plants do not ſoon recover this; or if they do, they are generally weaker, and ſeldom make ſo good Vines as thoſe which are more carefully removed; for theſe plants are more nice and tender in tranſplanting than thoſe of Cucumber, eſpecially the Cantaleupe Melon; which, if it is not planted out ſoon after the third (or what the gardeners call the rough) leaf is put out, they are long recovering their vigour; ſo that when it happens that the beds cannot be ready for them in time, it will be a good method to put each plant into a ſmall pot while they are young, and theſe may be plunged into the hot-bed where they were raiſed, or into the Cucumber-bed where there is room, ſo that they may be brought forward; and when the bed is ready, theſe may be turned out of the pots, with the whole ball of earth to their roots, whereby they will receive no check in removing: and this latter method is what I ſhould prefer to any other for the Cantaleupe, becauſe there ſhould never be more than one plant left to grow in each light; therefore in this method there will be no neceſſity of planting more, as there will be no danger of their ſucceeding; whereas in the common way, moſt people plant two or more plants in each light, for fear ſome ſhould miſcarry. When the plants are placed on the top of the hills, they ſhould be gently watered, which ſhould be repeated once or twice after till the plants have taken good root, after which they ſeldom require more; for when they receive too much wet, they often canker at the root, and when that happens they never produce good fruit. When the plants have eſtabliſhed themſelves well in the new beds, there ſhould be a greater quantity of earth laid on the bed, beginning round the hills where the plants grow, that their roots may have room to ſtrike out; and as the earth is put in from time to time, it muſt be trodden or preſſed down as cloſe as poſſible; and it ſhould be raiſed at leaſt a foot and a half thick upon the dung all over the bed, obſerving alſo to raiſe the frames, that the glaſſes may not be too near the plants, leſt the ſun ſhould ſcorch them.

When the plants have got four leaves, the top of the plants ſhould be pinched off with the finger and thumb, but not bruiſed or cut with a knife, becauſe in either of theſe caſes the wound will not ſo ſoon heal over: this pinching is to cauſe the plants to put out lateral branches, for theſe are what will produce the fruit; therefore, when there are two or more of theſe lateral ſhoots produced, they muſt alſo be pinched, to force out more; and this muſt be practiſed often, that there may be a ſupply of what the gardeners call runners, to cover the bed. The management of theſe beds muſt be nearly the ſame as is directed for Cucumbers, therefore I need not repeat it here; but ſhall only obſerve, that the Melons require a greater ſhare of air than Cucumbers, and very little water; and when it is given to them, it ſhould be at a diſtance from their ſtems.

If the plants have ſucceeded well, they will ſpread over the bed, and reach to the frames, in about five or ſix weeks, at which time the alleys between the beds ſhould be dug out; or where there is but one bed, there ſhould be a trench made on each ſide, of about four feet wide, as low as the bottom of the bed, and hot dung wheeled in, to raiſe a lining to the ſame height as the dung of the bed, which ſhould be trodden down cloſe, and afterward covered with the ſame earth as was laid upon the bed, to the thickneſs of a foot and a half or more, treading it down as cloſe as poſſible; this will add to the width of the bed, ſo much as to make it in the whole twelve feet broad, which is abſolutely neceſſary, for the roots of the plants will extend themſelves quite through it; and it is for want of this precaution, that it is common to ſee the Vines of Melons decay, before the fruit is well grown; for where there is no addition made to the width of the bed, the roots will have reached the ſides of the beds by the time that the fruit appears, and having no more room to extend themſelves, their extremities are dried by the ſun and air, which is ſoon diſcovered by the plants hanging their leaves in the heat of the day, and that is ſoon attended with a decay of many of thoſe leaves which are near the ſtem, and the plants from that time gradually languiſh, ſo that the fruit cannot be ſupplied with nouriſhment; but when ripe, will be found to have little fleſh, and that meally and ill flavoured; whereas thoſe plants which have ſufficient breadth for their roots to run, and the earth laid of a proper depth, and cloſely trod down, will remain in vigour until the froſt deſtroys them, ſo that I have had a ſecond crop of fruit on them, which have ſometimes ripened well; but all the firſt were excellent, and of a larger ſize than theſe ſorts uſually grow: the leaves of theſe plants were very large, and of a ſtrong green, ſo that they were in the utmoſt vigour; whereas in moſt places where the Cantaleupe Melons have been raiſed in England, the beds have been no wider than they were firſt made, and perhaps not more than three inches thickneſs of earth upon them, ſo that the plants have decayed many times without producing a ſingle fruit; and from thence people have imagined, that this ſort of Melon was too tender for this climate, when their ill ſucceſs was entirely owing to their not underſtanding their culture.

There is alſo another advantage attending this method of widening the beds, as above directed, which is that of adding a freſh warmth to the beds, by the hot dung, which is buried on each ſide, which will cauſe the dung in the bed to renew its heat; and as the plants will by this time ſhew their fruit, this additional heat will be of great ſervice in ſetting the fruit, eſpecially if the ſeaſon ſhould prove cold, as it often happens in this country in the month of may. When the beds are made up in the manner here directed, and the Vines have extended ſo far as to fill the frames, and want more room, the frames ſhould be raiſed up with bricks about three inches high, to admit the ſhoots of the Vines to run from under them; for if the plants are ſtrong, they will run ſix or ſeven feet each way from the ſtems; for which reaſon I caution every one to allow them room, and to put but one plant in each light; for when the Vines are crowded, the fruit ſeldom will ſet well, but will drop off when they are as large as an egg; therefore the frames which are deſigned for Melons ſhould not be made ſmall, but rather ſix feet wide; for the wider theſe are, the better will the plants thrive, and produce a greater plenty of fruit.

Pruning and management of the plants.—There is no part of gardening in which the practitioners of this art differ more than in the pruning and managing of theſe plants: nor are there any rules laid down in the ſeveral books in which the culture of Melons has been treated of, by which any perſon can be inſtructed; for there is ſuch inconſiſtency in all their directions, and what is worſe, the greateſt part of them are ſo abſurd, that whoever follows them can never hope to ſucceed; therefore I ſhall, in as few words as poſſible, give ſuch plain directions as I hope will be ſufficient to inſtruct any perſon who is the leaſt converſant in theſe things.

I have before adviſed the pinching off the ends of the plants as ſoon as they have a joint, in order to get lateral ſhoots, which are by the gardeners called runners; and when theſe ſhoots have two or three joints, to pinch off their tops to force out more runners, becauſe it is from theſe that the fruit is to be produced; but after a ſufficient number are put out, they ſhould not be ſtopped again, but wait for the appearance of the fruit, which will ſoon come out in plenty; at which time the Vines ſhould be carefully looked over three times a week, to obſerve the fruit, and make choice of one upon each runner, which is ſituated neareſt the ſtem, having the largeſt foot-ſtalk, and that appears to be the ſtrongeſt fruit, and then pinch off all the other fruit which may appear on the ſame runner; alſo pinch off the end of the runner at the third joint above the fruit, and if the runner is gently pinched at the next joint above the fruit, it will ſtop the ſap, and ſet the fruit. There is alſo another method practiſed by ſome gardeners to ſet this fruit, which is the taking off ſome of the male-flowers, whoſe farina are juſt ripe and fit for the purpoſe, laying them over the female flowers, which are ſituated on the crown of the young fruit, and with their nails gently ſtrike the male flowers to ſhake the farina into the female flowers, whereby they are impregnated, and the fruit ſoon after will ſwell, and ſhew viſible ſigns of their being perfectly ſet; where the plants are under frames, and the wind excluded from them, which is neceſſary to convey the farina from the male to the female flowers, this practice may be very neceſſary. The taking off all the other fruit will prevent the nouriſhment being drawn away from the fruit intended to grow, which, if they were all left on the plant, could not be ſupplied with ſufficient nouriſhment; ſo that when they come to be as large as the end of a man's thumb, they frequently drop off, and ſcarce one of them ſets, which will be prevented by the method before directed: but there are ſome perſons, who are ſo covetous of having a number of fruit, as not to ſuffer any to be taken off, whereby they generally fail in their expectation. My allowing but one fruit to be left upon each runner is, becauſe if half theſe ſtand there will be full as many fruit as the plant can nouriſh; for if there are more than eight upon one plant, the fruit will be ſmall, and not ſo well nouriſhed: indeed I have ſometimes ſeen fifteen or twenty Melons upon one plant, but theſe have generally been of the ſmaller kinds, which do not require ſo much nouriſhment as the Cantaleupes, whoſe ſkins are of a thick ſubſtance; ſo that where a greater number are left of them than the plants can well ſupply, their fleſh will be remarkably thin.

As I before adviſed the ſtopping or pinching off the runners three joints above the fruit, ſo by this there will be freſh runners produced a little below the places where the others were pinched; therefore it is that I adviſe the careful looking over the Vines ſo often, to ſtop theſe new runners ſoon after they come out, as alſo to pull off the young fruit which will appear; and this muſt be repeated as often as is found neceſſary, which will be until thoſe intended to ſtand are grown ſo large as to draw all the nouriſhment which the plants can ſupply, for then the plants will begin to abate of their vigour. Theſe few directions, if properly made uſe of, is all the pruning which is neceſſary to be given them; but at the ſame time when this is practiſed, it may be neceſſary to give ſome water to the plants, but at a diſtance from their ſtems, which will be of ſervice to ſet the fruit, and cauſe it to ſwell, but this muſt be done with great caution.

The glaſſes of the hot-bed ſhould alſo be raiſed high, to admit a large ſhare of air to the plants, otherwiſe the fruit will not ſet; and if the ſeaſon ſhould prove very warm, the glaſſes may be frequently drawn off, eſpecially in an evening, to receive the dews, provided there is but little wind ſtirring; but the glaſſes ſhould not remain off the whole night, leſt the cold ſhould prove too great; but in warm weather, the glaſſes may be kept off from ten in the morning till evening.

When the plants have extended themſelves from under the frames, if the weather ſhould alter to cold, it will be neceſſary to cover their extremities every night with mats; for if theſe ſhoots are injured, it will retard the growth of the fruit, and often proves very injurious to the plants: and now what water is given to the plants, ſhould be in the alleys between the beds; for as the roots of the Vines will by this time have extended themſelves through the alleys, ſo when the ground there is well moiſtened, the plants will receive the benefit of it; and by this method, the ſtems of the plants will be preſerved dry, whereby they will continue ſound; but theſe waterings ſhould not be repeated oftener than once a week in very dry warm weather, and be ſure to give as much air as poſſible to the plants when the ſeaſon is warm.

Culture under hand or bell-glaſſes.—Having given full inſtructions for the management of thoſe Melons which are raiſed under frames, I ſhall next proceed to treat of thoſe which are raiſed under bell or hand-glaſſes. The plants for theſe muſt be raiſed in the ſame manner as has been already directed; and about the latter end of april, if the ſeaſon proves forward, will be a good time to make the beds; therefore a ſufficient quantity of hot dung ſhould be provided, in proportion to the intended number of glaſſes, allowing ſix or eight good wheelbarrows of dung to each glaſs. Where there is but one bed, which is propoſed to be extended in length, the trench ſhould be dug out four feet and a half wide, and the length according to the number of glaſſes, which ſhould not be placed nearer than four feet; for when the plants are too near each other, the Vines will intermix, and fill the bed ſo cloſely as to prevent the fruit from ſetting: in digging the trench, it ſhould be ſo ſituated as to allow for the widening of the bed three or four feet on each ſide; the depth muſt be according as the ſoil is dry or wet; but, as was before obſerved, if the ſoil is ſo dry as that there is no danger of the beds being hurt by the wet, the lower they are made in the ground the better: in the making of the beds, the ſame regard muſt be had to the well mixing and laying of the dung as was before directed; and after the dung is laid, there ſhould be a hill of earth raiſed, where each plant is to ſtand, one foot and a half high; the other part of the bed need not as yet be covered more than four inches thick, which will be ſufficient to keep the warmth of the dung from evaporating; then the glaſſes ſhould be placed over the hills, and ſet down cloſe, in order to warm the earth of the hills to receive the plants; and if the beds work kindly, they will be in a proper temperature to receive the plants in two or three days after making; then the plants ſhould be removed, in the ſame manner as was before directed; and if they are in pots, ſo that there will be no danger of their growing, there ſhould but one plant be put under each glaſs; and if they are not in pots, there ſhould be two, one of which may be afterward taken away, if they both grow. Theſe plants muſt be watered at firſt planting, to ſettle the earth to their roots, and ſhaded every day until they have taken new root; and if the nights prove cold, it will be proper to cover the glaſſes with mats, to preſerve the warmth of the bed.

Where there are ſeveral of the beds intended, they ſhould be placed at eight feet diſtance from each other, that there may be a proper ſpace left between them, to be afterward filled up, for the root of the Vines to have room for extending themſelves, for the reaſons before given.

When the plants have taken good root in the beds, their tops muſt be pinched off; and their pruning, &c. muſt, from time to time, be the ſame as for thoſe under the frames. In the day time, when the weather is warm, the glaſſes ſhould be raiſed on the oppoſite ſide to the wind, to admit freſh air to the plants; for where this is not obſerved, they will draw up weak and ſickly, therefore all poſſible care ſhould be taken to prevent this; for if the runners have not proper ſtrength, they can never ſupply the fruit with nouriſhment.

When the plants are grown ſo long as to reach the ſides of the glaſſes, if the weather proves favourable, the glaſſes muſt be ſet on three bricks, ſo as to raiſe them about two inches from the ſurface of the beds, to give room for the Vines to run out from under them; but when this is done, the beds ſhould be covered all over with earth to the depth of one foot and a half, and trod down as cloſe as poſſible; and if the nights ſhould prove cold, there ſhould be a covering of mats put over the beds, to prevent the cold from injuring the tender ſhoots of the Vines; but as the Vines of the Cantaleupe Melons are impatient of wet, it will be neceſſary to arch the beds over with hoops to ſupport the mats, that they may be ready for covering at all times when they require it; which is the only ſure method to have theſe Melons ſucceed in England, where the weather is ſo very uncertain and variable; for I have had ſome beds of theſe Melons in as fine order under theſe glaſſes as could be deſired, which were totally deſtroyed by one day's heavy rain in June.

After the thickneſs of earth is laid upon the beds, if the weather ſhould prove cold, it will be adviſeable to dig trenches on each ſide of the beds, into which you ſhould lay a ſufficient quantity of hot dung, to make it of the ſame thickneſs with the bed, after the manner before directed for the frames; or if there is a ſufficient quantity of hot dung ready, the whole ſpace between the beds may be dug out and filled up with the dung, laying thereon the earth a foot and a half deep, treading it down cloſe; this new dung will add a freſh warmth to the beds, and cauſe the plants to ſhew fruit ſoon after.

The watering of theſe plants muſt be done with great caution, and not given to their ſtems; the pinching off the runners muſt alſo be duly attended to, as alſo the pulling off all ſuperfluous fruit, to encourage thoſe which are deſigned to remain: and in ſhort, every thing before directed for thoſe under frames, muſt likewiſe be obſerved for theſe; and the further care is, to cover them in all hard rains and cold nights, with mats, which, if performed with care, there will be little danger of their miſcarrying, and theſe Vines will remain vigorous until the cold in autumn deſtroys them.

Raiſing under paper frames.—There have been many perſons, who of late years have raiſed their Melons under oiled paper, and in many places they have ſucceeded well; but where this is practiſed, there muſt be great care taken not to keep theſe coverings too cloſe over them; for where that is done, the Vines will draw very weak, and rarely ſet their fruit in any plenty; therefore where theſe coverings are propoſed to be uſed, I ſhould adviſe the bringing up of the plants under hand or bell-glaſſes, in the manner before directed, until they are grown far enough to be let out from under the glaſſes; and then, inſtead of the covering with mats, to put over the oiled paper; and if this covering is prudently managed, it will be the beſt that can be uſed. The beſt ſort of paper for this purpoſe is that which is ſtrong, and not of too dark a colour; and it ſhould be done over with linſeed oil, which will dry ſoon. There ſhould be a proportionable number of ſheets of this paper paſted together, as will ſpread to the dimenſions of the frame to which it is faſtened; and if this is fixed to the frame before the oil is rubbed over it, ſo much the better; but this ſhould be done ſo long before they are uſed, as that the oil may be thoroughly dry, and the ſtench gone off, otherwiſe it will deſtroy the plants.

There are ſome perſons who make theſe frames of broad hoops, in imitation of the covers of waggons; but as theſe are cumberſome to move, and there are no conveniencies for admitting air to the plants, but by raiſing the whole frame on one ſide, I prefer thoſe made of pantile laths, framed like the ridge of a houſe; and each ſlope having hinges, may be raiſed at pleaſure to admit the air to the plants.

Management after the fruit is ſet.—The further management of the Melons, after their fruit is ſet, is to keep pulling off all the ſuperfluous fruit, and to pinch off all weak runners, which may draw away part of the nouriſhment from the fruit; as alſo to turn the fruit gently twice a week, that each ſide may have equal benefit of the ſun and air; for when they are ſuffered to lie with the ſame ſide conſtantly to the ground, that ſide will become of a pale or whitiſh colour, as if it were blanched, for want of theſe advantages. The plants will require a little water in very dry weather, but this ſhould be given them in the alleys at a diſtance from the ſtems of the plants, and not oftener than once in a week or ten days, at which time the ground ſhould be well ſoaked in the alleys. This will encourage the growth of the fruit, and cauſe the fleſh to be thick; but the great caution which is neceſſary to be obſerved, is not to over-water the plants, which is certain injury to them: alſo be ſure to give as much free air as poſſible, at all times, when the weather will permit, for this is abſolutely neceſſary to render the fruit good.

Time of cutting.—When the fruit is fully grown, they muſt be duly watched to cut them at a proper time; for if they are left a few hours too long upon the Vines, they will loſe much of their delicacy, therefore they ſhould be looked over at leaſt twice every day; and if thoſe fruit which are intended for the table, are cut early in the morning, before the ſun has warmed them, they will be much better flavoured; but if any ſhould require to be cut afterward, they ſhould be put into cold ſpring water, or ice, to cool them, before they are brought to the table: and thoſe cut in the morning, ſhould be kept in the cooleſt place till they are ſerved up to table. The ſign of this fruit's maturity is, that of its beginning to crack near the foot-ſtalk, and its beginning to ſmell, which never fail; for as theſe Cantaleupe Melons ſeldom change their colour until they are too ripe, that ſhould never be waited for. The directions here given for the management of the Cantaleupe Melons, will be found equally good for all the other ſorts, as I have fully experienced; for in the common method of managing them, where the earth is laid but three or four inches thick, the plants are very apt to decay before the fruit is ripe; for their roots ſoon reach the dung, and are extended to the ſides of the bed, where their tender fibres are expoſed to the air and ſun, which cauſe the leaves of the plants to hang down in the heat of the day, ſo it is neceſſary to ſhade them with mats, to prevent their decay; and this alſo occaſions the watering of the plants often to keep them alive, which is alſo prejudicial to their roots; whereas when the beds are made of a proper width, and earthed of a ſufficient thickneſs, the plants will bear the ſtrongeſt heat of the ſun in this climate, without ſhewing the leaſt want of moiſture, or their leaves drooping, and they will continue in health till the autumn cold deſtroys them.

In ſaving of the ſeeds I repeat here, that only ſuch ſhould be regarded which are taken from the firmeſt fruit, and thoſe which have the higheſt flavour; and if theſe are taken out with the pulp entire, without diſplacing the ſeeds, and ſuffered to remain in the pulp two or three days before it is waſhed out, the better; and then to preſerve only the heavy ſeeds, which ſink in water.

[*Additional directions for the culture and management of Melons.*

1. If you are obliged to uſe new ſeed, hang it up in a paper or phial in a dry room near the fire all winter, or in a window expoſed to the ſun, or carry it in your pocket three or four weeks. If your ſeed be too old, ſteep it two or three hours in milk lukewarm, immediately before you ſow it.

2. A ſmall family cannot have leſs than one three-light frame for the early crop, and three-hand or bell-glaſſes, or three holes under oiled paper, for the late crop; which will produce only from thirty to forty Melons. A middling family will require double this quantity. And a large family ſhould have four three-light frames, and twelve glaſſes or holes under oiled paper, to inſure a tolerable ſupply of fruit during the ſeaſon.

3. In the nurſery bed the ſeedling plants ſhould be gradually earthed up as they riſe in height. When the two or three firſt rough leaves are fully expanded, and another is forming in the centre, appearing like a bud, this latter ſhould be pinched off cloſe to the ſecond or third leaf, to procure lateral ſhoots or runners: and when theſe firſt runners appear, the plants are ready for tranſplanting into the fruiting hot-bed. This will be in five or ſix weeks from the time of ſowing.

4. Many perſons prefer making the hot-beds entirely on the ſurface, for the ſake of lining them more completely with hot dung, to renew the heat when wanted. The height of the bed ſhould be three feet and a half, or four feet, the back or north ſide being raiſed three or four inches higher. The

frames being put on to keep out the wet, and draw up the heat, the glaſſes ſhould be kept up behind, that the ſteam may paſs away; and the great heat will not be ſufficiently abated for moulding the bed till a week at leaſt, or perhaps ten or fifteen days, according to the ſubſtance of the bed.

5. A buſhel of mould is the proper quantity for forming the hill in which the young fruiting plant is to be ſet; the height may be about fifteen inches: ſo that the plant may at the ſame time be near the glaſs, to enjoy the full benefit of the ſun, and have a ſufficient depth of earth for the roots to ſpread in. Having ſpread a layer of earth three inches thick over the other parts of the bed to keep down the ſteam of the dung, cloſe the lights, and when the earth is warm put in the plants. This will be in a day or two. If then the mould appear to be too dry, give a little water towards the outſide, without wetting the plants much. Shut the lights to draw up the heat about the roots, but raiſe them again afterwards to let out the ſteam.

6. Freſh air ſhould be admitted at every opportunity in calm warm weather, by ſetting up the lights behind from half an inch to two, three and four inches high, according to the quantity of ſteam in the bed, and the temperature of the outward air. At firſt, this muſt ſometimes be done in the evening, when the ſteam is very abundant. Some perſons uſe a contrivance of leaden or tin bent pipes, communicating with the open air, and paſſing through the body of dung, to introduce warm air into the frames, when the weather will not admit of the lights being opened. At night the glaſſes muſt be covered with a ſingle or double mat, according to the ſeaſon, being careful that the mats do not hang over the ſides of the frame and bed, which by drawing up the ſteam and excluding the air too much, will cauſe the plants to become weak and yellow. Water occaſionally when the earth is dry: but all agree that Melons can hardly have too little water, that the Vines ſhould never be wetted at firſt, and that little or no water ſhould be given when the fruit is nearly full grown. If the earth be loamy, preſſed down cloſe, and not leſs than twelve or fifteen inches deep, the plants, after two or three waterings to ſettle their roots, will require very little more water afterwards: but if the earth be light, and of a leſs depth, occaſional waterings will be requiſite in warm weather; obſerving that the water be ſoft and not cold, and that it be not given while the fruit is ſetting, till it is of the ſize of a large walnut.

7. The firſt danger to the plants will be from over-heating. In this caſe, remove ſome of the earth from the lower part of the hill, and if it be burned, put ſome freſh earth in its place; and when the burning ſubſides, replace the removed mould on the hill.

This danger being over in a few days or a week, the heat muſt then be retained as much as poſſible, by laying dry long litter round the ſides of the bed. And when the heat declines conſiderably, it muſt be revived by a ſubſtantial lining of hot dung as above directed: at the ſame time laying on freſh earth to keep the rancid ſteam of the hot dung from injuring the plants. As the fibres of the plants advance, freſh warm mould muſt be added gradually round the hills, till it is within an inch of the ſame height with them.

8. When the vines have advanced to ſome length, diſpoſe them regularly, and ſpread ſome dry clean reeds over the beds thinly, for the vines to run upon; this is better than covering the whole bed cloſely with flat tiles, as is practiſed by ſome. As the fruit ſets, lay a piece of tile under each, and as it advances towards maturity, raiſe it on a brick to enjoy more of the ſun and air, and turn it every three days.

9. The ſize and flavour of the fruit will depend much upon keeping up what is called a bottom heat, which is done by occaſional linings of dung, ſo late as the end of april, and the beginning and middle of may. The plants ſhould be occaſionally ſhaded in very hot days, when there is danger of their leaves being ſcorched by the ſun. When the leaves preſs againſt the glaſſes, the frame may be raiſed at bottom three inches; and if they are much crowded, they may be thinned in proportion, ſo as to admit the fruit to the full benefit of the ſun and air. When the fruit is ſet and advanced, if the vines are over-crowded, ſmall runners and luxuriant ſhoots may be cut off quite cloſe, to encourage the free growth, and increaſe the ſize of the Melons. In june the vines filling the frames, may be confined by pruning, or may be ſuffered to run out on the top of the lining to produce ſome late fruit, by raiſing up the frame for that purpoſe.

10. The Melon will proſper in any rich pliable kitchen-garden earth, prepared ſome months in a heap; but it does beſt in a fine mellow loam, ſuch as Mr. Miller calls hazel loam, from the ſurface of a paſture or common, with one third of rotten neat's dung, or old hot-beds. Others prefer a ſtronger ſoil, compoſed of neat's dung, virgin earth, and yellow fat marl, in equal proportions. Others again recommend the earth and dung to be reduced to a proper degree of lightneſs by coal aſhes ſifted fine; and the compoſt to be frequently wetted with fat pot-liquor and ſoap-ſuds; then laid in a ridge to dry, and about Chriſtmas mixed with ſome quick lime in powder. Some direct the compoſt to be riddled very fine; whilſt others forbid it to be ſifted or ſcreened, and will have it only broken with the ſpade.

11. Some perſons are very nice about their water. Rain water is certainly to be preferred, and if hard water only can be had, it ſhould ſtand in the air ſome time in an open veſſel. It is a common practice to ſet bottles of water into the frames a day before it is to be uſed, to water the young plants, which require no great quantity. Some medicate the water with ſheep's-dung, or good rotten horſe-dung, and wood aſhes, and put a lump of ſal-ammoniac into the bottle when they water the ſeedling plants. But of ſuch niceties there is no end.

12. Cut the fruit in a morning, before the ſun ſhines hot upon it, with all its ſtalk to it, and lay it in a dry, cool, airy place, till it is wanted for table. If it is to be ſent to a diſtance, cut it two or three days before it is perfectly ripe.

13. Bark hot-beds are ſometimes uſed in the culture of Melons for the fruiting beds, and are eſteemed for this purpoſe as well as others, on account of their regular and durable heat.

The expenſe, indeed, of theſe is ſomewhat greater, but the trouble is leſs, and fruit may be produced to greater advantage, for no lining or very little will be neceſſary, nor is ſo much danger to be apprehended from ſteaming or over-heating as in dung hot-beds. Theſe bark-beds muſt be made either in a brick pit, or in a frame of ſtrong oak or barge anking.

14. Melons may be raiſed with ſucceſs from cuttings, and fruit may be obtained this way rather ſooner than by plants raiſed from ſeed.]

8. This, with ſome of the other ſorts, is rarely cultivated, except in botanic gardens, for the ſake of variety; the plants being tender, and the fruit very indifferent. This rambles very far, and therefore requires much room.

9. THE CUCUMBER.

Culture of early Cucumbers.—Thoſe perſons who are very deſirous to be early with their Cucumbers, generally ſow their ſeeds before Chriſtmas, but the generality of gardeners commonly put their ſeeds into the hot-bed about Chriſtmas. Where perſons have the conveniency of a ſtove for raiſing theſe plants, it is attended with leſs trouble than a common hot-bed, and is a much ſurer method, becauſe the plants will have a much greater ſhare of air, which will alſo be leſs mixed with damp or rancid vapours; for by the heat of the fires theſe will be diſſipated, and the temperature of the air is kept more equal than can be done with all poſſible care in a hot-bed, at a ſeaſon when we enjoy but little ſun; therefore where there is this convenience, the ſeeds ſhould be ſown in ſmall pots, filled with light dry earth, and plunged into the tan-bed, in the warmeſt part of the ſtove. The pots with earth ſhould be plunged three or four days before the ſeeds are ſown, that the earth may be properly warmed to receive them; the ſeed ſhould be at leaſt three or four years old, but if it is more, provided it will grow, it will be the better. If the ſeeds are good, the plants will begin to appear in about a week or nine days, at which time there muſt be as many halfpenny pots filled with dry light earth as there are plants deſigned for planting, always allowing for loſs; ſo that where twenty-four plants are wanting, there ſhould be thirty raiſed; theſe pots ſhould be plunged into the bark-bed, that the earth may be warmed to receive the plants, which ſhould be pricked into theſe pots as ſoon as the two firſt leaves are raiſed above ground; into each of theſe pots may be two plants pricked, but when they have taken root, and are ſafe, the worſt ſhould be drawn out, being careful not to diſturb the roots of thoſe which are left. In the management of theſe plants, there muſt be great care taken not to give them too much water; and it will be very proper to put the water into the ſtove ſome hours before it is uſed, that the cold may be taken off; but there muſt be caution uſed not to make it too warm, for that will deſtroy the plants; they muſt alſo be guarded from the moiſture which frequently drops from the glaſſes of the ſtove, which is very deſtructive to theſe plants while young. As theſe plants muſt not be kept too long in the ſtove leſt they become troubleſome to the other plants, there ſhould be a proper quantity of new dung prepared for making a hot-bed to receive them; this muſt be in proportion to the quantity of holes or plants intended: for a middling family ſix or nine lights of Cucumbers will be ſufficient, and for a large one double the quantity; but the beds where they are deſigned to remain need not be made ſo ſoon, but rather a ſmall bed of one light, in which the plants may be trained up till they have acquired a greater ſhare of ſtrength; and for this bed one good cart load of dung will be ſufficient. This ſhould be new, and not too full of ſtraw, nor ſhould it want a proper portion; it ſhould be well mixed together and thrown in a heap, mixing ſome ſea-coal aſhes with it; after it has lain in a heap a few days, and has fermented, it ſhould be carefully turned over and mixed, laying it up again in a heap; and if there is a great ſhare of ſtraw in it, there may be a neceſſity for turning it over a third time, after having laid a few days: this will rot the ſtraw and mix it thoroughly with the dung, ſo there will be leſs danger of its burning afterward when the bed is made, which ſhould be done when the dung is in proper order. The place where the hot-bed is made ſhould be well ſheltered by Reed hedges, and the ground ſhould be dry; then there ſhould be a trench made in the ground, of a proper length and breadth, and a foot deep at leaſt; into which the dung ſhould be wheeled and carefully ſtirred up and mixed, ſo that no part of it ſhould be left unſeparated, for where there is not this care taken, the bed will ſettle unequally; there ſhould alſo be great care taken to beat the dung down cloſe in every part of the bed alike. When the bed is made, the frame and glaſſes ſhould be put upon it to keep out the rain, but there ſhould be no earth laid upon the dung till two or three days after, that the ſteam of the dung may have time to evaporate. If there ſhould be any danger of the bed burning, it will be proper to lay ſome ſhort old dung, or ſome neats dung, over the top of the hot dung about two inches thick, which will keep down the heat, and prevent the earth from being burnt; after this there ſhould be a ſufficient number of three farthing pots placed upon the bed, filled with light dry earth, and all the interſtices between them filled up with any common earth. In two or three days the earth in theſe pots will be of a proper temperature of warmth to receive the plants, which ſhould be then turned out of the halfpenny pots, preſerving the ball of earth to their roots, and planted into the three farthing pots, filling up the pots with good earth; then a little water ſhould be given them to ſettle the earth about their roots, being careful not to give them too much wet; and as theſe will have ſuch large balls of earth to their roots, they will not feel their removal, therefore will not require ſhading from the ſun; but the glaſſes ſhould be raiſed up a little on the contrary ſide from the wind, to let the ſteam of the bed paſs off; and they ſhould alſo be frequently turned in the day-time, that the wet occaſioned by the ſteam of the dung may be dried, otherwiſe the moiſture will fall on the plants, which will be very injurious to them. If the bed ſhould heat too violently, ſo as to endanger ſcalding the roots of the plants, the pots may be raiſed ſo as to allow of a little hollow at their bottoms, which will effectually prevent injury thereby; and when the heat declines, the pots may be ſettled down again. The glaſſes of the hot-bed ſhould be well covered with mats every night, to keep the bed in a proper temperature of heat, and great care muſt be taken to admit freſh air every day to the plants; but this ſhould be done with caution, ſo as to guard againſt the cold winds which uſually blow at that ſeaſon; ſo that a mat or canvaſs ſhould be hung over the opening made by raiſing of the glaſſes, to prevent the cold air from ruſhing in too violently, and the glaſſes ſhould always be raiſed on that ſide which is contrary to the wind. The plants will alſo require to be frequently watered, but it muſt be cautiouſly given them at this ſeaſon, and the water ſhould not be cold, but either placed in a ſtove, or put into a warm heap of dung, to take off the chill from it before it is uſed.

If the weather ſhould prove bad, and the heat of the bed decline, there ſhould be ſome hot dung laid round the ſides of the bed to renew the heat, which muſt not be ſuffered to fail; for as the plants have been tenderly brought up, they muſt not ſuffer from cold, for that will ſoon deſtroy them.

In this bed the plants may remain about three weeks or a month, in which time, if they have been properly managed, they will have obtained ſufficient ſtrength to put out for good; therefore a proper quantity of dung ſhould have been mixed and turned ready for making the beds. The uſual quantity allowed at this ſeaſon, is one good cart load to each light: this ſhould be well mixed and turned over in the manner before directed; then a trench ſhould be dug in the ground the length and width of the intended bed, into which the dung ſhould be wheeled, and properly worked according to the above directions, and ſome old dung or neats dung ſpread over the top. The frames and glaſſes ſhould then be put on the bed, which ſhould be raiſed every day to let the ſteam of the dung paſs off, and in about three days the bed will be in a proper temperature of heat to receive the plants; at which time the dung ſhould be covered over with dry earth about four inches thick, and in the middle of the bed it ſhould be three or four inches thicker; this ſhould be laid upon the dung at leaſt twenty-four hours before the plants are removed into the bed, that the earth may be properly warmed; then the plants ſhould be carefully ſhaken out of the pots, preſerving all the earth to their roots, and placed on the top of the earth in the middle of the bed. Two, or at moſt three of theſe plants will be ſufficient for each light, and theſe ſhould be placed at about ſeven or eight inches aſunder, not all the roots together, as is too often practiſed. When the plants are thus ſituated in the bed, the earth which was laid ſo much thicker in the middle of the bed, ſhould be drawn up round the ball which remained to the roots of the plants, into which their roots will ſoon ſtrike; there ſhould always be a magazine of good earth laid under cover to keep it dry, for the earthing of theſe beds; for if it is taken up wet, it will chill the beds, and alſo occaſion great damps therein, therefore it is quite neceſſary to have a ſufficient quantity of earth prepared long before it is uſed. When the plants are thus ſettled, they muſt have proper air and water, according as they may require, being careful not to admit too much cold air, or give too much water; the glaſſes ſhould alſo be well covered with mats every night, to keep up the warmth of the bed, and ſome freſh earth ſhould be put into the bed at different times, which ſhould be laid at ſome diſtance from the roots of the plants till it is warmed, and then ſhould be drawn up round the heap of the earth in which the plants grow, to increaſe the depth; this ſhould be raiſed to the full height of the former ball, that the roots of the plants may more eaſily ſtrike into it: by this method of ſupplying the earth, the whole ſurface of the beds will be covered nine or ten inches with earth, which will be of great ſervice to the roots of the plants; for where the earth is very ſhallow, the leaves of the plants will always hang in the heat of the day, unleſs they are ſhaded, and the plants will require more water to keep them alive, than is proper to give them; therefore it will be found much the better way to allow a proper depth of earth to the beds: but the reaſon of not laying the quantity of earth on the bed when it is firſt made, is, that the dung ſhould not be too much chilled by it, or that the earth may not be burned, which might be endangered thereby, were the whole thickneſs to be laid on at once; beſides, by thus gradually applying the earth, it will be freſh, and much better for the roots of the plants, than that which has been long upon the bed, and has been too much moiſtened by the ſteam ariſing from the dung.

If the heat of the bed ſhould decline, there ſhould be ſome hot dung laid round the ſide of the bed to renew the heat; for if that ſhould fail at the time when the fruit appears, they will fall off and periſh, therefore this muſt be carefully regarded; and when the plants have put out ſide branches, which the gardeners call runners, they ſhould be properly placed, and pegged down with ſmall forked ſticks to prevent their riſing up to the glaſſes, and alſo from croſſing and entangling with each other; for when they are properly directed at firſt, there will be no neceſſity for twiſting and tumbling the plants afterwards, which is always hurtful to them.

When the earth of the bed is laid the full thickneſs, it will be neceſſary to raiſe the frames, otherwiſe the glaſſes will be too cloſe to the plants; but when this is done, there muſt be care taken to ſtop the earth very cloſe round the ſide of the frame, to prevent the cold air from entering under them. The watering the plants, and admitting freſh air to them, muſt be diligently attended to, otherwiſe the plants will be ſoon deſtroyed; for a little neglect either of admitting air, or letting in too much, or of over watering, or ſtarving the plants, will very ſoon deſtroy them paſt recovery.

When the fruit appears upon the plants, there will alſo appear many male flowers on different parts of the plant; theſe may at firſt ſight be diſtinguiſhed, for the female flowers have the young fruit ſituated under the flowers, but the male have none; but theſe have three ſtamens in their centre with their anthers, which are loaded with a golden powder. This is deſigned to impregnate the female flowers, and when the plants are fully expoſed to the open air, the ſoft breezes of wind convey this farina or male powder from the male to the female flowers; but in the frames where the air is frequently too much excluded at this ſeaſon, the fruit often drops off for want of it; and I have often obſerved, that bees that have crept into the frames when the glaſſes have been raiſed to admit the air, have ſupplied the want of thoſe gentle breezes of wind, by carrying the farina of the male flowers on their hind legs into the female flowers, where a ſufficient quantity of it has been left to impregnate them. Theſe inſects therefore have taught the gardeners a method to ſupply the want of free air, which is ſo neceſſary for the performance of this in the natural way. This is done by carefully gathering the male flowers at the time when this farina is fully formed, and carrying them to the female flowers, turning them down over them, and with the nail of one finger, gently ſtriking the outſide of the male, ſo as to cauſe the powder on the ſummits to ſcatter into the female flowers, and this is found to be ſufficient to impregnate them; ſo that by practiſing this method, the gardeners have now arrived at a much greater certainty than formerly, to procure an early crop of Cucumbers and Melons.

When the fruit of the Cucumbers are thus fairly ſet, if the bed is of a proper temperature of warmth, they will ſoon ſwell, and become fit for uſe; ſo all that is neceſſary to be obſerved, is to water the plants properly, which ſhould be done by ſprinkling the water all over the bed, for the roots of the plants will extend themſelves to the ſide of the bed; therefore thoſe who are inclined to continue theſe plants as long as poſſible in vigour, ſhould add a ſufficient thickneſs of dung and earth all round the ſides of the beds, ſo as to enlarge them to near double their firſt width; this will ſupply nouriſhment to the roots of the plants, whereby they may be continued fruitful great part of the ſummer; whereas, when this is not practiſed, the roots of the plants, when they have reached the ſide of the beds, are dried by the wind and ſun, ſo that the plants languiſh and decay long before their time.

Thoſe gardeners who are fond of producing early Cucumbers, generally leave two or three of their early fruit, which are ſituated upon the main ſtem of the plant near the root, for ſeed; which, when fully ripe, they carefully ſave to a proper age for ſowing, and by this method they find a great improvement is made of the ſeed; and this they always uſe for their early crops only, for the ſucceeding crops do not deſerve ſo much care and attention.

I have here only mentioned the method of raiſing the young Cucumber plants in ſtoves; for as theſe conveniencies are now pretty generally made in the curious kitchen-gardens in moſt parts of England, this method may be more univerſally practiſed; but in ſuch gardens where there are no ſtoves, the ſeeds ſhould be ſown upon a well prepared hot-bed: and here it will be the beſt way to ſow the ſeeds in ſmall halfpenny pots, becauſe theſe may be eaſily removed from one bed to another, if the heat ſhould decline; or, on the contrary, if the heat ſhould be too great, the pots may be raiſed up, which will prevent the ſeed or the young plants from being injured thereby. When the plants are come up as was before directed, there ſhould be a freſh hot-bed prepared, with a ſufficient number of halfpenny pots plunged therein ready to receive the plants, which muſt be planted into them in the ſame manner as was before directed, and the after-management of the plants muſt be nearly the ſame; but as the ſteam of the hot-bed frequently occaſions great damps, there muſt be great care to turn and wipe the glaſſes frequently, to prevent the condenſed moiſture falling on the plants, which is very deſtructive to them. There muſt alſo be great attention to the admitting freſh air at all proper times, as alſo to be careful in keeping the bed to a proper temperature of heat; for as there is a want of fire to warm the air, that muſt be ſupplied by the heat of dung: afterwards theſe plants muſt be ridged out in the ſame manner as before directed.

If the bed is of a good temper for heat, your plants will take root in leſs than twenty-four hours; after which time you muſt be careful to let in a little air at ſuch times when the weather will permit, as alſo to turn the glaſſes upſide down every day to dry; for the ſteam of the bed condenſing on the glaſſes, will fall down upon the plants, and be very injurious to them; therefore whenever the weather is ſo bad as not to permit the glaſſes to lie turned long, you ſhould at leaſt turn them once or twice a day, and wipe off the moiſture with a woollen cloth; but you muſt alſo be very careful how you let in too much cold air, which is equally deſtructive to the tender

tender plants; therefore, to avoid this, it is a very good method to faſten before the upper ſide of the frame, where the air is ſuffered to enter the bed, a piece of coarſe cloth or mat, ſo that the air which enters may paſs through that, which will render it leſs injurious to your plants.

You muſt alſo be very cautious in giving water to the plants while young; and whenever this is done, it ſhould be ſparingly, and the water ſhould be placed either in a heap of dung, or in ſome other warm place, for ſome time before it is uſed, ſo as to be nearly of a temperature for warmth with the incloſed air of the hot-bed; and as the plants advance in height, you ſhould have a little dry ſifted earth always ready to earth up their ſhanks, which will greatly ſtrengthen them. You muſt alſo be very careful to keep up the heat of the bed, which, if you ſhould find decline, you muſt lay a little freſh litter round about the ſides of the bed, and alſo keep the glaſſes well covered in the nights or in bad weather: but if, on the other hand, your bed ſhould prove too hot, you ſhould thruſt a large ſtake into the ſide of the dung in two or three places, almoſt to the middle of the bed, which will make large holes, through which the greateſt part of the ſteam will paſs off without aſcending to the top of the bed; and when you find it has anſwered your purpoſe by ſlacking the heat of your bed, you muſt ſtop them up again with dung.

Theſe directions, if carefully attended to, will be ſufficient for raiſing the plants in the firſt bed: you muſt therefore, when you perceive the third, or rough leaf begin to appear, prepare another heap of freſh dung, which ſhould be mixed with aſhes, as was before directed; this ſhould be in quantity according to the number of holes you intend to make. The common allowance for ridging out the earlieſt plants is, one load to each light or hole, ſo that the bed will be near three feet thick in dung; but for ſuch as are not ridged out till march, two loads of dung will be ſufficient for three holes, for I could never obſerve any advantage in making theſe beds ſo thick with dung as ſome people do; their crops are ſeldom better, if ſo good, as thoſe which are of a moderate ſubſtance; nor are they forwarder, and the fruit is rarely ſo fair, nor do the Vines continue ſo long in health.

In making theſe beds, you muſt carefully mix the dung, ſhaking it well with the fork, ſo as not to leave any clods of dung unſeparated, as alſo to beat it down pretty cloſe, to prevent the ſteam from riſing too haſtily; you muſt alſo be careful to lay it very even, and to beat or preſs down the dung equally in every part of the bed, otherwiſe it will ſettle in holes, which will be very hurtful. When you finiſh laying the dung, you muſt make a hole exactly in the middle of each light, about a foot deep, and eight or nine inches over; theſe holes muſt be filled with light freſh earth, which ſhould be ſcreened to take out all large ſtones, clods, *&c.* laying it up in a hill; and in the middle of each thruſt in a ſtick about eighteen inches long, which ſhould ſtand as a mark to find the exact place where the hole is; then earth the bed all over about three inches thick, levelling it ſmooth, and afterwards ſet the frame upon it, covering it with glaſſes; but if there is any apprehenſion of the dung heating too violently, the earth ſhould not be laid upon the bed until the heat is ſomewhat abated, which will be in a few days, and then the earth may be laid upon the bed by degrees, covering it at firſt two inches thick; and a week or ten days after another inch in thickneſs may be laid on, but there ſhould be the whole thickneſs of earth laid upon the bed before the Vines begin to run; and if this thickneſs of earth is at laſt ſix or ſeven inches, the Vines will grow the ſtronger for its being ſo thick; for if the roots are obſerved, they will be found to ſpread and cover the whole bed as much as the Vines extend above; and when the earth is very ſhallow, or too light, the Vines will hang their leaves every day for want of a ſufficient depth of earth to ſupport their roots; ſo that if they are not conſtantly and well watered, they will not have ſtrength to laſt long, nor to produce fair fruit; and the giving them too much water is not ſo proper, nor will it anſwer near ſo well, as the giving a depth of earth upon the dung.

In four or five days time your bed will be in fit order to receive your plants, of which you may eaſily judge by pulling out one of the ſticks which was put in the middle of the holes, and feeling the lower part of it, which will ſatisfy you what condition your bed is in; then you muſt ſtir up the earth in the middle of the hole with your hand, breaking all clods, and removing all large ſtones, making the earth hollow in form of a baſon; into each of theſe holes you muſt plant two plants, in doing which, obſerve to make the holes for the plants a little ſlanting towards the middle of the baſon, eſpecially if your plants are long ſhanked; this is intended to place the roots of the plants as far as poſſible from the dung, to which if they approach too near, the lower part of their roots is ſubject to be burned off; then ſettle the earth gently to each plant, and, if the earth is dry, it will be proper to give them a little water (which ſhould be warmed to the temper of the bed, as was before directed;) and if the ſun ſhould appear in the middle of the day, they ſhould be ſhaded therefrom with mats until the plants have taken root, which will be in two or three days; after which, you muſt let them enjoy as much of the ſun as poſſible, obſerving to turn the lights in the day time to dry, as alſo to give a little air whenever the weather will permit.

You muſt alſo obſerve to keep the glaſſes covered every night, and in bad weather, but be very careful not to keep them covered too cloſe, eſpecially while the bed has a great ſteam in it, which will cauſe a damp to ſettle upon the plants, which, for want of air to keep the fluid in motion, will ſtagnate and rot them.

When your plants are grown to be four or five inches high, you muſt, with ſome ſlender forked ſticks, incline them toward the earth, each one a ſeparate way; but this muſt be done gently at firſt, leſt by forcing them too much, you ſhould ſtrain or break the tender veſſels of the plants, which would be very hurtful to them. In this manner you ſhould, from time to time, obſerve to peg down the runners as they are produced, laying each in exact order, ſo as not to interfere or croſs each other; nor ſhould you ever after remove them from their places, or handle them too roughly, whereby the leaves may be broken or diſplaced, which is alſo equally injurious to them; but whenever you have occaſion to weed the bed between the plants, do it with great care, holding the leaves aſide with one hand, while with the other you pull out the weeds.

In about a month after they are ridged out, you may expect to ſee the beginnings of fruit, which very often are preceded by male flowers, which many people are ſo ignorant as to pull off, calling them falſe bloſſoms; but this I am fully convinced, by many experiments, is wrong; for theſe flowers are of abſolute ſervice to promote the welfare of the fruit, which when theſe male flowers are entirely taken off, does very often fall away, and come to nothing: nor ſhould the Vines be pruned, as is too often the practice of unſkilful people, eſpecially when they are too luxuriant, which often happens when the ſeeds were freſh, or of the laſt year's ſaving, and the plants in good heart. If this ſhould happen to be the caſe, it would be very proper to pull up one of the plants, before they have run ſo far as to entangle with the other; for it often happens, that one or two plants are better than four or five, when they are vigorous; for when the frame is too much crouded with Vine, the fruit is ſeldom good, nor in ſuch plenty, as when there is a more moderate quantity of ſhoots; for the air being hereby excluded from the fruit, they often decay, and fall off very young.

You muſt alſo be very careful to cover the glaſſes every night when your fruit begins to appear, as alſo to lay a little freſh litter, or mowing of graſs round the ſides of the bed, to add a freſh heat thereto; for if the heat of the bed be ſpent, and the nights prove cold, the fruit will fall away and come to nothing; and when the ſun is extreme hot in the middle of the day, you muſt cover the glaſſes with mats to ſhade the Vines; for although they delight in heat, yet the direct rays of the ſun, when it has great force, are very injurious, by either ſcorching thoſe leaves which are near the glaſſes, or by cauſing too great a perſpiration, whereby the extreme part of the ſhoots and the large leaves are left deſtitute of nouriſhment, and the fruit will be at a ſtand, and often turn yellow before it arrives at half its growth; this is too often the caſe, when the beds have not a ſufficient depth of earth over the dung.

At this time, when your Vines are ſpread ſo as to cover the hot-bed, it will be of great ſervice when you water them, to ſprinkle them all over gently ſo as not to hurt the leaves; but obſerve to do this not at a time when the ſun is very hot, for hereby I have known a whole bed of Cucumbers ſpoiled; for the water remaining upon the ſurface of the leaves in drops, collects the rays of the ſun to a focus, and ſo ſcorches the leaves, that in one day's time they have, from a bright green, become of the colour of brown paper. The watering of the beds all over will be of great ſervice, by giving nouriſhment to thoſe roots, which by this time will have extended themſelves all over the bed; and if the warmth of the bed ſhould now decline, it will be of great ſervice to add a lining of freſh dung round the ſides of the beds, to give a new heat to them; for as the nights are often cold at this ſeaſon, where the beds have not a kindly warmth left in them, the fruit will frequently drop off the Vines, when grown to the ſize of a little finger, and if upon this lining of dung there is a thickneſs of ſtrong earth laid for the roots of the plants to run into, it will greatly ſtrengthen them, and continue the plants in vigour a much longer time; for the roots of theſe plants extend to a great diſtance when they have room, which they cannot have in a bed not more than five feet wide; ſo that when they have no greater extent for their roots, the plants will not continue in vigour above five or ſix weeks, which, if they have depth and extent of earth, will continue three months in bearing; ſo that where there are ſeveral beds made near each other, it will be the beſt way to fill up the bottom of the alleys between them with warm dung, and cover that with a proper thickneſs of earth, ſo as to raiſe them to the level of the beds. Theſe directions, with diligent obſervation, will be ſufficient for the management of this crop of Cucumbers; and Vines thus treated will continue to ſupply you with fruit till the beginning of july, by which time the ſecond crop will come to bear; the ſowing and managing of which is what I ſhall next proceed to.

Culture of Cucumbers under hand or bell-glaſſes.— About the middle of march, or a little later, according to the earlineſs of the ſeaſon, you muſt put in your ſeeds, either under a bell-glaſs, or in the upper ſide of your early hot-bed; and when the plants are come up, they ſhould be pricked upon another moderate hot-bed, which ſhould be covered with bell or hand-glaſſes, placed as cloſe as poſſible to each other; the plants ſhould alſo be pricked at about two inches diſtance from each other, obſerving to water and ſhade them until they have taken new root, which will be in a very ſhort time. This is to be underſtood of ſuch places where a great quantity of plants are required, which is conſtantly the caſe in the kitchen-gardens near London; but where it is only for the ſupply of a family, there may be plants enough raiſed on the upper ſide of the beds where the firſt crop is growing; or if the Vines ſhould have extended themſelves ſo far as to cover the whole bed, whereby there will not be room to prick the plants, a ſingle light will contain ſuch a number of plants, while young, to plant out in ridges, as will ſupply the largeſt family with Cucumbers during the latter ſeaſon. You muſt alſo cover the glaſſes with mats every night, or in very bad weather; but in the day time, when the weather is hot, you muſt raiſe the glaſſes on the oppoſite ſide from the wind, to give air to the plants, which will greatly ſtrengthen them; you muſt alſo water them as you find they require it, but this muſt be done ſparingly while the plants are young.

The middle of april the plants will be ſtrong enough to ridge out, you muſt therefore be provided with a heap of new dung, in proportion to the quantity of holes you intend to plant, allowing one load to ſix holes. When your dung is fit for uſe, you muſt dig a trench about two feet four inches wide, and in length juſt as you pleaſe, or the place will allow; and if the ſoil be dry, it ſhould be ten inches deep, but if wet, very little in the ground, levelling the earth in the bottom; then put in your dung, obſerving to ſtir and mix every part of it as was directed for the firſt hot-beds, laying it cloſe and even.

When this is done, you muſt make holes about eight inches over, and ſix inches deep, juſt in the middle of the ridge, and three feet and a half diſtance from each other; and if there be more than one ridge, the diſtance of thoſe ought to be eight feet and a half from each other; then fill the holes with good light earth, putting a ſtick into the middle of each for a mark, and afterwards cover the ridge over with earth about four inches thick, laying the earth the ſame thickneſs round the ſides. When the earth is levelled ſmooth, you muſt ſet the glaſſes on upon the holes, leaving them cloſe down about twenty-four hours, in which time the earth in the holes will be warmed ſufficiently to receive the plants; then with your hand ſtir up the earth in the holes making it hollow in form of a baſon; into each of which you ſhould plant three or four plants, obſerving to water and ſhade them until they have taken root; after which time you muſt be careful to give them a little air by raiſing the glaſſes on the oppoſite ſide to the wind, in proportion to the heat of the weather, as alſo to water them as you ſhall ſee they require it; but you muſt only raiſe the glaſſes in the middle of the day, until the plants fill the glaſſes, at which time you ſhould raiſe the glaſſes with a forked ſtick on the ſouth ſide, in height proportionable to the growth of the plants, that they may not be ſcorched by the ſun; this alſo will harden and prepare the plants to endure the open air, but you ſhould not expoſe them too ſoon thereto; for it often happens, that there are morning froſts in may, which are many times deſtructive to theſe plants when expoſed thereto; it is therefore the ſureſt method to preſerve them under the glaſſes, as long as they can be kept in without prejudice to the plants; and if the glaſſes are raiſed with two bricks on the backſide, and the forked ſtick on the other ſide, they may be kept in a great while without danger.

Towards the latter end of may, when the weather appears ſettled and warm, you ſhould turn your plants down gently out of the glaſſes; but do not perform this in a very dry, hot, ſunny day, but rather when there is a cloudy ſky, and an appearance of rain; you muſt in doing this raiſe the glaſſes either upon bricks or forked ſticks, whereby they may ſtand ſecure at about four or five inches high from the ground, that the plants may lie under them without bruiſing; nor ſhould you take the glaſſes quite away till the latter end of june, or the beginning of july, for theſe will preſerve the moiſture much longer to their roots than if they were quite expoſed to the open air; about three weeks after you have turned the plants out of the glaſſes, they will have made a conſiderable progreſs, eſpecially if the weather has been favourable, at which time you ſhould dig up the ſpaces of ground between the ridges, laying it very even; then lay out the runners of the Vines in exact order, and be careful in this work not to diſturb the Vines too much, nor to bruiſe or break the leaves; this digging of the ground will looſen it, and thereby render it eaſy for the roots of the plants to ſtrike into it, as alſo render the ſurface of the earth more agreeable to the Vines that run upon it. After this there will be no farther care needful, but only to keep them clear from weeds, and to water them as often as they ſhall require, which they will ſoon ſhew, by the hanging of their greater leaves. The ridges, thus managed, will continue to produce large quantities of fruit from june until the latter end of auguſt, after which time the coldneſs of the ſeaſon renders them unwholeſome, eſpecially if the autumn prove wet.

From theſe ridges people commonly preſerve their Cucumbers for ſeed, by making choice of two or three of the faireſt fruit upon each hole, never leaving above one upon a plant, and that ſituated near the root of it; for if you leave more, they will weaken the plant ſo much, that your other fruit will be ſmall, and fewer in number: but thoſe perſons who value themſelves upon producing Cucumbers very early, commonly leave three or four Cucumbers of the firſt produce of their earlieſt crop, when the fruit is fair; and the ſeeds of theſe early fruit, are generally preferred to any other for the firſt crop. Theſe ſhould remain upon the Vines until the middle or end of auguſt, that the ſeeds may be perfectly ripe; and when you gather them from the Vines, it will be proper to ſet the fruit in a row upright againſt a hedge or wall, where they may remain until the outer cover begins to decay; at which time you ſhould cut them open, and ſcrape out the ſeeds, together with the pulp, into a tub, which ſhould be afterwards covered with a board, to prevent filth from getting amongſt the pulp. In this tub it ſhould be ſuffered to remain eight or ten days, obſerving to ſtir it well with a long ſtick to the bottom every day, in order to rot the pulp, that it may be eaſily ſeparated from the ſeeds; then pour ſome water into the tub, ſtirring it well about, which will raiſe the ſcum to the top, but the ſeeds will ſettle to the bottom; ſo that by two or three times pouring in water, and afterwards ſtraining it off from the ſeeds, they will be perfectly cleared from the pulp; then you ſhould ſpread the ſeeds upon a mat, which ſhould be expoſed to the open air three or four days until they are perfectly dry, when they may be put up in bags, and hung up in a dry place where vermin cannot come to them, where they will keep good for ſeveral years, but are generally preferred when three or four years old, as being apt to produce leſs vigorous, but more fruitful plants.

Culture of Cucumbers in the open ground.—The ſeaſon for ſowing theſe is towards the latter end of may, when the weather is ſettled. The ground where theſe are commonly ſown, is between Cauliflowers, in the wide rows, between which are allowed four feet and a half ſpace when the Cauliflowers were planted. In theſe rows you ſhould dig up ſquare holes at about three feet and a half diſtance from each other, breaking the earth well with a ſpade, and afterwards ſmoothing and hollowing it in the form of a baſon with your hand; then put eight or nine ſeeds into the middle of each hole, covering them over with earth about half an inch thick; and if it ſhould be very dry weather, it will be proper to water the holes gently in a day or two after the ſeeds are ſown, in order to facilitate their vegetation.

In five or ſix days, if the weather be good, your plants will begin to thruſt their heads above ground; at which time you ſhould be very careful to keep off the ſparrows, which are very fond of the young tender ſeed-leaves of theſe plants; and if they are not prevented, will deſtroy your whole crop: but as it is not above a week that the plants are in danger, it will be no great trouble to look after them during that time; for when the plants are come up, and have expanded their ſeed-leaves, the ſparrows will not meddle with them.

You muſt alſo be careful to water them gently, as you find the drought of the ſeaſon may require; and when you perceive the third or rough leaf of the plants begin to appear, you muſt pull out all the weakeſt plants, leaving only three or four of the moſt promiſing and beſt ſituated in each hole, ſtirring the earth round about them with a ſmall hoe to deſtroy the weeds, and raiſe the earth about the ſhanks of the plants, putting a little earth between them, preſſing it gently down with your hand, that the plants may be thereby ſeparated from each other to a greater diſtance; then give them a little water (if the weather be dry) to ſettle the earth about them; which you muſt afterwards repeat as often as you ſhall find it neceſſary, ſtill being careful to keep the ground clear from weeds.

When your Cauliflowers are quite drawn off the ground from between the Cucumbers, you muſt hoe and clean the ground, drawing the earth up round each hole in form of a baſon, the better to contain the water when it is given them; you muſt alſo lay out the plants in exact order as they are to run and extend, ſo that they may not interfere with each other; then lay a little earth between the plants left, preſſing it down gently with your hand, the better to ſpread them each way, giving them a little water to ſettle the earth about them, repeating it as often as the ſeaſon ſhall require, and obſerving to keep the ground clean from weeds. The plants thus managed, will begin to produce fruit toward the end of july, when you may either gather them young for pickling, or ſuffer them to grow for large fruit.

The quantity of holes neceſſary for a family, is about fifty or ſixty; for if you have fewer, they will not produce enough at one gathering to make it worth the trouble and expence of pickling, without keeping them too long in the houſe, for you cannot expect to gather more than two hundred at each time from fifty holes; but this may be done twice a week during the whole ſeaſon, which commonly laſts five weeks; ſo that from fifty holes you may reaſonably expect to gather about two thouſand in the ſeaſon, which, if they are taken ſmall, will not be too many for a private family. And if ſo many are not wanted, they may be left to grow to a proper ſize for eating.

[*Additional directions for the Culture of Early Cucumbers.*

Moſt gardeners valuing themſelves upon having early Cucumbers, I have compreſſed and arranged the foregoing directions; and have added ſeveral others which there are either touched too curſorily or entirely omitted.

1. In the culture of early Cucumbers, that is ſuch as are in perfection during the months of march and april, where there is not a conveniency of ſtoves for raiſing the ſeedling plants, it is proper to have three hot-beds: the firſt ſmall with a ſingle-light frame, for a ſeed-bed, in which the plants are to remain only a few days: the ſecond, a larger ſingle-light, or a two-light frame, for a nurſery-bed, in which the plants are to continue pricked out into pots, till they have formed one joint, and the two firſt rough leaves are from two to three inches broad, which will be in three weeks or a month: the third, a two-light or three-light frame, or frames, in proportion to the quantity that is wanted, for the fruiting hot-bed, into which the plants are finally to be turned out of the pots, with good balls of earth about their roots. If your firſt frame be large enough, or a great number of plants be not wanting; the ſeeds may be raiſed, and the plants pricked out, and brought forward for the fruiting-bed in this, without the ſecond, by means of occaſional linings of dung: and if you have a ſtove, the firſt bed may be diſpenſed with.

The principal circumſtances to be attended to in this ſtage of the buſineſs are, to make the hot-beds on the ſurface, or rather above the ſurface, if your ground be wet; and not to dig a trench for them, as is often practiſed: in order that the bottom of the bed may not be chilled by ſtanding water, and that the whole of it may receive the full benefit of the linings of dung. To make the ſeedling bed two feet and a half high; and the ſecond three feet and a half, or if the dung be long four feet high. As ſoon as the bed is made, to ſet on the frame; keeping the glaſs down for a day or two to draw up the heat, and then letting out the ſteam by ſetting up the glaſs behind. In ſix, eight or ten days, when the heat begins to abate, to earth the bed five or ſix inches thick, and whilſt the earth is warm to ſow the ſeed in drills, or in ſmall pots; raiſing the light an inch or two behind in the day, and covering it at night with a mat. The beſt ſorts for early crops are, the early ſhort or long prickly Cucumber; (n. 2, 3.) the ſeed ſhould be ſaved from the earlieſt fruit, and ſhould be three or four years old. When the ſeedling plants are come up, and the ſeed-leaves are about half an inch in breadth, prick them out in ſmall pots, filled within an inch of the top with your compoſt earth, and ſet in the frame a day to warm; ſet four plants in each pot, covering them almoſt to the leaves, and watering them gently from bottles ſet a few hours in the frame to take off the cold. Continue to raiſe the lights every day, and ſometimes in the night during the great heat and ſteaming of the bed; in cold weather letting a mat hang looſely over the aperture. When the heat is moderate, the glaſſes ſhould be raiſed only from nine or ten in the morning to three or four in the afternoon, according to the ſeaſon; ſhutting them cloſe before ſun-ſet; and covering them with one, two or three mats, in proportion to the ſeaſon and the warmth of the bed; obſerving not to let the mats hang over the ſides of the bed, and taking them off about eight in the morning. Some perſons put a layer of hay between the mats in ſevere weather. Water the plants moderately once in three, four, five, or ſix days, according to the dryneſs of the earth in the pots, the heat of the bed, or the ſtate of the weather, between eleven and two o'clock; preferring ſun-ſhine for this purpoſe, and having the water ſoft and warm from 65° to 85° of the thermometer, or feeling neither hot nor cold when taken into the mouth. Earth up the young plants in the pots gradually with mould warmed in the frame, till the pots are full. Keep up the heat in the bed as regular as you can from 70° to 80°, by firſt laying dry ſtraw, fern, *&c.* round the ſides, in about a week: and in a fortnight or three weeks by giving the back and front a lining of hot dung eighteen inches wide at bottom contracting gradually to the top, where it ſhould be covered with earth two inches deep to keep down the ſteam: and in ten days or a fortnight after, lining the ſides, if the heat ſhould decline: guarding on theſe occaſions againſt burning, by raiſing the pots, ſetting up the glaſſes, *&c.* Some perſons for this purpoſe pour water on the dung; but if too much be poured in, it chills the bed, and if too little, it increaſes the burning.

One of the moſt important operations in this ſtage of the buſineſs is the pruning or ſtopping the young plants, for which directions have been given before under MELON. This is done to promote lateral ſhoots, which are the fruitful ones, and is particularly uſeful in this caſe, where the deſirable point is to procure fruit as early as poſſible. The end of the runner ſhould be taken off almoſt cloſe to the baſe of the ſecond leaf; and the operation is beſt performed when the end of the ſhoot is not bigger than a large pin's head.

2. The plants being thus prepared, in three weeks or a month, when the two or three firſt leaves are between two and three inches broad, they are fit to be finally tranſplanted into the fruiting beds, which the gardeners call *ridging out*. The beds muſt be got ready for this a week or ten days at leaſt before, and where there are ſeveral frames, near a fortnight, in order to have them of a proper temperature for receiving the mould and plants. The height of the beds ſhould be four feet, or three feet and a half at leaſt. As ſoon as they are finiſhed, the frames ſhould be ſet on, and the lights raiſed to give vent to the ſteam as the heat riſes. A long ſtick or two ſhould alſo be thruſt into the bed to judge of its temperature; and it muſt not be moulded till you can bear your finger on the ſticks for ſome time together. You muſt be careful however not to ſtay too long, for a briſk heat is required to bring the young plants forward at firſt.

Make a hillock of mould in the middle of each light ten or twelve inches high, which will require near a buſhel of earth; cover the reſt of the bed three inches thick with the ſame mould; and if you are fearful of the bed's burning, under each hill ſpread a layer of cow-dung, not too wet, eighteen inches or two feet in width, and an inch and half in thickneſs. Having finiſhed this, cloſe the glaſſes, and the next day the bed will be fit for the reception of the plants.

Early in the morning let the pots containing the plants to be ridged out be watered, that the earth may adhere firmly to their roots. One pot being deſtined for each hill, ſhake the plants out, diſturbing them as little as poſſible; and having made a ſufficient hole in the middle of the hillock, place the plants with the ball of earth about them in it, drawing the mould cloſe round and about an inch over them; if the mould be dry, give them a little water that is not cold, and ſhut the glaſſes cloſe. If the leaves flag much, ſhade the lights three or four days with a thin mat in the middle of the day.

Air muſt now be admitted daily by raiſing the lights behind, from half an inch to two or three inches high, according to the weather and the ſtate of the bed; hanging a mat looſely over the aperture when the weather is ſevere. Wet foggy weather however is more to be feared than froſt with ſunſhine. At this early ſeaſon, namely the beginning of february, it is ſometimes dangerous to admit air very freely, and yet the lights cannot be kept cloſe on account of the noxious ſteam: in this caſe the introduction of warm air by means of pipes opening into the frames and communicating with the open air through the bed, might be of conſiderable ſervice, and has been practiſed with great ſucceſs. The heat of the beds may alſo be regulated by thermometers, eſpecially where the perſon who manages them has not had long experience in the conduct of hot-beds. It is of great importance to have them kept nearly in the ſame temperature; and Cucumbers at this early ſeaſon require almoſt the ſame heat with the Pine-ſtove.

Mats muſt be put over the glaſſes at ſun-ſet, or ſooner if the weather be cloudy; and muſt be taken off in the morning, ſoon after ſun-riſe, or ſomewhat later in cold cloudy weather. A ſingle mat will be ſufficient at firſt, but as the heat of the beds declines, eſpecially if the weather be ſevere, two or three mats may be laid on, with hay between them if there ſhould be occaſion; remembering not to let them hang much over the ſides of the frame.

During the firſt fortnight examine carefully the ſtate of the hot-bed every day, leſt the heat ſhould become too violent and burn the young plants; the moſt certain indications of this are, the ſickly hue of the plants themſelves, and a whitiſh mouldy appearance at the bottom of the hillocks. This muſt be taken away before it reaches the roots of the plants, and a quantity of freſh earth put in its place. If the heat continues too violent, more of the burnt mould muſt be removed, plenty of air muſt be given to the plants if poſſible, and holes muſt be made in the ſides of the bed, by large ſtakes thruſt into the dung in different places. Some perſons pour water into the dung, to aſſwage the burning heat of the bed.

As ſoon as this danger is over, earth or mould the whole beds at different times to the depth of eight or ten inches; laying the mould for a day or two againſt the ſides and ends of the frames, to acquire a due degree of warmth.

Water moderately once in a week or ten days, or if the weather be warm, twice in that time; and as the ſeaſon advances, ſtill oftener. The beſt time is between ten and two o'clock. Let the chill be taken off the water; give it between the Vines, except in very fine weather, when it may be ſprinkled moderately all over the leaves; but if the ſun ſhould ſhine hot, throw a mat over the glaſſes for an hour or two. Whenever you water, ſhut down the lights for half an hour or an hour after.

Train the plants by pruning or ſtopping. In ten days or a fortnight after the firſt ſtopping, the plants will put forth two or three lateral ſhoots or runners; when theſe are advanced two or three joints in length without ſhowing fruit, ſtop each runner at the third joint, to promote their putting out fruitful ſhoots. As the runners advance train them regularly at equal diſtances, pegging them down occaſionally.

When the plants ſhow fruit, which may be expected in three or four weeks, if it have not appeared ſooner from the firſt or ſecond joint, be particularly attentive to keep up a regular heat in the beds; having previouſly laid dry litter or fern round them, then give them proper linings of dung. As ſoon as the heat is conſiderably abated, line the back of the bed directly a foot and half wide; in a week after line the front; and in ten or twelve days after that, ſhake up the firſt lining, adding a little freſh dung to it, and doing the ſame by the ſecond lining: always laying two or three inches of earth on the top of the dung, which ſhould be ſix inches higher than the bed, to allow for ſettling.

In ſetting the fruit, the male bloſſom ſhould be applied to the female on the day it opens, or the day after. It is the cuſtom with ſome to whelm the former over the latter, and to leave it there; but it is better to apply the anthers to the middle of the ſtigmas when they are in a proper ſtate to diſcharge the pollen, and then to throw the male bloſſom away, unleſs males are ſcarce, which ſometimes happens early in the year, and then one may be uſed to impregnate two or three females. Obſerve not to wet the flowers at this period, for that prevents the impregnation of the fruit.

It now remains only to cut off the weak, long-jointed, barren ſhoots, and to thin out the weakeſt and moſt ſtraggling runners, ſo as to be able to train the main vine and principal bearing ſide-runners in a regular manner: to clear away worn-out runners and decayed leaves, and to thin the cluſters of male bloſſoms where they are too large, and to pick them off as they decay: as the ſeaſon advances to ſhade the glaſſes with a ſingle mat occaſionally on ſcorching days; to give them more air by ſetting up the glaſſes higher in front as well as behind; to water them from one to four times a week, according to the heat of the weather; and when the plants are grown ſo large as to preſs againſt the lights, and ſo crowded as to ſhade the fruit too much, to cut out ſome of the leaves, to raiſe the frame three or four inches, and finally, in the middle of june, if the weather be ſettled, to raiſe the frames ſo high, that the Vines may be trained under them, along the ſides of the bed, covering them with mats at night for the firſt week; and thus leaving them till ſome time in july, when the frames may be taken off, and the plants will want no more protection, except in heavy rains, and at night when the weather is not quite propitious.

In this early frame culture of Cucumbers it is neceſſary to remember not to depend wholly upon the firſt ſowing, but to continue to ſow a little ſeed occaſionally, pricking the plants out ſo as to have them of two or three different growths, to ſupply the place of ſuch plants as do not thrive, or may be cut off by the ſeverity of the ſeaſon, burning, ſteaming, *&c.* And if they are not wanting for theſe purpoſes, they will be ready for the ſecond frame-crop. Two crops cultivated in this manner, will furniſh a ſucceſſion of fruit till thoſe which are under hand and bell-glaſſes come in, and theſe will be ſucceeded by thoſe in the open ground; by which means there will be a conſtant ſupply of fruit from february or march to the middle or end of ſeptember.

Early Cucumbers are in general much eſteemed in private families, and are a valuable article for the market-gardeners, for in march they often fetch thirty ſhillings a dozen; and in april from ten to fifteen ſhillings a dozen is a common price. After this time the price falls every week till auguſt, when thoſe in the natural ground come in, a dozen of which will ſometimes ſcarcely fetch a penny. The quantity of theſe ſold for eating and pickling is prodigious; in the ſummer of 1794, above ten thouſand buſhels were diſpoſed of in one week from the village of Sandy in Bedfordſhire; the gardeners of which ſupply the towns and villages fifty miles round with that and the other produce of their gardens.

The culture under hand-glaſſes and in the open ground being leſs difficult, and having been before ſufficiently diſcuſſed, is not inſiſted upon here.

Such perſons as are not contented with having Cucumbers from february or march to ſeptember, may have them at Chriſtmas or ſoon after by ſowing in october, and treating them in the manner above directed. Thoſe in the open ground may be continued through october and part of november, by placing frames over ſome of the beſt holes, and protecting them with lights during the night and in wet weather. The ſucceſſion may alſo be continued by ſowing the middle of july, and treating them in the ſame manner; or by ſowing the end of july, and tranſplanting into a ſlender hot-bed towards the end of auguſt. Or by ſowing in a ſlight hot-bed at the end of auguſt, and tranſplanting into another about the middle of ſeptember.

By theſe means may a ſucceſſion of Cucumbers be kept up during the latter autumnal and winter months, from the time that thoſe in the open ground go off, till the return of ſuch as are raiſed by the early frame culture in march. But theſe crops cannot be expected to ſucceed like the others, nor in general will they produce any thing more than a few fruit rather for curioſity than uſe.

Cucumbers may alſo be produced in hot-houſes or pine-ſtoves at any time in the winter or very early in the ſpring, with leſs trouble than in hot-beds, but not with the ſame certainty of a crop. For this purpoſe the ſeeds may be ſown in october, and from that time every fortnight during winter, in ſmall pots of rich earth plunged in the bark-pit, and at two or three days old pricked out into other pots, which muſt be alſo plunged into the bark-bed. Having treated the plants like thoſe for ridging out in the early frame-culture, when they are ready to put out runners, tranſplant them into large pots, or rather into boxes three feet long, a foot wide at top, nine inches at bottom, and ten inches deep. Plunge them half way in the bark-bed; or ſet them on the top of the flues; elevating them ten or twelve inches; or place them by means of brackets twelve or fifteen inches below the top glaſſes, a little behind the back walk of the ſtove; putting laths for the vines to run upon, as they advance in length.

Cuttings of Cucumbers taken off five or ſix inches long from healthy plants in the ſummer crops, at the end of ſeptember or the beginning of october, planted in pots of rich mould, plunged into the bark-bed and ſhaded till they have ſtruck, will produce fruit before Chriſtmas. By this method, or by laying, plants may be kept on from year to year.

After all that can be ſaid, in many points much will depend upon the experience, attention and ſagacity of the gardener himſelf.

Two centuries ſince (1597), in the infant ſtate of gardening in this country, Gerarde gives directions for making a hot-bed, whereon Cucumbers, *&c.* may be raiſed. It was to be made in the middle of april or ſomewhat ſooner of ſtable dung, an ell in breadth and depth; it was to be covered with hoops and poles, for glaſſes were not then known; and at night mats, old painted cloth, or ſtraw were to be thrown over it: the bed was to be covered with rich earth finely ſifted half a foot thick: in this the ſeeds were to be ſown; and the covering being put on, was to remain ſeven or eight days without being taken off: the plants being then come up were to be watered in the middle of the day with water that had ſtood in the houſe or in the ſun; the covering was to be put on every night and taken off every day: and when the plants had four or ſix leaves, and the danger of cold nights was paſt, they were to be replanted very curiouſly with the earth ſticking to them as near as may be, unto the moſt fruitful place, and where the ſun hath moſt force in the garden; covering them with dock leaves or wiſps of ſtraw, propped up with forked ſticks, to keep them from the cold of the night and the heat of the ſun. *Herball, p.* 764.

Parkinſon alſo, in 1629, gives directions for making a hot-bed of dung in the ſame manner for Melons; and mentions the covering them with bell-glaſſes.

The firſt account I find of raiſing Cucumbers in autumn to bring fruit about Chriſtmas, is by Mr. Thomas Fowler, gardener to Sir Nathanael Gould, at Stoke Newington. He preſented the king with a brace of well-grown Cucumbers on New Year's day 1721. The ſeeds were ſown on the 25th of ſeptember. *Bradley's huſbandry and gardening, vol.* 2. 61 *&* 246. *& v.* 3. 75.

This ſubject, ſo largely treated, of raiſing Cucumbers on hot-beds of dung, ſeems as little capable of ornament as any *; and yet Cowper in the third book of his Taſk †, at the ſame time that he has deſcribed the proceſs with great accuracy, has ſcattered over it ſome of the ſweeteſt flowers of poeſy.

"Grudge not, ye rich, (ſince luxury muſt have
"His dainties, and the world's more num'rous half
"Lives by contriving delicates for you)
"Grudge not the coſt. Ye little know the cares,
"The vigilance, the labor, and the ſkill,
"That day and night are exercis'd, and hang
"Upon the ticklifh balance of ſuſpenſe,
"That ye may garniſh your profuſe regales
"With ſummer fruits brought forth by wintry ſuns.
"Ten thouſand dangers lie in wait to thwart
"The proceſs. Heat and cold, and wind and ſteam,
"Moiſture and drought, mice, worms, and ſwarming flies,
"Minute as duſt, and numberleſs, oft work
"Dire diſappointment that admits no cure,
"And which no care can obviate. It were long,
"Too long, to tell th' expedients and the ſhifts
"Which he that fights a ſeaſon ſo ſevere
"Deviſes, while he guards his tender truſt,
"And oft, at laſt, in vain. The learn'd and wiſe
"Sarcaſtic would exclaim, and judge the ſong
"Cold as its theme, and, like its theme, the fruit
"Of too much labor, worthleſs when produc'd."

Cucumis. See *Anguria, Melothria, Momordica,* and *Sicyos.*]

CUCURBITA. (*A curvitate, according to Scaliger, the firſt ſyllable being doubled, as in* cacula, populus, *&c.*)

Lin. gen. n. 1091. *Reich.* 1192. *Schreb.* 1478. *Gærtn.* 88. *Tourn.* 36. *Juſſieu,* 396. Pepo. *Tourn.* 33. Melopepo. *Tourn.* 34.

Claſſ. 21. 10. Monoecia Syngeneſia.

Natural order of *Cucurbitaceæ.*

GENERIC CHARACTER.

* *Male flowers.*

Cal. *Perianth* one-leafed, bell-ſhaped, the margin terminated by five ſubulate teeth.

Cor. five-parted, growing to the calyx, bell-ſhaped; *diviſions* veiny-rugoſe.

Nectary a gland in the centre of the flower, concave, triangular.

Stam. *Filaments* three, converging, connected above, diſtinct below, growing to the calyx. *Anthers* creeping upwards and downwards, linear.

* *Female flowers.*

Cal. *Perianth* as in the male, ſuperior, deciduous.

Cor. as in the male.

Nectariferous glandule concave, ſpreading.

Stam. *Margin* ſurrounding, ending in three very ſhort cuſps.

Pist. *Germ* large, inferior. *Style* conic, three-cleft at the tip: (five-cleft, *G.*) *Stigma* ſingle, with a thick, convex margin, creeping upwards and downwards, three-cleft.

Per. *Pome* (Berry, *G.*) three-celled; (three to five, *Juſſ.* ſix cells, *Adanſ.*) cells membranaceous, ſoft, diſtinct. (two-parted, *G.*)

Seeds very many, compreſſed, ſwollen on the margin, obtuſe, placed in double order.

Obs. The Cucurbita of Tourn. *has ſeeds emarginate at the tip.*

Pepo of Tourn. *has ſeeds ſurrounded with an entire, tumid margin.*

ESSENTIAL CHARACTER.

Cal. five-toothed. *Cor.* five-cleft.

Male. Filaments three.

Female. Piſt. five-cleft. Seeds of the pome with a ſwelling margin.

SPECIES.

1. Cucurbita lagenaria. *Bottle Gourd,* or *long Gourd.*
Lin. ſpec. 1434. *Reich.* 4. 202. *mat. med.* 209. *hort. cliff.* 451. *upſ.* 291. *Haſſelqu. itin.* 488. *edit. engl.* 255. *Brown. jam.* 354. 2, 3. *Blackw. t.* 522. *a. b. Sabb. hort.* 1. *t.* 69. *Gærtn. fruct.* 2. 50. *Lour. cochinch.* 592.
C. oblonga, fl. albo, fol. molli. *Bauh. pin.* 313. *Bauh. hiſt.* 2. 214, 15, 16. *Raii hiſt.* 638, 1, 2, 3.
C. lagenaria. *Mor. hiſt.* 2. 23. *ſ.* 1. *t.* 5. *f.* 1, 2, 3. *Rumph. amb.* 5. *t.* 144. *Ger.* 777. 1, 2. & 779. 1. *emac.* 923. & 924. 1. *Park. theat.* 769. 1, 3.
β. C. lignoſa. *Mill. dict. n.* 5. *Park.* 773. 4. *Raii hiſt.* 644.
Leaves ſomewhat angular tomentoſe biglandular at the baſe underneath; fruits woody.

[2. Cucurbita hiſpida.
Lin. ſyſt. 868. *Thunb. jap.* 322.
Leaves angular, ſtem and petioles hiſpid.

3. Cucurbita ovifera. *Egg Gourd.*
Lin. ſyſt. 868. *mant.* 126. *Reich.* 4. 203.
Leaves lobed; fruits obovate; tendrils in ſevens digitated.]

4. Cucurbita Pepo. *Pompion* or *Pumpkin Gourd.*
Lin. ſpec. 1435. *Reich.* 4. 203. *hort. cliff.* 452. *upſ.* 291. *Mor.* 1. 5. 4, 5. *Gærtn. fruct.* 2. 49. *Lour. cochinch.* 593. *Rumph. amb.* 5. *t.* 143.
C. major rotunda fl. luteo, fol. aſpero. *Bauh. pin.* 312. *Bauh. hiſt.* 2. 218, 19.
C. indica rotunda. *Dalech. hiſt.* 616.
Pepo vulgaris. *Raii hiſt.* 639.—maximus rotundus. *Ger.* 773. 2. *emac.* 919. 2.
β. Pepo oblongus. *Bauh. pin.* 311. *Ger.* 773. 1. *emac.* 919. 1. *Mor.* 1. 5. 6. *Dod. pempt.* 665.
Leaves lobed; fruits gloſſy.

5. Cucurbita verrucoſa. *Warted Gourd.*
Lin. ſpec. 1435. *Reich.* 4. 203. *Bauh. hiſt.* 2. 222. *Thunb. jap.* 323.
Leaves lobed; fruits knobby-warted.

6. Cucurbita Melopepo. *Squaſh Gourd.*
Lin. ſpec. 1435. *Reich.* 4. 203. *Lour. cochinch.* 593. *Rumph. amb.* 5. *t.* 145.
Melopepo clypeiformis. *Bauh. pin.* 312.
Pepo maximus clypeatus. *Ger.* 774. 4. *emac.* 920. 4.
Leaves lobed; ſtem erect, fruits flatted knobby.

7. Cucurbita Citrullus. *Water Melon.*
Lin. ſpec. 1435. *Reich.* 4. 204. *hort. cliff.* 452. *upſ.* 3. *mat. med.* 209. *Haſſelqu. itin.* 488. *edit. engl.* 255. *Lour. cochinch.* 594.
Anguria. *Mill. dict. Mor.* 1. 6. 2.—indica. *Rumph. amb.* 5. *t.* 146. *f.* 1.
A. Citrullus. *Bauh. pin.* 312. *Blackw. t.* 157. *Raii hiſt.* 643. 1, 2. *Park. theat.* 771. *f.* 772. *n.* 1.
Citrullus fol. colocynthidis ſecto, ſemine nigro. *Bauh. hiſt.* 2. 235.
Citr. officinarum. *Ger.* 767. 1, 2. *emac.* 913. 1, 2.
Leaves many-parted.

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* Ornari res ipſa negat, contenta docere.

† P. 115 to 119.

DESCRIPTIONS, *&c.*

[The plants of this genus are very nearly allied to thoſe of *Cucumis*, and are diſtinguiſhed from it chiefly by the ſwelling rim of the ſeed. Like them they are annual, with trailing herbaceous ſtems, furniſhed with tendrils for climbing. Leaves heart-ſhaped, except in *Citrullus*, which has them jagged-palmate. Peduncles ſhort, with one or two flowers. Calyx ſpreading and whitiſh in the firſt ſpecies, yellow in *Citrullus*; bell-ſhaped and yellow in *Melopepo* and *Pepo*, dilated at the baſe with a reflex border in the firſt, narrowed at the baſe with an upright border in the ſecond. Fruit fleſhy (in *Citrullus* juicy), moſtly eatable; in *Melopepo* ſpheroidal, in *Pepo* oblong or various, in *C. lagenaria* long, ſmooth, ſubcylindric, or elſe contracted in the middle[a].

1. Stems thick, long, climbing, with tendrils, branched,] extending near twenty feet in length, covered with a fine ſoft hairy down. [Leaves cordate, roundiſh, repand, toothletted, petioled, alternate, biglandular underneath, ſoft, aſh-coloured, large.] Flowers large, white, on long peduncles, [ſolitary, lateral. Corolla ſpreading, wrinkled, with acuminate diviſions. Fruit ſhaped like a bottle, with a large roundiſh belly and a neck, very ſmooth[b]], when ripe of a pale yellow colour, ſome near ſix feet long, and eighteen inches round; the rind becoming hard, and being dried, contains water. [Seeds quadrangular-oblong, cut off and emarginate at top, three-cornered and beaked at bottom, edge keeled with a double raiſed line, ſmoothiſh, of a pale bay colour[c].

The Arabians call the bottle Gourd *Charrah*. The poor people eat it boiled, with vinegar; or fill the ſhell with rice and meat, and thus making a kind of pudding of it. It grows in all parts of Egypt, and in Arabia, wherever the mountains are covered with rich ſoil[d].

In Jamaica the ſhells are generally uſed for water-cups, and frequently ſerve for bottles among the negroes and poorer ſort of white people in the country. A decoction of the leaves is recommended much in purging clyſters; and the pulp of the fruit is often employed in reſolutive poultices: it is bitter and purgative; and may be uſed inſtead of Coloquintida[e].

β. The large Gourd is cultivated on account of the woody ſhell of the fruit, which will frequently contain between twenty and thirty quarts. Where aloes is manufactured in any quantity, it is commonly preſerved in theſe ſhells; but in Jamaica they are uſed only to hold water and ſmall grain[f].]

The ſhells are of different forms, ſome ſhaped like a pear, others like a bottle, others again like an orange.

[Native of both Indies. Cultivated 1597[g].

2. Stem furrowed, climbing, covered with aſh-coloured hairs. Leaves petioled, having five angles, or ſublobed, with ſtraight angles, nerved, villoſe on both ſides. Petioles round, hiſpid, a finger's length. Flowers axillary, very cloſely ſet with ferruginous hairs; the lower a finger's length, the upper ſhorter. Tendrils ſimple, bifid or trifid. Calyx and peduncle very cloſely hirſute, with ferruginous hairs. Native of Japan, where it flowers in ſeptember[h].

3. The herb and flowers are very like the Pompion, but this is not ſo rough. The leaves are not many-cleft, neither is the fruit bitter. The tendrils are ſtraight, and end in ſmaller ſpiral tendrils, uſually ſeven in number. Fruit ſmooth and even, the ſize and form of an hen's egg, with the rind ſo hard as ſcarcely to be cut with a knife, painted with ten milk-white longitudinal lines, as if it were a hybridous production of *Bryonia lacinioſa*.

Native of Perſia, about Aſtracan[i].

4. Stems thick, angular, extremely hiſpid, branched, climbing by means of bifid tendrils,] or ſpreading to the diſtance of forty feet, ſo that a ſingle plant, if properly encouraged, and all the ſide branches permitted to remain, will overſpread twenty rods of ground. [Leaves cordate, large, roundiſh-angular, toothed, wrinkled, hairy on both ſides, on long, alternate, thick, flexuoſe, hirſute petioles. Flowers yellow, lateral, ſolitary, on peduncles reſembling the petioles, but ſhorter. Teeth of the calyx large, gaſhed, waved, reflex[k]. Fruit roundiſh, ovate-globular or oblong-ovate; pale green on the outſide, and commonly hiſpid, with briſtly hairs; within having a ſpongy inſipid white pulp or fleſh; divided in the middle into three primary cells, each of which is double, and theſe are ſubdivided into the proper cells of the ſeeds, which are very numerous, horizontal, elliptic, of a compreſſed lens ſhape, ſmooth, whitiſh, encircled with a rounded tumid margin, and within that with a raiſed line: it has four coats, the outmoſt very thin and tranſparent; the next leathery, brittle and white; the third ſomewhat fleſhy and green, and the inmoſt membranaceous and cobwebbed: albumen none: embryo elliptic, white; ſeed-leaves fleſhy, ſlightly convex on the outſide, flat within, veiny-wrinkled[l].]

The fruit varies in form and ſize; two hundred and ſixty of them, on an average the ſize of half a peck, have been produced from a ſingle plant in New England. In Europe the Pompion, which we have corrupted to Pumpkin, is frequently planted by the country people on their dunghills, and ſuffered to trail at length over the graſs of an orchard. When the fruit is ripe, they cut a hole on one ſide, and having taken out the ſeeds, they fill the void with ſliced apples, adding a little ſugar and ſpice, and bake it; but it is eſteemed hard of digeſtion. [In the Eaſtern countries, it is reckoned the moſt wholeſome of the Cucurbitas, and is even given to the ſick, as being cooling and diuretic. Its natural place of growth is not known.

It flowers from june to auguſt; and was cultivated here before 1570, as appears from Lobel[m].

Formerly Pompions were called in Engliſh Melons, or corruptly Millions; and the true Melons, Muſk-Melons.

5. The plant, flower and ſeeds of this are the ſame as in the Pompion; but the fruit is ſmaller, with a harder rind, that is almoſt woody[n]. Loureiro is of opinion that it is no more than a variety of the next ſpecies.]

The warted Gourd is very common in moſt parts of America, where it is cultivated as a culinary fruit. It varies in form and ſize, being round, flat, ſhaped like a bottle, or oblong; the rind is white when the fruit is ripe, and covered with large protuberances or warts. It is commonly gathered when half grown, and boiled by the inhabitants of America to eat as ſauce with their meat. In England it is cultivated only as a curioſity, a variety of better eſculent plants being in ſeaſon here, when theſe are fit for uſe.

[Cultivated in 1731, by Mr. Miller[o].

6. Stem roundiſh, hairy, procumbent or climbing, with trifid tendrils; branches many, long. Leaves lobed-angular, ſerrate, hairy, alternate, on long petioles. Flowers yellow, on lateral, one-flowered peduncles: ſegments of the calyx linear-ſpatulate, ſpreading: anthers linear, diſtinct, erect. Fruit large, reddiſh-yellow or yellowiſh-white within and without, commonly roundiſh, often flatted at top and bottom, always toruloſe, ſometimes ovate, ſeldom warted.

This, ſays Linneus, has tendrils on the ſtem, though it be neither climbing nor procumbent. In this, however, he is miſtaken, for Loureiro informs us, that in India it is always ſcandent, when a ſupport is at hand, but when there is none, it is procumbent[p].]

Mr. Miller alſo remarks, that it often grows with a ſtrong buſhy erect ſtalk, without putting out runners from the ſide like the other ſorts, but that after it has been cultivated a few years in the ſame garden, the plants will become trailing: and that ſeeds out of the ſame fruit have produced erect plants bearing the ſame fruit with the parent, in one garden; and in another, trailing plants, with larger fruit, of a different ſhape. It is common in North America, where it is cultivated for the ſame purpoſes as the preceding. [Alſo in the Eaſt-Indies, China, &c. The fruit is of great uſe in long voyages, for it may be kept ſeveral months freſh and ſweet [q].

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[a] Juſſieu.
[b] Loureiro.
[c] Gærtner.
[d] Haſſelquiſt.
[e] Browne.
[f] Ibid.
[g] Hort. kew. from Ger.
[h] Thunberg.
[i] Linn. mant.
[k] Loureiro.
[l] Gærtner.
[m] Hort. kew.
[n] Linn. ſpec.
[o] Hort. kew.
[p] Loureiro.

Cultivated in 1597 [r].

7. Stem round, ſtriated, long, branched, hairy, procumbent, diffuſed, with lateral bifid tendrils. Flowers yellow, on ſhort, ſolitary, lateral peduncles. Fruit large, ſmooth, round or oblong, a foot and half in length, within watery, ſweet, very red or pale. Seeds black or rufous [s].] The fruit varies much in form and colour. It is cultivated in the warm countries of Europe, alſo in Aſia, Africa and America, where it is greatly eſteemed for its wholeſome cooling quality. In England it is not much regarded.

[Native of the ſouth of Europe, and cultivated before 1597 by Gerarde [t].

It ſerves the Egyptians for meat, drink and phyſic. It is eaten in abundance during the ſeaſon, which is from the beginning of may until the overflowing of the Nile, that is, to the end of july, or beginning of auguſt. It is the only medicine the common people uſe in ardent fevers. For this purpoſe they have a variety that is ſofter and more juicy than the common ſort: when this is very ripe, or almoſt putrid, they collect the juice, and mix it with roſe water and a little ſugar. This fruit ſhould be eaten by Europeans with great caution; when taken in the heat of the day, whilſt the body is warm, colics and other bad conſequences often enſue; and it is well known that perſons are much troubled with worms, at the time this fruit is in ſeaſon [u].

Gerarde calls the Water-Melon *Citruls*, *Cucumber Citruls*, and *Pome Citruls*. Parkinſon, the *Citrull* or *Turkie Million*.

Three other ſpecies of Cucurbita are mentioned to grow in the Society iſles, which Forſter has named—pruriens, aſpera & multiflora. *Flor. auſtr. n.* 554, 555, 556.]

PROPAGATION AND CULTURE.

1 to 6. Theſe may be propagated by ſowing their ſeeds in april, on a hot-bed; and when the plants come up, they ſhould be tranſplanted on another moderate bed, where they ſhould be brought up hardily, and have a great deal of air to ſtrengthen them; and when they have got four or five leaves, they ſhould be tranſplanted into holes made upon an old dunghill, or ſome ſuch place, allowing them a great deal of room to run, for ſome of the ſorts will ſpread to a great diſtance.

The firſt ſort requires to be treated more tenderly than the others, in order to procure ripe fruit; the ſeeds therefore ſhould be ſown upon a moderate hot-bed in april, and the plants afterward planted each into a penny pot, and plunged into a very moderate hot-bed to bring them forward; but they muſt not be tenderly treated, for if they have not a large ſhare of free air admitted to them every day, they will draw up weak. When the plants are grown too large to be continued in the pots, there ſhould be holes dug where they are deſigned to grow, and three or four barrows full of hot dung put into each; theſe ſhould be covered with earth, into which the plants muſt be planted, and covered with hand-glaſſes till they run out.

There are ſome people who ſet theſe plants by the ſides of arbours, over which they train the vines; ſo that in a ſhort time they will cover the whole arbour, and afford a ſtrong ſhade, and upon ſome of theſe arbours I have ſeen the longeſt fruit. There are others who plant them near walls, pales, or hedges, to which they faſten the Vines, and train them to a great height: the Orange-ſhaped Gourd is the ſort which is moſt commonly ſo planted for the ornament of its fruit, which has a pretty effect, eſpecially when ſeen at ſome diſtance. All the ſorts require a large ſupply of water in dry weather.

7. Firſt provide ſome ſeeds, which ſhould be three or four years old; for new ſeeds are apt to produce vigorous plants, which are ſeldom ſo fruitful as thoſe of a moderate ſtrength. The beſt ſorts to cultivate in England, are thoſe with ſmall round fruit, which come from Aſtracan, thoſe with very large fruit ſeldom ripen well in this climate. Prepare a heap of new dung the beginning of february, which ſhould be thrown in a heap for about twelve days to heat, turning it over twice, mixing it well; then make a hot-bed in which theſe ſeeds, as alſo Cucumber-ſeeds and Muſk Melons may be ſown. The dung ſhould be well wrought in making the bed, and muſt be beaten down pretty cloſe with a dung-fork, that the heat may not be too violent, but of longer continuance. When the dung is thus laid, cover it about four inches thick with good light earth, and having ſpread it very even, put the frame and glaſs over it, leaving it to warm four or five days before you put the ſeeds into it, obſerving, if the ſteam riſes pretty much, to raiſe up the glaſs to let it paſs off: then, if you find your bed in proper temper, you may ſow your ſeeds therein in drills, covering them over with earth about half an inch. After this, if you find your bed very warm, you muſt give air in the day-time by raiſing the glaſſes; but if the bed is cool, you muſt cover it well with mats every night, as alſo in bad weather. In four or five days after, you muſt prepare another hot-bed to receive theſe plants, which will be fit to tranſplant in ten days, or a fortnight at moſt, after the ſeeds are ſown; this bed need not be very large, for a few of theſe plants will fill a large quantity of frames, when they are planted out for good, and while the plants are young, there may be a great quantity kept in one light; ſo that thoſe perſons who raiſe early Cucumbers and Muſk Melons, may alſo raiſe theſe plants in the ſame bed; for two or three lights will be ſufficient to raiſe plants of all three kinds, to ſupply the largeſt families, until they are planted out for good. In the management of theſe plants while young, there is little difference from the directions given for raiſing Muſk Melons, therefore I need not repeat it here. The chief thing to be obſerved, is, to let them have a large ſhare of air whenever the weather will permit, otherwiſe the plants will draw up weak, and be good for little. As theſe plants will require two or three hot-beds to bring the fruit to perfection, it will be the better way to put the plants into baſkets, when they have gotten four leaves, as is directed for raiſing early Cucumbers; but you ſhould not plant more than two plants in each baſket, for if one of them lives it will be ſufficient; therefore when both the plants ſucceed, you ſhould draw out the weakeſt and moſt unpromiſing, before they begin to put out their ſide ſhoots, otherwiſe they will entangle and render it difficult to be performed, without greatly injuring the remaining plant.

The baſkets in which theſe plants are to be planted, need not be more than a foot diameter; ſo that one light will contain eight of them, which will be ſufficient for twenty-four lights, when they are planted out for good; for where the plants are vigorous, one ſingle plant will ſpread ſo far as to fill three lights; and if they have not room, they ſeldom ſet their fruit well.

Theſe baſkets may remain in the nurſery-beds until the plants have ſpread, and put out many runners; for when the heat of this bed declines, it is ſoon revived by adding a proper lining of warm dung to the ſides of the bed quite round; ſo that when they are taken out of this bed, and placed in the ridges where they are to remain, the heat of the beds will laſt ſo long as to ſet their fruit, which is of great conſequence; for when the plants are ridged

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[q] Loureiro.
[r] Hort. kew.
[s] Loureiro.
[t] Hort. kew.
[u] Haſſelquiſt.

out very young, the beds are generally made of great thickneſs in dung, in order to continue their heat; ſo that for ſome time after they are made, they are ſo extreme hot, as to endanger the ſcalding of the plants; and by the time the fruit begins to appear, there is little heat left in the beds, which often occaſions the fruit to drop off, and come to nothing.

After theſe plants are placed in the beds where they are to remain, carefully lead the ſhoots as they are produced, ſo as to fill each part of the frame, but not to croud each other; and be careful to keep them clear from weeds, as alſo to admit freſh air whenever the weather will permit; they muſt alſo be frequently watered, but do not give it them in great quantities. In ſhort, there is little difference to be obſerved in the management of theſe from that of Muſk Melons, but only to give them more room, and to keep the beds to a good temperature of heat, and when the fruit appears, to admit air freely to the plants, in order to ſet their fruit; but when the nights are cold, the glaſſes muſt be covered with mats to keep the beds warm, without which this fruit will ſeldom come to good in this country.

[Cucurbita. See *Tricoſanthes.*
Cucurbitifera. See *Cratæva, Creſcentia.*
Cudupariti. See *Goſſypium.*
Cudweed. See *Athanaſia, Filago, Gnaphalium.*
Cujavus. See *Pſidium.*]
Cujete. See *Creſcentia.*
[Culilaban. See *Laurus.*
Cumin. See *Cuminum.*
Cumini. See *Myrtus.*]
Cuminoides. See *Lagoecia.*

CUMĪNUM. (*ϖαρὰ το κύτειν, prægnans eſſe, from its fertility.*)

Lin. gen. n. 351. *Reich.* 381. *Schreb.* 483. *Gærtn.* 23. Juſſ. 21. * *Tournef.*

Claſſ. 5. 2. Pentandria Digynia.

Nat. order of *Umbellatæ* or *Umbelliferæ.*

GENERIC CHARACTER.

Cal. *Umbel univerſal* and partial, often four-parted.
Involucre univerſal of as many leaves, which are very long, perfectly entire, but in ſome-three-cleft.
Partial ſimilar.
Perianth proper ſcarce manifeſt. *Florets* all fertile.
Cor. *univerſal* uniform.
Proper of five petals, inflex-emarginate, ſomewhat unequal.
Stam. *Filaments* five, ſimple. *Anthers* ſimple.
Pist. *Germ* ovate, larger than the flower, inferior. *Styles* two, very ſmall. *Stigmas* ſimple.
Per. none, fruit ovate, ſtriated.
Seeds two, ovate, ſtriated on one ſide and convex, on the other flat.

ESSENTIAL CHARACTER.

Involucres four-cleft. *Umbellules* four. *Fruit* ovate, ſtriated.

SPECIES.

1. Cuminum Cyminum. *Cumin.*
Lin. ſpec. 365. *Reich.* 698. *mat. med.* 82. *Gouan illuſtr.* 18. *Riv. pent. t.* 40. *Gærtn. fruct.* 107. *Plenck, ic. t.* 192. *Woodv. med. bot.* 520. *t.* 191. *Rivin. pent. t.* 40.
C. ſemine longiore. *Bauh. pin.* 146. *Mor. hiſt.* 271. *ſ.* 9. *t.* 2. *row* 1.
C. ſativum. *Cam. epit.* 518. *Bauh. hiſt.* 3. 22. *Ger.* 907. *emac.* 1066. *Raii hiſt.* 433.
C. vulgare. *Park. theat.* 887.

DESCRIPTION, &c.

[Root annual, round, ſcarcely branched. Stem a palm in height;] Miller ſays, it ſeldom riſes more than nine or ten inches high in the warm countries where it is cultivated, and that he has never ſeen it grow more than three or four inches high in England. [It is ſmooth, ſtriated, branched from the bottom, flexuoſe, and divaricately panicled. Leaves ſubbiternate, the lateral leaflets being binate or bifid, and the end one trifid; all the ſegments unequal, filiform, and an inch long: the uppermoſt leaves are only ternate, the middle leaflet longer than the two others.] According to Miller, the leaves are divided into long narrow ſegments like thoſe of Fennel, but much ſmaller; they are of a deep green, and generally turn back at the end. [Peduncles oppoſite to the leaves, ſpreading the length of the internodes. Rays of the umbel from four to ſix, nearly equal, ſpreading, the third of an inch in length. Univerſal involucres of two or three ſubulate, unequal leaflets, the length of the umbellets, ſometimes trifid. Three or four flowers, ſeldom five, in each umbellet. Pedicels unequal, about the ſame length with the fruits. Involucels often as many as the flowers, leaflets unequal, briſtle-ſhaped and acuminate, the length of the umbellets. Corollas purpliſh or pale bluſh-colour, rayed. Fruit oblong, thicker in the middle [a]; the ſame ſize with that of fennel, and aromatic; terminated by the erect toothlets of the calyx, and the two ſhort reflex ſtyles; ſtriated, ſomewhat hiſpid, pale. Seeds convex on one ſide, on which are nine ſtreaks, and minute briſtles ſcattered over it; the other ſide is flat [b].

Native of Egypt. It flowers in june and july. Cultivated in 1594, by Sir Hugh Plat [c]. Gerarde ſays, he has proved the ſeeds in his garden, where they have brought forth ripe ſeed much fairer and greater than any that cometh from beyond the ſeas. He ſowed it in the midſt of may, it ſprung up in ſix days, and the ſeed was ripe in the end of july. It is ſingular, therefore, that the Cumin ſhould never produce ſeeds with Mr. Miller.

It is cultivated in the ſouth of Europe, and all Leſſer Aſia.] In the iſland of Malta, where it is much propagated for ſale, it is called *Cumino aigro*, hot Cumin, to diſtinguiſh it from Aniſe, which they call *Cumino dolce*, or ſweet Cumin.

PROPAGATION AND CULTURE.

If the ſeeds of this plant are ſown in ſmall pots filled with light kitchen-garden earth, and plunged into a very moderate hot-bed to bring up the plants, and theſe after having been gradually inured to the open air, turned out of the pots, and planted in a warm border of good earth, preſerving the balls of earth to their roots, and afterwards kept clean from weeds; the plants will flower pretty well, and by thus bringing them forward in the ſpring, they may perfect their ſeeds in very warm ſeaſons.

[Cuminum. See *Hypecoum, Lagoecia, Pimpinella.*

CUNĪLA. (*The name of a plant in Pliny,* Κονιλη, Nicand. *Suppoſed to be ſo called from the flowers growing in a head, reſembling a Cone or Strobile.*)

Lin. gen. n. 35. *Reich.* 38. *Schreb.* 46. *Juſſieu* 111. *Hedyoſmos D. Royen. Mich. act. N. C.* 1748. *app.* 211.

Claſſ. 2. 1. Diandria Monogynia.

Nat. order of *Verticillatæ*, or *Labiatæ.*

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, cylindric, permanent, ten-ſtreaked; mouth ſomewhat lipped, five-toothed, permanent.
Cor. one-petalled, ringent. *Upper lip* erect, flat, emarginate. *Lower lip* three-parted; *diviſions* rounded, middle one emarginate.
Stam. *Filaments* two, filiform, and two rudiments of filaments. *Anthers* roundiſh, twin.
Pist. *Germ* four-parted. *Style* filiform, length of the ſtamens. *Stigma* two-cleft, ſharp.
Per. none. *Calyx* with its throat cloſed with ſhaggy hairs.
Seeds four, oval, minute.

ESSENTIAL CHARACTER.

Cor. ringent; upper lip erect, flat. *Filaments* two, barren. *Seeds* four.

SPECIES.

1. Cunila mariana. *Mint-leaved Cunila.*
Lin. ſpec. 30. *Reich.* 57. *Gron. virg.* 64. (Thymus.) *Pluk. mant. t.* 344. *f.* 1.] *Mor. hiſt.* 413. *ſ.* 11. *t.* 19. *f.* 7. (Calamintha).

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[a] Gouan.
[b] Gærtner.
[c] Hort. kew.

Satureia origanoides. *Lin. ſpec. edit.* 1. 568. *Mill. dict. n.* 5.
Leaves ovate ſerrate; corymbs terminating dichotomous.

[2. Cunila pulegioides. *Pennyroyal-leaved Cunila.*
Lin. ſpec. 30. *ſyſt.* 67.
Meliſſa pulegioides. *Lin. ſpec. edit.* 1. 593. *Gron. virg.* 167. *Kalm. itin.* 2. 314. *engl. edit.* 1. 194.
Leaves oblong two-toothed; flowers in whorls.

3. Cunila thymoides. *Thyme-leaved Cunila.*
Lin. ſpec. 31. *Reich.* 57. *Mor.* 404. *f.* 6. (Acinos).
Thymus pulegioides. *Lin. ſpec. edit.* 1. 592.
Leaves oval, very entire; flowers in whorls, ſtem four-cornered.

4. Cunila capitata.
Lin. ſyſt. 67. *ſuppl.* 87.
Leaves ovate; flowers terminating; umbel roundiſh.

DESCRIPTIONS, &c.

1. Perennial. Native of North America. It flowers from july to ſeptember, and was cultivated in 1760, by Mr. James Gordon [d].]

There are two varieties of this; one has narrower leaves and larger heads, and the leaves have very little ſcent; whereas thoſe of the common ſort ſmell ſo like Pennyroyal as not to be diſtinguiſhed from it.

[2. Annual. A ſpan high, and brachiate. Leaves lanceolate-ovate, roughiſh, with one or two teeth; the upper ones narrower. Whorls of flowers the whole length of the plant. Bractes two on each ſide, larger than the flowers, beſides other minute ones. Calyx rough; the upper lip three-cleft and acuminate; the lower ſetaceous. Corolla white, with a violet-coloured throat; the upper lip ſcarcely emarginate [e]. It has a ſtrong ſcent, and an infuſion of it is uſed in North America, by perſons who have taken cold, or have pains in their limbs [f].

Native of North America, in dry places; flowering with us in auguſt. Introduced 1777, by Monſ. Thouin [g].

3. Annual. It has the air of the foregoing. Stem erect, a ſpan in height; with a few, ſimple, ſhort branches. Leaves obtuſe, ſmooth, ſtriated underneath. Whorls of flowers the whole length of the ſtem. Native of the country about Montpellier [h].

4. Stem a palm in height. Leaves ſomewhat oblong, naked. Calyxes ſmooth and even, ſtreaked. Corollas purple. Anthers black. Native of Siberia [i].

PROPAGATION AND CULTURE.

Theſe plants are all hardy, and may be propagated from ſeeds, which they ſometimes produce here. The firſt ſort may alſo be increaſed by planting cuttings in the ſpring, in the ſame manner as is practiſed for Mint; they will take root freely, and if they are planted in a moiſt ſoil will thrive exceedingly.

CUNNINGHAMIA. (

Lin. gen. Schreb. n. 1720. Malanea *Aubl. t.* 41. *Juſſ.* 203. Antirrhea *Commers?* *Juſſ.* 204.
Claſſ. 4. 1. Tetrandria Monogynia.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, four-toothed, very ſmall, permanent.
Cor. one-petalled: *tube* ſhort: border four-cleft, acute. *Nectary,* a rim ſurrounding the baſe of the ſtyle.
Stam. *Filaments* four, the ſame length with the border of the corolla, inſerted into the throat. *Anthers* roundiſh.
Pist. *Germ* roundiſh, inferior. *Style* filiform, bifid. *Stigmas* obtuſe.
Per. *Berry* ovate, crowned, one-celled.
Seed ſingle, ovate, two-celled; with oblong kernels.

ESSENTIAL CHARACTER.

Cal. very ſmall, four-toothed. *Cor.* four-cleft, with a ſhort tube. *Berry* crowned, with a two-celled, two-ſeeded nut.

SPECIES.

1. Cunninghamia ſarmentoſa.

DESCRIPTION, &c.

This, which is the only ſpecies known, is a ſort of ramping ſhrub, with a ſtem about ſix feet high, and four or five inches in diameter. The bark is reddiſh, wrinkled, and cloven: the wood is whitiſh: as the ſhrub grows, it puſhes out towards right and left long twiggy branches, which apply themſelves to the trunks of large trees, and inſenſibly climb to their tops, where they ſpread themſelves by puſhing forth a conſiderable number of long twiggy branches, many of which hang pendant to within ſix or eight feet of the ground. Theſe branches are knotty, covered with a reddiſh down, and bear at each knot a pair of oppoſite leaves, diſpoſed croſſwiſe: they are entire, wrinkled, oval, green above, beneath reddiſh and downy. The border of theſe leaves is often a little rolled inwards: the nerves are prominent: the footſtalk ſhort. At the baſe of the leaves on each ſide is a large weak ſtipule, which is downy, and ſoon falls off: the largeſt leaves are about four inches and a half long, and about three broad. The flowers, which are ſmall, grow in ſpikes, proceeding from the boſoms of the leaves towards the extremities of the twigs: their colour is blueiſh; the calyx reddiſh. This ſhrub is found on trees which grow near the crique de Galibis.

CUNONIA. (*From Joh. Chriſt. Cuno of Amſterdam, who deſcribed his own garden in Dutch verſe* 1750.)
Lin. gen. n. 556. *Reich.* 605. *Schreb.* 761. *Juſſ.* 310. Ooſterdykia. *Burm. afr. t.* 96.
Claſſ. 10. 2. Decandria Digynia.
Nat. order of *Saxifragæ.* Juſſieu.

GENERIC CHARACTER.

Cal. *Perianth* five-leaved, very ſmall: *leaflets* ovate, concave, acute.
Cor. *Petals* five, obovate, ſpreading, ſeſſile.
Stam. *Filaments* ten, ſubulate, the length of the corolla. *Anthers* roundiſh, twin.
Pist. *Germ* conic. *Styles* two, ſubulate, longer than the corolla. *Stigmas* obtuſe.
Per. *Capſule* oblong, acuminate, two-celled.
Seeds very many, roundiſh.

ESSENTIAL CHARACTER.

Cor. five-petalled. *Cal.* five-leaved. *Capſ.* two-celled, acuminate, many-ſeeded. *Styles* longer than the flower.

SPECIES.

1. Cunonia capenſis.
Lin. ſpec. 569. *ſyſt.* 410. *Reich.* 2. 305. *Burm. afr.* 259. *t.* 96. *Pluk. alm. t.* 191. *f.* 4.

DESCRIPTION, &c.

A ſhrub. Leaves oppoſite, pinnate, with an odd leaflet, ſeſſile, and not longer than the reſt; leaflets often ſeven, lanceolate, ſmooth, ſerrate. Glands ſpatule-form, axillary, petioled. Racemes terminating, in pairs, ſimple, with many one-flowered ſcattered pedicels ſpringing from one point. Native of the Cape of Good Hope [a].

Cunonia. See *Antholyza.*

Cupameni. See *Acalypha.*

CUPANIA. (*So named from Franceſco Cupani of Sicily, a Franciſcan monk: author of* Plantæ Siculæ, 1692; *and* Hortus Catholicus, 1696.)
Lin. gen. n. 279. *Reich.* 1182. *Schreb.* 645. *Plum.* 19. *Juſſ.* 249. *Gærtn. t.* 177. *Swartz obſ.* 364. *prodr.* 61. Trigonis. *Jacqu. amer.* 102. Molinæa *Commers. Juſſ.* 248.
Claſſ. 8. 1. Octandria Monogynia: or Polygamia Monoecia.
Nat. order of *Tribilatæ.* *Sapindi* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* five-leaved, inferior: *leaflets* oblong, erect, (ovate, acuminate, concave. *Sw.*)
Cor. *Petals* five, cowled at top, upright, (clawed, ciliate. *Sw.*) (*Nectary,* a fleſhy ring ſurrounding the germ and ſtamens. *Sw.*)
Stam. *Filaments* eight, capillary, longer than the calyx, erect, (from the baſe of the corolla, broader at

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[d] Hort. kew.
[e] Linn. ſpec.
[f] Kalm.
[g] Hort. kew.
[h] Linn. ſpec.
[i] Linn. ſuppl.
[a] Linn. ſpec.

bottom, villoſe, the ſame length with the petals. *Sw.*) *Anthers* incumbent, (oblong. *Sw.*)

Pist. *Germ* ovate, (roundiſh, three-cornered. *Sw.*) *Style* ſhort, trifid (at the tip, ſubulate, the length of the ſtamens. *Sw.*) *Stigmas* blunt, (ſmall, almoſt upright. *Sw.*)

Per. *Capſule* coriaceous, turbinate-ovate, three-lobed, (obtuſely three-cornered, large. *Sw.*) three-celled, three-valved.

Seed ſolitary, (two in each cell. *Plum.*) roundiſh, (ſpherical or oblong. *Sw.*): with a bell-ſhaped, crenate *aril* embracing the ſeed like a calyx; (coloured, faſtened to the ſeed above the middle. *Sw.*)

Obs. *Many of the flowers are abortive.*

ESSENTIAL CHARACTER.

Cal. five-leaved. *Pet.* five, cowled at the top. *Style* trifid. *Capſ.* three-celled. *Seeds* ſolitary, arilled.

SPECIES.

1. Cupania tomentoſa.
   Swartz prodr. 61.
   Trigonis tomentoſa. *Jacqu. amer.* 102. 1.
   Leaves pinnate obovate retuſe, ferruginous-tomentoſe underneath.
2. Cupania glabra.
   Swartz prodr. 61. *Brown. jam.* 178. *Plum. gen.* 45. *ic.* 110.
   C. americana. *Lin. ſpec.* 290. *ſyſt.* 864. *Reich.* 4. 190. *Gærtn. fruct.* 2. 469.
   Leaves pinnate ovate obtuſe crenate ſmooth.
3. Cupania ſaponarioides.
   Swartz prodr. 62.
   Leaves pinnate oblong entire, rugged underneath.

DESCRIPTIONS, &c.

1. Jacquin deſcribes his Trigonis as a ſmall upright tree, twelve feet in height. The younger branches and ribs of the leaves are ſlightly tomentoſe. Leaves alternate, half a foot long: leaflets uſually three pairs, without an odd one, oblong, attenuated at the baſe, emarginate, ſerrate, ſmooth on the upper, tomentoſe on the lower ſurface, alternate, the outer ones largeſt, and frequently half a foot in length longer than the rib. Racemes ſimple, erect, axillary, ſeven inches long; the pedicels ſhort. Flowers ſmall, numerous, with yellowiſh petals, in the ſhape of an iſoſceles triangle inverted, whence the name Trigonis. Native of Hiſpaniola in woods.

2. This ſhrubby tree is common in the lower hills of Jamaica, where it is called Loblolly-tree. It riſes to the height of twelve or fourteen feet. The leaves are large, and the wood ſoft and uſeleſs [b].

Capſule of a duſky ferruginous colour, opening into three parts at the tip, ſcarcely to half its length, and quite entire at bottom: the ſutures of the valves towards the top have a narrow groove, but the ſides have a deep one, to which the partitions correſpond within. Seeds ſolitary, brown: aril incomplete, ſpongy-membranaceous, of a dirty white colour, funnel-ſhaped; with a ſolid beak, but the cup involving the ſeed half way, and ending in a repand toothleſs margin [c]. The preceding ſpecies has a ſilky white fruit, and two ſeeds in each cell, according to Gærtner; who doubts, however, whether theſe be really diſtinct.

3. Native of the Weſt-Indies [d].

Cuphea. See *Lythrum.*

Cupi. See *Rondeletia.*

Cupresso-pinulus. See *Brunia.*]

CUPRESSUS. (Cupreſſus *of Pliny.* Cypariſſus *of Virgil.* Κυπαριττος *of Theophraſtus.* Κυπαρισσος *of Dioſcorides from* κυω *pario, and* ϖαρισος *æqualis, from the regularity of its branches.*—Κυει ϖαρισους η Κυπαρισσος κλαδους. *Euſtathius.*)

Lin. gen. n. 1079. *Reich.* 1177. *Schreb.* 1458. *Gærtn. t.* 91. *Tourn.* 358. *Juſſ.* 413.

Claſſ. 21. 9. Monoecia Monadelphia.

Nat. order of *Coniferæ.*

GENERIC CHARACTER.

* Male flowers diſpoſed in an ovate ament.

Cal. *Ament common* ovate, compoſed of ſcattered flowers; conſiſting of

Single-flowered *ſcales*, roundiſh, acuminate on their fore-part, peltate, oppoſite, about twenty in number.

Cor. none.

Stam. *Filaments* none: the office of them is borne by the calycine ſcale, to which on the lower part grow four *anthers.*

* *Female* flowers heaped into a roundiſh cone on the ſame plant.

Cal. *Strobile common* roundiſh, compoſed of from eight to ten florets, conſiſting of

Single-flowered *ſcales*, which are oppoſite, ovate, convex beneath, gaping.

Cor. none.

Pist. *Germ* ſcarcely evident. Numerous points appear within each calycine ſcale; are they germs without ſtyles, each with a ſimple ſtigma? ſubtruncate, concave at the tip.

Per. none. *Strobile*-globoſe, ſhut, gaping with orbiculate ſcales, which are angular and peltate beneath.

Seeds ſeveral, oblong, angular, ſubulate, ſmall.

ESSENTIAL CHARACTER.

Male. *Cal.* Scale of an ament. *Cor.* none. *Anthers* four, ſeſſile, without filaments.

Fem. *Cal.* of a ſtrobile: ſcale one-flowered. *Cor.* none. *Styles?* concave dots. *Nut* angular.

SPECIES.

1. Cupreſſus ſempervirens. *Evergreen Cypreſs.*
   Lin. ſpec. 1422. *Reich.* 4. 179. *mat. med.* 206. *hort. cliff.* 449. *upſ.* 288. *Gouan. monſp.* 495. *Scop. carn. n.* 1199. *Gærtn. fruct.* 2. 64. *Lour. cochinch.* 580. *Pallas roſs.* 2. 11. *t.* 53.
   Cupreſſus. *Bauh. pin.* 488. *Cam. epit.* 52. *Raii hiſt.* 1406. *Ger.* 1185. *emac.* 1367. *Beſl. eyſt. æſtiv. frut. t.* 1. *f.* 1. *Blackw. herb. t.* 127.
   α. C. ſempervirens. *Mill. dict. n.* 1.
   C. ſtricta. *Upright Cypreſs tree. Ait. hort. kew.* 372. 1. α.
   β. C. horizontalis. *Spreading Cypreſs tree.*
   Mill. dict. n. 2. *Hort. kew.* 1. β.
   Leaves imbricate, fronds quadrangular.
2. Cupreſſus diſticha. *Deciduous Cypreſs tree.*
   Lin. ſpec. 1422. *Reich.* 4. 180. *hort. cliff.* 499. *upſ.* 289. *Gron. virg.* 153.
   C. americana. *Cateſb. car.* 1. *t.* 11. *Park. theat.* 1477. 2.
   C. virginiana. *Raii hiſt.* 1408.—fol. acaciæ deciduis. *Comm. hort.* 1. 113. *t.* 59. *Pluk. alm. t.* 85. *f.* 6.
   α. C. patens. *Common deciduous Cypreſs.*
   Ait. hort. kew. 372. 2. α.
   β. C. nutans. *Long-leaved deciduous Cypreſs.*
   Ait. hort. kew. 2. β.
   Leaves diſtich, ſpreading.
3. Cupreſſus thyoides. *White Cedar*, or *Arbor vitæ-leaved Cypreſs.*
   Lin. ſpec. 1422. *Reich.* 4. 180. *Kalm. itin.* 2. 175. & 3. 114. *edit. engl.* 2. 174. *Lour. cochinch.* 580.
   C. nana marina, fructu cæruleo parvo. *Pluk. mant. t.* 345. *f.* 1.
   Leaves imbricate, fronds ancipital.
4. Cupreſſus juniperoides. *African* or *Cape Cypreſs.*
   Lin. ſpec. 1422. *Reich.* 4. 180.
   C. africana. *Mill. dict. n.* 6.
   Leaves oppoſite decuſſated ſubulate patulous.
5. Cupreſſus pendula. *Portugal Cypreſs.*
   L'Herit. ſtirp. nov. 15. *t.* 8. *Ait. hort. kew.* 3. 373. an *Thunb. jap.* 265? *Lin. ſyſt.* 861?
   C. luſitanica. *Mill. dict. n.* 3.—patula, fr. minore. *Tourn. inſt.* 587. *Duham. arb. n.* 2.
   Leaves imbricate glanduloſe, fronds quadrangular glaucous, branches hanging down.

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[b] Browne.

[c] Gærtner.

[d] Swartz.

[6. Cupreſſus japonica. *Japan Cypreſs.*
Lin. ſyſt. 861. *Thunb. jap.* 265. *Lin. ſuppl.* 421. *Gærtn. fruct.* 2. 64.
Leaves in four rows, ſickled compreſſed furrowed decurrent.

7. Cupreſſus columnaris.
Forſt. flor. auſtr. n. 351.
Leaves imbricate ſubulate furrowed; ſtrobiles cylindric elongated.

DESCRIPTIONS, *&c.*

1. Stem upright, with many round branches, either growing upright (α), or ſpreading abroad (β); ſtrigoſe and toothed with the rudiments of leaves. Fronds dichotomous, ſubquadrangular; leaflets alternately oppoſite, decurrent, ſubcarinate, the older ones diſtant and mucronate, the younger cloſely imbricate. Fruit globular or ſomewhat ovate, on the ſides, or at the ends of the branches, when unripe dark green. It is a cone or ſtrobile, called by Varro *galbulus*, and is compoſed of large, angular, peltate, corky ſcales, ſlightly convex on the outſide, ſtreaked in rays, and mucronate in the centre, becoming woody, and ſeparating when ripe, on the inſide ending in a thick angular peduncle, to the extremity of which four little nuts adhere, which are bony, obovate, compreſſed, or irregularly angular, covered with a thin membranaceous ſkin of a dun colour, and produced into a very narrow rim ſurrounding the nut; it is one-celled, valveleſs, and is eaſily cut with a knife. Seed linear-oblong, ſubcolumnar, bay-coloured[a].

Native of the Levant, Candia, Rhodes, Malta, &c.; Carinthia; Apulia, where Dr. Symonds informs us it is very frequent, and that he ſaw trees thirty feet high on monte Gargano; in ſome parts of the Ruſſian empire; in China, and probably in many provinces of Aſia.

We learn from Turner that it was cultivated here in Sion garden, in 1551[b]. Gerarde alſo mentions its growing at Sion, Greenwich, and at Hampſtead in the garden of Maſter Waide, one of the Clerks of her Majeſty's Privy Council.

It is ſaid that there are ſtill growing in the garden of the Palace of Generaliſe at Grenada, ſeveral ſuperb and lofty Cypreſſes, which were large trees in the reign of Andeli, the laſt Mooriſh King, three centuries ago. Theſe trees are ſtill called *Los Cypreſſes de la Regna Sultana*, from the Princeſs having been falſely accuſed of committing adultery under them with *Abencerrage*[c]. The Cypreſs will live to a great age, if what Pliny ſays[d] be true, that there were in his time at Rome trees more ancient than the city itſelf. Modern Rome boaſts ſome very fine Cypreſſes by the palaces and in the gardens of ſome of the villas, though not of ſuch high antiquity; and no tree blends ſo well as this with ſtone buildings.

Mr. Miller diſtinguiſhes ſpecifically the upright from the ſpreading Cypreſs. According to his account,] the firſt of theſe trees is very common in moſt of the old gardens in England, but at preſent is not ſo much in requeſt as formerly, though it is not without its advantages; nor ſhould it be entirely rejected, although many perſons are of that opinion; for it ſerves to add to the beauty of wilderneſſes, or clumps of Evergreens; and where they are properly diſpoſed, they have their beauties. It was formerly planted in borders of pleaſure-gardens, and kept ſhorn into a pyramidal or conic form; and ſome people, believing them ſubject to be killed if they cut them, tied them up with cords into a pyramidal figure, which form they are naturally diſpoſed to grow in; but this winding them about, prevented the air from entering the inward parts of the branches, ſo that the leaves decayed, and became unſightly, and greatly retarded their growth. And thoſe which are ſheared, if the operation is not performed in the ſpring, or early in the ſummer, are very ſubject to be injured by ſharp winds and cutting froſts in winter. Wherefore, upon the whole, I think it much better to ſuffer them to grow wild as they are naturally diſpoſed, planting them only amongſt other Evergreen Trees, where, by the darkneſs of their green leaves, together with their waving heads, they will greatly add to the variety.

The ſecond is by far the largeſt growing tree, and is the moſt common timber in ſome parts of the Levant. This, if planted upon a warm, ſandy, gravelly ſoil, will proſper wonderfully; and though the plants of this ſort are not ſo finely ſhaped as thoſe of the firſt, yet they greatly recompenſe for that defect by their vigorous growth and ſtrength, in reſiſting all weathers. This tree is very proper to intermix with Evergreens of a ſecond ſize next to Pines and Firs, to form clumps; in which claſs it will keep pace with the trees of the ſame line, and be very handſome. Beſides, the wood of this tree is very valuable, when grown to a ſize fit for planks, which I am convinced it will do in as ſhort a ſpace as Oaks; therefore, why ſhould not this be cultivated for that purpoſe, ſince there are many places in England where the ſoil is of a ſandy or gravelly nature, and ſeldom produces any thing worth cultivating? Now, in ſuch places theſe trees will thrive wonderfully, and greatly add to the pleaſure of the owner, while growing, and afterwards render as much profit to his ſucceſſors, as perhaps the beſt plantation of Oaks; eſpecially ſhould the timber prove as good here as in the iſlands of the Archipelago, which I ſee no reaſon to doubt of; we find it was ſo gainful a commodity to the iſland of Candia, that the plantations were called *dos filiæ*, the felling of one of them being reckoned a daughter's portion.

[The march and april winds, ſays Mr. Evelyn, in 1663 and 1665, accompanied with cruel froſts and cold blaſts for more than two months, did not, amongſt near a thouſand Cypreſſes growing in my garden, kill above three or four, which had been cut the latter end of october. As for the froſt of thoſe winters, than which, I believe, there was never known a more cruel and deadly piercing one ſince England had a name, it did not touch a Cypreſs of mine, till it joined forces with that deſtructive wind.

Notwithſtanding the above recommendation of Miller, and the account of its hardineſs by Evelyn, the Cypreſs has never been planted in any quantity among us, evidently becauſe it cannot reſiſt the attacks of our winter froſts and ſpring blaſts.]

The timber of this tree is ſaid to reſiſt the worm, moth, and all putrefaction, and is ſaid to laſt many hundred years. The doors of St. Peter's church at Rome were framed of this material, which laſted from Conſtantine to Pope Eugenius IVth's time, which was eleven hundred years, and were then found and entire, when the Pope changed them for gates of braſs. The coffins were made of this material, in which Thucydides tells us the Athenians uſed to bury their heroes; and the mummy cheſts, brought with thoſe condited bodies out of Egypt, are many of them of this wood.

This tree is recommended for the improvement of the air, and a ſpecific for the lungs, as ſending forth great quantities of aromatic and balſamic ſcents; wherefore many of the antient phyſicians of the Eaſtern countries uſed to ſend their patients, who were troubled with weak lungs, to the iſland of Candia, which at that time abounded with theſe trees. [However that may be, the Cypreſs is valuable on account of its wood, which is of a duſky or browniſh red colour, has a ſweet ſmell, and on account of its hardneſs is fit for a variety of purpoſes. It is fit, ſays Evelyn, for cheſts and other domeſtic furniture; harps and other muſical inſtruments, being a ſonorous wood; for ſtakes to vines, pales, rails and planks, of which there were at Venice above four feet in breadth. In Crete and Malta it is uſed in building.

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[a] Pallas, Gærtner.
[b] Hort. kew.
[c] Townſ. travels.
[d] B. 16. ch. 44.

The Cypreſs among the ancients was ſacred to Pluto and Proſerpine, and was uſed at funerals, eſpecially of perſons of faſhion:

> “ Et non plebeios luctus teſtata cupreſſus.” *Lucan.*

It was placed in front of the houſe, or in the veſtibule, that no perſon who was to perform any ſacred rites might enter a place polluted with a dead body: and the reaſon aſſigned for its uſe on this melancholy occaſion was, that the Cypreſs when once cut down never ſprings up again. It would be an improper emblem, therefore, in a Chriſtian country. The uſe of evergreens at funerals is yet not uncommon among us; but they are ſuppoſed to be ſignificant of immortality, at the ſame time that their balſamic ſcent guards the attendants againſt the ill ſmells and infection that may be apprehended from a putrid body.

On account of its durability Plato would have the laws and ſacred rites inſcribed on Cypreſs tablets: and Pliny relates (16. 40.) that the ſtatue of Jupiter in the Capitol, made of this wood in the year of Rome 661, was found in his time.]

2. The ſecond ſort is a native of America, where it grows in watery places, and riſes to a prodigious height, and is of a wonderful bulk. I have been informed that there are trees of this kind in America which are upwards of ſeventy feet high, and ſeveral fathoms in circumference, which trees grow conſtantly in the water; therefore they may probably be of ſingular advantage to plant in ſuch ſwampy or wet ſoils where few other trees will grow, eſpecially of the reſinous kind. That they are very hardy in reſpect to cold, is evident from ſome few trees of this kind which were formerly planted in England; particularly one in the gardens of John Tradeſcant, at South Lambeth, near Vauxhall, which is upwards of thirty feet high, and of a conſiderable bulk; though in a common yard, where no care is taken of it, but, on the contrary, many hooks are driven into the trunk to faſten cords thereto for drying cloaths, yet the tree is in great health and vigour, but has not produced any fruit, which may be occaſioned for want of moiſture: for we often ſee many aquatic plants growing upon a drier ſoil, but are ſeldom ſo productive of either flowers or fruit as thoſe which grow in the water.

[John Tradeſcant, ſenr. introduced this tree from Virginia, before the year 1640[e]. His tree at South Lambeth has long been deſtroyed, together with all the other trees and plants in his curious garden there.]

Another large tree of this ſort in the gardens of the late Sir Abraham Janſſen, Bart. at Wimbledon in Surry, produced great quantities of cones for ſome years, which in favourable ſeaſons came to maturity, and the ſeeds were as good as thoſe which have been brought from America. This tree was tranſplanted when it was very large, which ſtinted its growth; and this may have occaſioned its fruitfulneſs, for it made very little progreſs in its growth after it was removed. [This tree in ſummer reſembles an evergreen; the leaves have a pleaſing effect, appearing like ſome ſorts of Acacia[f].

3. This grows to a conſiderable ſize in North America, of which it is a native. With us it ſeldom riſes much higher than fifteen feet; when raiſed from cuttings it has rather the appearance of a ſhrub, and is not above nine or ten feet high. Loureiro informs us, that in China and Cochinchina, where it alſo grows naturally, it is only about eight feet in height. The branches are numerous, and ſtand two ways; the tree naturally forms itſelf into a regular head: the leaves are evergreen, flat, ſharp, very ſhort, imbricated, and reſemble thoſe of the *Arbor Vitæ*; they are ſmall, and of a browner green than the Common Cypreſs.] The fruit is blue, and no larger than the berry of the Juniper, from which it is not eaſily diſtinguiſhed at a little diſtance; but it is a perfect cone or ſtrobile, having ſeveral nuts like that of the common Cypreſs.

[It is abundant in the ſwamps of New Jerſey, and ſome parts of Pennſylvania and New York; but not to the north of Goſhen, lat. 41° 25′. The number, however, has been greatly reduced, and as this tree requires to be of eighty years growth from the ſeed before it can be uſed for timber, poſterity will probably find the want of this uſeful tree in America. It is uſed for fencing, and even for poſts, but it does not laſt in the ground ſo well as the red Cedar (Juniperus virginiana); it makes good canoes; hoops and other cooper's ware. Many houſes are built of it; but it is in the higheſt eſteem for ſhingles; and for that purpoſe great quantities are ſent to the town of New York. It is alſo exported to the Weſt-Indies both for ſhingles and pipe ſtaves[g].]

This tree, planted in a ſtrong moiſt ſoil, may become profitable for timber, and growing in a climate much colder than England, there is no hazard of its ſucceeding in the open air here. However this may be, being an evergreen of regular growth, and thriving in cold ſituations and a moiſt ſoil not adapted to trees of this family, it is a great ornament to large plantations. [It was introduced among us in 1736, by Peter Collinſon, Eſq.[h].]

4. The young plants raiſed here from ſeeds have looſe ſpreading branches, cloſely beſet with narrow ſtraight leaves, alternately oppoſite, near an inch long, of a light green colour, and continuing in verdure all the year. The cones are black when ripe. Mr. Miller had the ſeeds from the Cape of Good Hope, where it grows naturally, before 1756; in which year he had two plants growing in the full ground, which were killed that winter.

5. [This is a ſmall tree, with a glaucous appearance. The leaves are glanduloſe, but the glands are leſs apparent than in *C. thyoides*. The flowers are like thoſe of the firſt ſpecies; and are diſtinct from thoſe of the third, which has the ſcales of the ament pedicelled, and not peltate, as in this; two anthers (not four) under each ſcale; and two ſtigmas to each germ; whereas in this the ſtigmas are ſimple[i].]

It grows to be a large timber tree in Portugal, but in England it is not above fifteen feet high; the branches extend horizontally to a great diſtance every way, quite from the ground; they grow without much order, and the tree has a very different appearance from all the other ſorts.

[Thunberg deſcribes C. pendula of Japan to be a tree of a man's height or more, erect and ſmooth. The branches alternate, lax, leafleſs, dividing into many branchlets, which are dichotomous, filiform, long, ſpreading, lax, pendulous, covered with decuſſated, imbricate, ovate, acute leaves, ſpreading a little at the end, and very ſhort. He adds that this handſome, ſingular tree is eaſily diſtinguiſhed from all the evergreens of this order, by its abundance of very long, dichotomous, pendent branchlets.]

It is at preſent pretty rare in the Engliſh gardens, though there have been many plants raiſed here; but this ſort is not quite ſo hardy, I fear, as the common Cypreſs, for the plants are frequently killed, or greatly injured in ſevere winters; and in the hard froſt in 1740, there was a large tree of this kind entirely killed in the gardens of his Grace the Duke of Richmond, at Goodwood in Suſſex, which had been growing there ſeveral years; and in the year 1762, many large trees were killed. There are great plenty of theſe trees growing at a place called Buſaco, near Coimbra in Portugal, where this tree is called the Cedar of Buſaco; and there it grows to be a timber tree, ſo that from thence the ſeeds may be eaſily procured.

This tree grows naturally at Goa, whence it was firſt brought to Portugal, where it has ſucceeded, and been propagated; formerly there were ſome trees of this ſort growing in the Biſhop of London's garden at Fulham, where it paſſed under the title of Cedar of Goa, by which name it was ſent thence to the Leyden garden.

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[e] Hort. kew.

[f] Hunter in Evelyn.

[g] Kalm.

[h] Hort. kew.

[i] L'Heritier.

[It appears from Mr. Ray's letters (171) that this was cultivated here in 1683[k].

6. A very lofty ſtraight tree, with a trunk the thickneſs of the human thigh or more. Leaves in three or four rows, decurrent by the keel, ſubulate, bent at the end like a ſickle, marked with four furrows, ſpreading, ſmooth. Male ſpikes terminating, very many, ovate, obtuſe, ſmooth. Female ſtrobiles globular, few, ſolitary, on the lower branchlets. Scales peltate; the pelta covered at the back with a lanceolate ſcale, having ſix ſubulate teeth on the inner edge.—The wood is very ſoft, and is much uſed for cabinets and other furniture, that are varniſhed, or japanned, as we call it[l].

7. Native of New Caledonia and Norfolk iſland[m].]

PROPAGATION AND CULTURE.

Theſe trees are all propagated from ſeeds, which ſhould be ſown early in the ſpring on a bed of warm, dry, ſandy earth, which muſt be levelled very ſmooth; then ſow the ſeeds thereon pretty thick, ſifting the ſame light earth over them half an inch thick. If the weather ſhould prove very warm and dry, it will be proper to ſhade the bed from the ſun in the day-time, and water the bed, which muſt be done very carefully, obſerving not to waſh the ſeeds out of the ground. In about two months time, if your ſeeds are good, the young plants will appear above ground, which muſt be conſtantly kept clean from weeds, and in very dry weather ſhould be often refreſhed with water; but this ſhould be done with great caution, leſt you beat theſe tender rooted plants out of the ground. If the ſeeds are ſown upon a moderate hot-bed, and the beds covered with mats, they will come up much ſooner, and with greater certainty, than when they are ſown in the cold ground.

In this bed the young plants may remain two years, by which time they will have ſtrength enough to be tranſplanted into a nurſery; but while the plants are young, they are tender, and ſhould be covered in ſevere froſt with mats.

The beſt ſeaſon for removing them is in the beginning of april, when the drying eaſterly winds of march are over, and, if poſſible, chooſe a cloudy day, when it is inclinable to rain; and in taking them out of the ſeed-bed, preſerve the roots as entire as poſſible, and, if you can, a ball of earth to each plant. The ſoil in which theſe trees ſhould be planted, as I before ſaid, ſhould be, for the two firſt ſorts, a warm ſand or gravel, which, when you have prepared, by carefully digging and cleanſing from all noxious weeds, you muſt lay level. Then draw the lines where the trees are to be planted at three feet aſunder, and plant the trees at eighteen inches diſtance in the rows, obſerving to cloſe the earth well to their roots, as alſo to lay a little mulch upon the ſurface of the ground about their ſtems; and water them well to ſettle the earth to their roots, which ſhould be repeated twice a week, until the plants have taken freſh root.

Theſe plants may remain in the nurſery three or four years, according to the progreſs they make, or till your ground is ready where they are to be planted: but if you intend to let them remain longer, you ſhould take up every other tree in the rows, and tranſplant out; for otherwiſe their roots will be matted together, ſo that it will render it difficult to tranſplant them, as alſo endanger the future growth of the trees. The plants ſhould by no means be let ſtand too long in the nurſery before they are tranſplanted out for good, becauſe the roots do not mat together ſo cloſely as thoſe of many other ſorts of evergreen trees, whereby they may be taken up with good balls of earth to their roots; but the roots of the Cypreſs being apt to extend out in length, it is one of the moſt difficult trees to remove when grown large; therefore moſt curious perſons chooſe to put the young plants into ſmall pots, when they firſt take them out of the ſeed-bed, and ſo train them up in pots two or three years, until they are fit to plant out where they are to ſtand for good, and, by this management, they are ſecure of all the plants; for theſe may be ſhaken out of the pots at any time of the year without danger, and planted with their whole ball of earth, which is likewiſe a great advantage. When they are planted out for good, if they are deſigned for timber, they ſhould be planted about twelve or fourteen feet diſtance every way, and be very careful in removing thoſe in the full ground, not to ſhake the earth from their roots; to prevent which, you ſhould open the ground about each tree, cutting off all long roots, then working under the ball of earth, cut the downright roots off; and after having pared off all the earth from the upper part of the ball, as alſo reduced the bulk of it, ſo that its weight may not be too great for the fibres to ſupport, they may be carried upon a hand-barrow by two perſons to the place where they are to be planted; but if they are to be carried to a diſtant place, they ſhould either be put into baſkets, or their roots cloſely matted up. When they are planted, you muſt ſettle the earth cloſe to their roots as before, laying a little mulch upon the ſurface of the ground about their ſtems, to prevent the ſun and wind from entering the earth to dry their fibres; and water them well, to ſettle the ground to their roots, which muſt alſo be repeated, if the weather proves dry, until they have taken root, after which time they will require little more care than to keep them clear from weeds.

The upright Cypreſs (1 α) which is the moſt common ſort in England, ſeldom produces good ſeeds in this country; it is therefore the beſt way to have the cones brought over entire from the ſouth of France and Italy, where they ripen perfectly well, and take the ſeeds out juſt before you ſow them, for they will keep much better in the cones than if they are taken out. The method to get the ſeeds out is to expoſe the cones to a gentle heat, which will cauſe them to open, and eaſily emit their ſeeds.

[Dr. Hunter recommends the ground in which the ſeeds are to be ſown to be well worked, turned over, and mellowed by froſt; and if the ſoil be not naturally ſandy, to work in ſome drift ſand all over the bed ſix inches deep: to ſow the ſeeds moderately thin, becauſe if they are ſown too thick, the roots get matted together, ſo that the plants cannot be removed out of the ſeed-bed into the nurſery without great danger. The beginning of march is the beſt time for this work.

Mr. Boutcher ſays, that if in the beginning of winter ſome ſaw-duſt is ſifted over them, it will much contribute to their preſervation in caſe of ſevere weather.

The ſpring following after ſowing, the plants, if well managed, will be ſix or ſeven inches high, and ſhould be removed and planted in rows eighteen inches aſunder, and eight or nine inches plant from plant: here they ſhould remain no more than one year, when they ought to be upwards of a foot high. The ſecond ſpring plant them in the common nurſery, in rows three feet aſunder, and eighteen inches in the row. Having ſtood in this nurſery two years, they may be removed to the place where they are to remain.

As it is no uncommon thing for a hard winter to deſtroy whole beds of theſe plants, it is neceſſary, ſays Mr. Boutcher, to provide againſt ſuch a misfortune, by ſowing ſome ſeeds in pots; which muſt be placed in a ſheltered ſituation, ſo as to receive the morning ſun till ten or eleven o'clock; keep them moderately watered, and in october remove the pots under a frame. The ſucceeding ſpring ſhake them out of theſe pots, and plant them in others of fourteen or ſixteen inches diameter, each of which will contain from ſixteen to twenty plants: place them in the ſhade till in a free-growing ſtate, and in winter remove them under a frame.]

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[k] Hort. kew.

[l] Thunberg.

[m] Forſter.

1 β. Mr. Miller affirms that the Spreading Cypreſs is rare in England, and that what has paſſed under this title here is only a variety of the common ſort, the branches of which grow much looſer; but that the true ſpreading Cypreſs extends its branches horizontally from the firſt year, and continues to extend them to a great length as the tree advances. He affirms that it is certainly a diſtinct ſpecies, grows to a much larger ſize, and that there are ſome of conſiderable ſtature in Italy.

2. The cones of the Virginian or deciduous Cypreſs may eaſily be procured from Virginia or Carolina. The ſeeds will riſe as eaſily as thoſe of the preceding ſort, and the tree is as hardy. It was formerly kept in pots, and houſed in winter; but with this management it did not ſuceeed ſo well as ſince it has been planted in the full ground; and I have obſerved it to thrive beſt where it has had a moiſt ſoil. Cateſby ſays, that this tree grows in places where the water commonly covers the ſurface of the ground three or four feet, ſo that it may be a very great improvement to our boggy ſoils. This tree, caſting its leaves in winter, does not ſo well ſuit with plantations of evergreens at that ſeaſon; but in ſummer it has much the appearance of an evergreen. It may alſo be propagated by cuttings, which ſhould be planted in a bed of moiſt earth in the ſpring, before they begin to ſhoot.

3. This ſort is propagated by ſeeds ſown in the ſpring in boxes or tubs filled with light freſh earth, and placed where they may enjoy the morning ſun till eleven or twelve o'clock. In dry weather they ſhould be duly watered, and conſtantly kept clear from weeds. In this ſituation they may remain till michaelmas, when they ſhould be removed to a warmer place; for the plants ſeldom appear till the following ſpring, ſo that it will be proper to place the boxes or tubs near a ſouth fence during the winter ſeaſon; leſt by being too much ſhaded, the wet ſhould rot the ſeeds. In the ſpring following, if theſe tubs or boxes are placed on a moderate hot-bed, it will bring up the plants very ſoon, and greatly forward their growth; but as the ſpring advances, they ſhould be inured to bear the open air by degrees; and in may they muſt be taken out of the hot-bed, and placed in a ſheltered ſituation, where they may enjoy the morning ſun, being careful to keep them clear from weeds, as alſo to water them duly in dry weather. The following winter it will be proper to remove the tubs near a ſouth wall or pale; for the plants being very young, are ſometimes tenderer than they will be afterward. Toward the end of march, or the beginning of april, juſt before the plants begin to ſhoot, they ſhould be carefully taken up out of the boxes; and having prepared a bed or two (according to the quantity of plants raiſed) of freſh earth in a ſheltered ſituation, the plants ſhould be planted therein in rows about eighteen inches aſunder, and about a foot diſtance plant from plant in the rows. This work ſhould be done in cloudy weather, when there is rain; for in dry weather, when eaſterly winds commonly blow at this ſeaſon, it will be very dangerous to tranſplant theſe plants; ſo that it had better be deferred a fortnight longer, till there is an alteration of the weather, than hazard the plants. When the plants are planted, they ſhould be watered to ſettle the earth to their roots; and then the ſurface of the ground ſhould be covered with mulch, to prevent the ſun and wind from penetrating to the roots of the plants; for nothing is more injurious to theſe plants, than to have their fibres dried when they are tranſplanted; therefore the plants ſhould not be taken out of the tubs till you are ready to place them in the ground, for they will not bear to lie out of the ground any time without great danger.

[In America it will not ſucceed in a dry ſoil: in a ſwampy ſoil, the branches, cut in the ſpring, will ſtrike root, and ſucceed very well.]

4. The Cape Cypreſs is too tender to thrive in the open air in England when young; but when the plants have obtained more ſtrength, it is very probable they may do well in warm ſituations. Young plants placed under a frame which had no glaſs, but only wooden ſhutters, were not injured by the cold, though the earth of the pots was frequently frozen hard. [The practice now is, to keep them in pots, and houſe them in winter till they are a yard in height. When they are committed to the open air, they muſt have a dry warm ſoil, and a well-ſheltered ſituation: nothing, however, can enſure them but the dry ſtove.]

5. This ſort may be propagated from ſeeds in the ſame manner as the common Cypreſs, and the plants ſhould be treated in the ſame manner as has been directed for them, with this difference only, that it will be proper to cover theſe plants during the two firſt winters after they are come up, eſpecially if the froſt ſhould be ſevere, which might deſtroy them, if they are expoſed to it while they are young. This ſort may alſo be propagated by cuttings, which, if planted in autumn, and ſcreened in winter, will take root; but it is generally two years before they will be rooted enough to tranſplant, nor will the plants ſo raiſed thrive ſo faſt as the ſeedlings; therefore, when the ſeeds can be obtained, that is the beſt method to propagate this tree.

[Cupressus. See *Thuja*.

CURATELLA.

Lin. gen. n. 679. *Reich.* 733. *Schreb.* 921. *Loeſl. it.* 260. *Juſſ.* 282.

Claſſ. 13. 2. Polyandria Digynia.

Nat. order of *Magnoliæ?* Juſſieu.

GENERIC CHARACTER.

Cal. *Perianth* five-leaved, rounded: *leaflets* roundiſh, concave: the fifth interior extremely like the petals.

Cor. *Petals* three or four, roundiſh, concave, very like the calyx.

Stam. *Filaments* very many, filiform, ſhorter than the corolla. *Anthers* roundiſh.

Pist. *Germ* two-parted, roundiſh. *Styles* two, filiform, erect, length of the ſtamens. *Stigmas* headed.

Per. *Capſule* two-celled, two-parted: lobes roundiſh, one-celled.

Seeds in pairs, oblong, ſhining.

ESSENTIAL CHARACTER.

Cal. five-leaved. *Pet.* four. *Styles* two. *Capſ.* two-parted: with two ſeeds in a cell.

SPECIES.

1. Curatella americana.

Lin. ſpec. 748. *Reich.* 2. 610. *Loeſl. itin.* 260.

DESCRIPTION, &c.

Stature of *Coccoloba*. Leaves alternate, ſubſeſſile, oblong[a], large, very rough. Flowers in racemes, from the axils of the leaves which have already fallen, the diviſions of the raceme having two bractes. Calyx four or five-parted, and permanent. Petals four or five. Germs two, hirſute. Capſules two, joined at the baſe, very ſmall, ſpherical, hirſute, ſplitting late into two valves[b].

Native of South America.

Curcas. See *Iatropha*.

CURCULIGO. (*From* Curculio, *one of the coleopterous inſects; the ſeed having a proceſs reſembling the roſtrum or beak of that animal.*)

Plant. coromand. 15. *t.* 13. *Gærtn. t.* 16.

Claſſ. 23. 1. Polygamia Monoecia.

GENERIC CHARACTER.

* *Hermaphrodite flowers few, below.*

Cal. none.

Cor. *Petals* ſix, oblong, ſpreading, withering.

Stam. *Filaments* ſix, very ſhort. *Anthers* linear, erect.

Pist. *Germ* ſeſſile, lanceolate. *Style* very ſhort. *Stigma* large, tapering, with a three-cleft apex.

Per. *Capſule*, when a germ, three-celled, with the rudiments of ſix or eight ſeeds in each cell: when ripe appearing one-celled.

Seeds one to four, ſhining, black, beaked.

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[a] Linn. ſpec.

[b] Juſſieu.

* *Male flowers ſeveral,* above.
Corolla and *Stamens* as above: *Piſtil* wanting.

ESSENTIAL CHARACTER.

Cal. none. *Cor.* ſix-petalled. *Filam.* ſix. *Piſt.* one. *Capſule.* *Seeds* beaked.

SPECIES.

1. Curculigo orchioides.
Plant. coromand. 14. *t.* 13. *Gærtn. fruct.* 1. 63.

DESCRIPTION, *&c.*

Root tuberous, with many fleſhy vermicular fibres. Leaves numerous, all radical, petioled, ſword-form, nerved, ſlender, with a very few ſoft white hairs on them when young, from ſix to eighteen inches long, half or three quarters of an inch broad: petiole channelled, below ſheath-form, embracing thoſe within. Raceme ſolitary, axillary, two-ranked, its apex juſt appearing above the earth. Peduncle compreſſed, clubbed, about an inch long. Bractes below remote, above nearer, ſpathe-like, pointed, decreaſing in length towards the top, ſo that their apexes are nearly horizontal, like a corymb, one-flowered. Flowers pretty large, yellow: the one or two lowermoſt hermaphrodite; above all male. Peduncle ſo long as to elevate the flower above the earth above one inch, hairy, three-ſided. When the ſeeds are ripe, their number is only from one to four, and they ſeem as if in a tranſparent, fleſhy, one-celled capſule, and are ſeparated by a ſpongy fleſhy ſubſtance.

Native of ſhady uncultivated places about Samulcotah, but by no means common. It is the Nallatady of the Telingas *.

Gærtner remarks, that this plant differs from all others in the ſingular ſtructure of the ſtyle and capſule, and the roundiſh horny proceſs from the outer and upper part of the ſeed, thickening upwards, and ſlightly incurved, ſo as to reſemble the beak of a Curculio, whence he gave it the name.

CURCŪMA. (*From the Arabic name* Curcum, *or* Hercum.)
Lin. gen. n. 6. *Reich.* 6. *Schreb.* 8. *Muſ. Cliff.* § *II.* 4. *Juſſ.* 64.
Claſſ. 1. 1. Monandria Monogynia.
Nat. order of *Scitamineæ.—Cannæ* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* ſuperior, obſcure.

Cor. Tube of the *Petal* narrow. *Border* three-parted: *diviſions* lanceolate, ſpreading, gaping more on one ſinus.

Nectary one-leafed, ovate-acuminate, larger than the diviſions of the petal, inſerted into the more open ſinus.

Stam. *Filaments* five, of which four are erect, linear, barren: one (the fifth) within the nectary, linear, petal-form, with a two-cleft tip: *Anther* adnate.

Pist. *Germ* roundiſh, inferior. *Style* length of the ſtamens. *Stigma* ſimple, hooked.

Per. *Capſule* roundiſh, three-celled, three-valved.

Seeds very many.

ESSENTIAL CHARACTER.

Stamens four barren, a fifth fertile.
Cor. four-parted. *Nect.* three-lobed. *Filament* flat. *Loureiro.*

SPECIES.

1. Curcuma rotunda. *Round-rooted Turmerick.*
Lin. ſpec. 3. *Rcich.* 5. *fl. zeyl. n.* 6. *Lour. cochinch.* 9. *Rumph. amb.* 5. *t.* 67. *Rheed. mal.* 11. *t.* 10. *Burm. zeyl.* 84.
Leaves lanceolate-ovate: lateral nerves very few.

2. Curcuma longa. *Long-rooted Turmerick.*
Lin. ſpec. 3. *Reich.* 5. *mat. med.* 35. *fl. zeyl.* 7. *Retz. obſ.* 3. *n.* 19. *Lour. cochinch.* 8. *Blackw. t.* 396. *Herm. lugdb. t.* 209. *Burm. zeyl.* 83. *Rheed. mal.* 2. *t.* 11. *Rumph. amb. t.* 64. *Woodv. med. bot.* 359. *t.* 132. *Raii hiſt.* 1204. & 1906. *Ger. emac.* 33. & 1631. *Park. theat.* 1583.
Amomum Curcuma. *Jacqu. hort.* 3. *t.* 4.
Leaves lanceolate: lateral nerves very numerous.

[3. Curcuma pallida.
Lour. cochinch. 9.
C. agreſtis. *Rumph. amb.* 5. *p.* 164.
Bulbs knotted, ſcape long, bracted.

DESCRIPTIONS, *&c.*

1. Root perennial, with a large ovate bulb, frequently as big as a gooſe's egg, covered with a thin rufeſcent pellicle, that has parallel, rooting rings, within ſolid, fleſhy, reddiſh yellow, of a bitteriſh taſte, and ſlightly aromatic ſmell.

It creeps under ground by means of little bulbs of the ſame ovate form, growing by the ſide of the maternal bulb. Stem none. Leaves annual, three feet high, upright, broad-lanceolate, bluntiſh, ſmooth, bright green, grooved, with a few oblique lines; petioles ſhort, dilated at the baſe, embracing the inner ones, and reſembling a thick ſtem [b].] From the middle of theſe ariſes the flower-ſtalk, ſupporting a looſe ſpike of flowers of a pale yellowiſh colour, incloſed in ſeveral ſpathes or ſheaths which drop off.

Native of the Eaſt-Indies, the mountains of [China, Cochinchina, &c.

Cultivated by Mr. Miller before 1759.

2. Root perennial, creeping, fleſhy, palmate, with columnar branches, and parallel rooting rings, the ſkin thin and pale, the fleſh ſaffron-coloured, with a bitteriſh taſte, and a ſmell of ſalve. Stem none. Leaves broad-lanceolate, large, quite entire, ſmooth, annual, pale green, grooved, with oblique, ſlender, frequent lines: petioles long, upright, dilated at the baſe, mutually ſupporting and embracing each other. Scape external, ſlender, nearly erect, almoſt naked, approximating to the bundle of leaves. Spike thick, ſubovate, three inches long. Flowers ſeſſile, white, with a yellow nectary, ſolitary, and incloſed within the ſcales of the ſpike. *Calyx* ſuperior, bifid; clefts oblong-ovate, erect, hid within the ſcales of the ſpike. *Corolla* one-petalled, funnel-ſhaped; tube ſlender, equal to the calyx, widening above; border four-parted, the ſegments nearly equal in length, the two lateral ones blunt, waved, and plaited, the upper one acute and bent in, the lower broader, bifid, with the ſegments rounded. Nectary large, bent in, three-lobed, with the middle lobe emarginate, faſtened at bottom to the outer ſegment of the corolla. *Filament* broad and flat, ſhort, rounded at the top, placed on the upper ſegment of the corolla: anther ſomewhat cubical, bifid, with an awl-ſhaped proceſs on each ſide. *Germ* roundiſh: ſtyle capillary, equal to the ſtamen, incloſed within the notch of the anther: ſtigma concave. *Capſule* roundiſh, ſmooth and even, three-celled, three-valved. *Seeds* round, few.—It has no barren filaments [c].

The fructification is thus deſcribed by Retzius. A ſingle ſpike comes forth from the laſt ſheaths of the leaves; it is peduncled, erect, club-ſhaped, ſquarroſe, ſcarcely a foot in length, ſhorter than the leaves, covered with imbricate, ovate, concave bractes; below the middle connected by the back, recurved, ſpreading, acute, margined, veiny-ſtreaked, whitiſh green; at the end the bractes are barren, narrower, wavy-flexuoſe, and of a paler colour. There are commonly three flowers within each bracte, ſometimes more, involucred. The involucre is two-leaved. The calyx is one-leafed, tubular, a little inflated, obtuſe, toothletted, membranaceous, ſemipellucid, divided on one ſide to the middle, half the length of the tube of the corolla, which is erect, or a little bent in, round, ſmooth, ſtiffiſh, white, above the middle bell-ſhaped, ſomewhat compreſſed, keeled at the back; border double, each three-parted. Filament ſingle, erect, lanceolate-ovate, between the two dorſal ſegments growing to the dorſal border, flattiſh, ſomewhat convex in front, marked with a line behind, half the length of the approximating ſegments, ſtiffer than they, but of the ſame colour. Germ hairy: ſtyle between the nectaries, erect, white, ſmooth, in the groove of the anther: ſtigma club-ſhaped, obtuſe, concave, four-toothed, white. Nectaries two, within the tube, fitting on the germ, erect, cylindric, half ſurrounding the ſtyle, hardly the length of the germ.

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* Plant. coromand.

[b] Loureiro.

[c] Ibid.

Native of the Eaſt Indies, China, Cochinchina, *&c.* It is cultivated by the Chineſe in their gardens, and very abundantly at Malacca. It very ſeldom produces ſeed.

Cultivated by Mr. Miller, before 1759.

Swartz joins this Curcuma with the genus Amomum.

It was much uſed formerly in cookery to give things a colour; it is ſtill uſed in the Eaſt for this purpoſe and for dyeing.

The root of this plant has had the reputation of being a powerful aperient and reſolvent. It has been commonly preſcribed in obſtructions of the liver, and other chronic complaints. The diſeaſe in which it has been thought to be moſt efficacious is the jaundice. It is however now very rarely employed in Europe. The general doſe in ſubſtance is from a ſcruple to a drachm. It tinges the urine of a deep yellow colour. In the Eaſt Turmeric is yet in high reputation. The firſt ſpecies is ſtronger, and ſeldom given there internally; externally applied as a cataplaſm, with the root of Crinum zeylanicum and the leaves of Artemiſia, it is eſteemed a ſovereign remedy in ſwellings of the abdomen ariſing from a ſuppreſſion of the menſes.

3. This is an annual plant, without any ſtem, upright, three feet high. Root perennial, horizontal, creeping, oblong, columnar, twiſted and knotty, within and without pale, fleſhy, with little ſmell or taſte. Leaves lanceolate, large, with ſeveral oblique ſlender grooves: petioles dilated at the baſe, embracing the inner ones. Scape external, eight inches long, clothed with ſhort bractes. Spike oblong, with ovate-lanceolate, looſe, reflex, reddiſh, one-flowered ſcales. Corolla yellowiſh white, four-parted, with a three-lobed nectary. Stamen one, fertile, without any barren ones. Capſule inferior, three-celled, three-valved, many-ſeeded.

Native of China about Canton, and Cochinchina.]

PROPAGATION AND CULTURE.

Theſe plants muſt be placed in the bark-ſtove. They are only propagated by parting their roots, in the ſpring, before they put out new leaves. Plant them in rich kitchen-garden earth, and keep the pots conſtantly plunged in the bark-bed. In ſummer, when the plants are in a growing ſtate, refreſh them frequently with water, but not in large quantities; and admit a large ſhare of air to them in warm weather. When the leaves are decayed they ſhould have very little wet, and ſhould be kept in a warm temperature. They uſually flower in auguſt; but ſtrong roots only produce flowers.

CURRANT. See *Ribes.*

[CURTISIA. (*From William Curtis, teacher of Botany in London; author of Flora Londinenſis, &c.*)

Ait. hort. kew. 3. 507. *Lin. gen. Schreb. n.* 1729. *p.* 792.

Claſſ. 4. 1. Tetrandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, four-parted: *parts* ovate, acute.

COR. *Petals* four, ovate, obtuſe, ſeſſile, longer than the calyx.

STAM. *Filaments* four, inſerted into the receptacle, ſubulate, ſhorter than the petals. *Anthers* ovate.

PIST. *Germ* ſuperior, ovate. *Style* ſubulate, the length of the ſtamens. *Stigma* four or five-cleft.

PER. *Drupe* ſubglobular, ſmooth.

SEED. *Nut* roundiſh, boney, four or five-celled. *Kernels* ſolitary, oblong.

ESSENTIAL CHARACTER.

Cal. four-parted. *Petals* four. *Drupe* ſuperior, roundiſh, ſucculent, with a four or five-celled nut.

SPECIES.

1. Curtiſia faginea. *Beech-leaved Curtiſia,* or *Haſſagay-tree.*
Ait. hort. kew. 1. 162. *Burm. afr.* 235. *t.* 82. (Sideroxylon.)

DESCRIPTION, *&c.*

This is one of the largeſt trees in the African woods, with very diminutive flowers. The Hottentots and Caffres make the ſhafts of their javelins or aſſagays from the wood of this tree. They always carry one or two of theſe with them, on their journies. They conſiſt of an iron ſpear hollowed out on each ſide about ſix inches long, with or without an iron ſhaft, which is ſometimes round and ſmooth, and ſometimes grooved. It is faſtened with thongs of leather to a ſlender round ſtick, five feet long, tapering towards the end, and made of this wood. With theſe lances, which they throw with great dexterity to the diſtance of a hundred paces, the Hottentots and Caffres defend themſelves, and kill buffaloes and other wild animals.

This tree is called in Dutch *Wite-elſe, Stinkhout,* and *Aſſagay-hout*[a]; in Engliſh *Haſſagay* or *Aſſagay-tree,* from its uſe among the natives of the Cape of Good Hope.

It was introduced here in 1775, by Mr. Francis Maſſon[b].

CURURU. See *Paullinia.*

CURUTU-PALA. See *Tabernæmontana.*

CUSCŪTA. (*According to Linneus, a corruption from the Greek* Κασυλας, *or* Καδυλας; *which is from the Arabic Cheſſuth* or *Chaſuth.*)

Lin. gen. n. 170. *Reich.* 182. *Schreb.* 227. *Tourn.* 422. *Gærtn.* 62. *Juſſ.* 135.

Claſſ. 4. 2. Tetrandria Digynia.

Nat. order of *Convolvuli?* Juſſieu.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, cup-form, four-cleft, obtuſe, fleſhy at the baſe.

COR. one-petalled, ovate, a little longer than the calyx: *mouth* four-cleft, obtuſe.

Nectary of four ſcales, which are linear, two-cleft, ſharp, and growing to the corolla at the baſe of the ſtamens.

STAM. *Filaments* four, ſubulate, length of the calyx. *Anthers* roundiſh.

PIST. *Germ* roundiſh. *Styles* two, erect, ſhort. *Stigmas* ſimple.

PER. fleſhy, roundiſh, two-celled, cut round, or opening horizontally.

SEEDS in pairs.

OBS. *In ſome a fifth part is added to the parts of fructification.*

ESSENTIAL CHARACTER.

Cal. four-cleft. *Cor.* one-petalled. *Capſ.* two-celled.

SPECIES.

1. Cuſcuta europæa. *Common Dodder.*
Lin. ſpec. 180. *Reich.* 352. *mat. med.* 54. *fl. ſuec. n.* 144. *Gærtn. fruct.* 1. 297. *Hudſ. angl.* 104. *With.* 165. *Sowerby engl. bot. t.* 55. *Lightf.* 1090. *Relh. cantabr. n.* 194. *Hall. helv. n.* 654. *Scop. carn. n.* 176. *Pollich pal. n.* 170. *Leers herborn. n.* 123. *Allion. pedem. n.* 308. *Krock. ſileſ. n.* 250. *Villars dauph.* 2. 311. *Fl. dan. t.* 199. *Blackw. t.* 554. *Plenck, ic. t.* 70.
Cuſcuta. *Cam. epit.* 984. *Park. theat.* 10. 2. *Raii hiſt.* 1903.—major. *Bauh. pin.* 219. *Fuchſ.* 348. *Matth.* 1279. *Trag.* 810. *Dod.* 554. *Lob. obſ.* 233. 1. *Raii ſyn.* 281.
C. ſ. Caſſutha. *Ger.* 462. *emac.* 577.
Caſſitha. *Tabern.* 901.
Caſſutha ſ. Cuſcuta. *Bauh. hiſt.* 3. 266.
Flowers conglomerate ſeſſile; corolla pitcher-ſhaped with bluntiſh ſegments; number of parts generally four.

2. Cuſcuta epithymum. *Small Dodder.*
Lin. ſpec. 180. 1. β. *Reich.* 352. 1. β. *ſyſt.* 167. 2. *With.* 166. *Relh. cant. n.* 194. β. *Krock. ſileſ. n.* 250. β. *Loefl. itin.* 216. *Fl. dan. t.* 427. *Plenck, ic. t.* 71.

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[a] Thunberg's travels.

[b] Hort. kew.

Epithymum. *Camer. epit.* 983. *Col. ecphr.* 2. *c.* 23. *Park. theat.* 10. 1.—ſ. C. minor. *Bauh. pin.* 219. *Raii hiſt.* 1904.
Flowers conglomerate; corolla bell-ſhaped deeply cloven, with acuminate ſegments: number of parts conſtantly five.

3. Cuſcuta americana. *American Dodder.*
Lin. ſpec. 180. *ſyſt.* 167. *Reich.* 353. *Jacqu. amer.* 24. *pict.* 17. *Loefl. itin.* 216. *Gron. virg.* 18. *Sloan. jam.* 1. 201. *t.* 128. *f.* 4. *Raii hiſt.* 1904. 3. *Brown. jam.* 149. 1. *Swartz obſ.* 54.
Flowers peduncled.

4. Cuſcuta lupuliformis. *Hop Dodder.*
Krock. ſileſ. n. 251. *t.* 37. *Buxb. cent.* 1. 15. *t.* 23.
Flowers racemed, ſeſſile; number of parts four.

DESCRIPTIONS, *&c.*

Theſe are paraſitical plants, faſtening themſelves to, and drawing their nouriſhment from others. The ſeed does not ſplit into lobes, but opens and puts forth a little ſpiral body, which is the embryo; the ſtalk twines about ſome other plant, contrary to the ſun's apparent motion, or from right to left; ſending out from the inner ſurface a number of little veſicles, which attach themſelves to the bark of the plant: by degrees, the longitudinal veſſels of the ſtalk ſhoot from their extremities, and inſinuate themſelves ſo intimately with it, that it is eaſier to break than to diſengage them from it. They have no leaves, except here and there a very ſmall membranaceous ſcale, cloſe under a branch.—Linneus aſſerts that theſe plants deſert the ground entirely; and from the experiments made by Parkinſon and Ray it appears, that plants raiſed from ſeed ſoon die, when they have no plant to which they can attach themſelves. They adhere to the ground by the original root, and draw a part of their nutriment from thence, at firſt; but the original root withers away as ſoon as the young ſtem has fixed itſelf to any other plant.

1. Stem ſlender, filiform, ſmooth, four-cornered, reddiſh. A ſingle ſmall ovate acute ſcale under each ball of flowers; where alſo it frequently puts forth a branch: theſe balls or globular heads do not ſurround the ſtem, but proceed from the ſide where it divides into branches; and have eighteen flowers or more. Calyx and corolla uſually four-cleft; but ſometimes five-cleft: the former ſhaped like a ſpice clove, running down, as it were, into a kind of peduncle; the ſegments ovate, often rounded at the end. Corolla white, or with a tinge of purple. Scarcely any nectaries in the primary flowers, but in the later ones ſemibifid. Stamens four or five; anthers yellow. Stigma reddiſh. Capſule membranaceous, tranſparent, ſmall, immerſed almoſt half way in the fleſhy calyx, cut cloſe to the baſe, or below the middle, the partition riſing from the lower half. Seeds generally two in each cell, but ſometimes three or four[a]: they are almoſt globular, covered with very minute raiſed dots, and of a yellow bay colour. Gærtner obſerves, that the embryo is filiform, one-lobed, yellow, and that it makes three revolutions round the albumen.

Native of Europe, in hedges, *&c.* uſually on buſhes and the loftier plants, as Hops, Brambles, woody Nightſhade, Fern, Thiſtles, Hemp; alſo on Flax, Nettles, Clover, Graſs, *&c.* Flowering in july and auguſt.

2. This, which is ſuppoſed by many to be ours, has been thought by Linneus and others to be only a variety of the foregoing. It is certainly very like it, but differs in having all the parts ſmaller and more tender, the ſtems more ſlender. The calyx between cloven and divided, with the ſegments ovate, acuminate, unequal, not running down into a kind of peduncle. Corolla paler, deeper cut; the ſegments ſharper and ſmaller: the balls of flowers cloſer[b].

In cultivated fields, particularly among pulſe; alſo on heaths. I have obſerved it particularly on Beans, Nettles, and Heath. Others have remarked it on Furze, Flax; Thyme, wild Thyme, Lavender, and others of the Didynamia claſs; Spurge, Hops, Graſs, *&c.* It flowers from june to auguſt. Both are annual.—From its deſtructive quality of ſuffocating plants, it has the opprobrious names of *Hell-weed* and *Devil's-guts.* The other name is from the German *Dotter.*

Dr. Smith has no doubt but that the firſt ſpecies is our plant: and Monſ. Villars is decidedly of opinion that they differ only in ſize.

3. This is a very branching, leafleſs, twining, paraſitical plant; tender, ſhining, and yellowiſh. Common peduncles very ſhort. Flowers ſmall, without ſcent, aggregate, yellowiſh or greeniſh. Calyx withering. Seeds two, three, or only one arriving at maturity, the reſt being abortive. The calyx is five-cleft, the ſegments roundiſh, blunt, concave, ſhort, converging; that and the corolla both of the ſame colour. Petal cylindric, erect; tube the length of the calyx; border five-cleft, ſmall, ſpreading. Nectary of five fringed, converging ſcales, faſtened to the petal below the ſtamens. Filaments always five, upright, from the upper part of the tube, the length of the corolla: anthers oblong, erect. Styles little longer than the corolla: ſtigmas capitate. Capſule one-celled, opening in two parts horizontally. Seeds few, convex on one ſide, flattiſh on the other[c]: according to Swartz roundiſh, and four in each capſule.

Native of America, on ſhrubs and trees, and in hedges: according to Brown, creeping on the graſs and lower buſhes.—Sloane ſays the ſtems are very long and ſtrong, ſtretching themſelves over very large trees, and whole fields and paſtures.

4. This ſpecies alſo climbs trees. Stem round, branching, very thick like hop-binds; bark reddiſh green or brown purple, rough and ſtudded with purpliſh, ſtiff, riſing grains like Millet. Flowers on racemes coming out laterally, an inch or two in length, ſometimes branched; they are ſcattered, ſolitary, or only two or three together, not glomerate; ſeſſile, not peduncled. Corolla four-cleft, reddiſh white. Calyx covered with a fleſhy ſkin, green, or tinged with purple. Capſule large, covered with the ſame ſkin. Seeds wrinkled, rounded.

Native of Sileſia, flowering in july and auguſt. Annual[d].

Cuscuta. See *Baſella, Caſſyta,* and *Tillandſia.*

Cuspidia. See *Gorteria.*

CUSSONIA. (*In memory of Cuſſon, a celebrated botaniſt, who laboured to complete the claſs of umbellate plants. Lin. ſuppl.*)
Lin. ſuppl. 25. *n.* 1378. *Schreb.* 455. *Thunb. nov. act. upſ.* 3. 211. *nov. gen.* 10. *Juſſ.* 218.
Claſſ. 5. 2. Pentandria Digynia.
Nat. order of *Araliæ.* Juſſieu.

GENERIC CHARACTER.

Cal. *Umbel* none (but three or more peduncles, unimbelled, collecting the flowers into a raceme or ſpike.)
Involucre none (but ſcattered bractes at the baſe of the peduncles.)
Perianth one-leafed, truncate, obſcurely five-toothed, ſhorter than the corolla, permanent.
Cor. *Petals* five, oblong, acute.
Stam. *Filaments* five, very ſhort. *Anthers* ovate.
Pist. *Germ* inferior, turbinate. *Styles* two, filiform, patulous. *Stigmas* ſimple, obtuſe.
Per. twin, compreſſed, angular, crowned with the calyx and ſtyles, two-celled, two-valved.
Seeds ſolitary.

ESSENTIAL CHARACTER.

Pet. three-cornered. Margin of the receptacle dilated into a five-toothed calyx.

SPECIES.

1. Cuſſonia thyrſiflora.
Lin. ſyſt. 292. *ſuppl.* 182. *Thunb. act. upſ.* 3. *t.* 12.

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[a] Leers, Pollich, Krocker, Stokes in Withering.
[b] Stokes in Withering. Krocker.
[c] Jacquin.
[d] Krocker.

Leaves digitate, leaflets ſeſſile wedge-form truncate three-toothed; *flowers racemed.*

2. Cuſſonia ſpicata.

Lin. ſyſt. 292. *ſuppl.* 182. *Thunb. act. upſ.* 3. *t.* 13.

Leaves digitate, leaflets petioled ſpatulate; *ligule three or five-palmate finely ſerrate*; *flowers in ſpikes.*

DESCRIPTIONS, *&c.*

1. Stem frutescent; at bottom ſcabrous, unequal, ſimple, the thickneſs of a finger; very ſimple at top. Leaves at the top of the ſtem, approximating, alternate, petioled, digitated in fives, Leaflets unequal, ſcarcely emarginate, with three and ſometimes five remote, obtuſe, ſmall teeth; they have the conſiſtence of Menyanthes leaves. Petioles long. Stipules between the leaves. Racemes terminating, umbelled. Rays four, very ſimple, naked below, but with racemed flowers at the end, the raceme cylindric.—There is a variety of this with jointed leaflets, the loweſt joint dilated at the end into ſmaller lobes, whence the leaflets are as it were proliferous.

2. This and the foregoing are natives of the Cape of Good Hope[a].

Juſſieu regards this genus as ſcarcely diſtinct from *Panax*. If it is to be preſerved, the ſhrubby *Panaces* ſhould be referred to it; P. undulata of Aublet, *guian. t.* 360.; Unjala, *Rheede malab.* 7. *t.* 28; and perhaps Aralia umbellifera of Lamarck.

CUSTARD-APPLE. See *Annona.*

CYANA. See *Gentiana.*]

CYANELLA. (*Dimin. from* κυανος, *blue.*)

Lin. gen n. 420. *Reich.* 453. *Schreb.* 568. Royen. *Gærtn.* 17. *Juſſ.* 53.

Claſſ. 6. 1. Hexandria Monogynia.

Nat. order of *Coronariæ.*—*Aſphodeli* Juſſieu.

GENERIC CHARACTER.

CAL. none.

COR. *Petals* ſix, cohering by their claws, oblong, concave, patulous, the three inferior ones hanging forwards.

STAM. *Filaments* ſix, contiguous at the baſe, very ſhort, ſomewhat ſpreading: the lower one declined, and twice the length of the others. *Anthers* oblong, erect, gaping at the tip, with four obtuſe teeth.

PIST. *Germ* three-cornered, obtuſe. *Style* filiform, declinate. length of the loweſt ſtamen. *Stigma* ſomewhat ſharp.

PER. *Capſule* ſuperior, roundiſh, three-furrowed, three-celled, three-valved.

SEEDS many, oblong.

ESSENTIAL CHARACTER.

Cor. ſix-petalled: the three lower petals hanging forwards. *Stamens* lower declined, longer than the reſt.

SPECIES.

[1. Cyanella lutea. *Yellow-flowered Cyanella.*

Lin. ſyſt. 329. *ſuppl.* 201.

Leaves enſiform; *branches erect.*]

2. Cyanella capenſis. *Purple-flowered Cyanella.*

Lin. ſpec. 443. *Reich.* 2. 60. *ſuppl.* 201. *Gærtn. fruct.* 68. *Jacqu. hort.* 3. *t.* 35.

Leaves waved; *branches ſpreading very much.*

[3. Cyanella alba. *White-flowered Cyanella.*

Lin. ſyſt. 329. *ſuppl.* 201.

Leaves linear-filiform.

DESCRIPTIONS, *&c.*

1. This agrees with the next ſpecies in having the filaments at the baſe in form of a pitcher, in having one anther larger than the reſt, and a ſimple ſtigma. It differs in having the root-leaves lanceolate not linear, the peduncles leſs divaricate, the petals larger and yellow. It was found at the Cape of Good Hope by Sparrmann[b]. And was introduced in 1788, by Mr. Francis Maſſon. It flowers in july[c].]

2. The root is ſhaped like that of the Spring Crocus; leaves long, narrow, with a groove on their upper ſide; the peduncle ariſes immediately from the root, ſupporting one flower of a fine blue colour, which appears in may, but the flowers are not ſucceeded by ſeeds in England.

[It has the ſtature of Scilla. Flowers irregular[d]. Capſule rounded-three-cornered, netted with obſcure nerves. Seeds erect, fixed in a double row to the central margin of the partitions; there are four in each cell, of a ſubovate form, narrowed downwards, variouſly angular, very dark brown[e].

Native of the Cape of Good Hope. Cultivated by Mr. Miller in 1768.

They eat the roots roaſted in Africa.

3. Found at the Cape by Thunberg[f].]

PROPAGATION AND CULTURE.

The roots ſhould be planted in pots filled with light earth, placed in winter in a frame, and treated in the ſame manner as is directed for Ixia.

CYANOIDES. See *Centaurea.*

CYANUS. See *Centaurea*, *Chryſocoma*, *Protea*, *Pteronia*, and *Stæbelina.*

CYATHOIDES and CYATHUS. See *Peziza.*

CYCAS. (*From Pliny.* Κυκας *of Theophraſtus*; *a ſort of Ethiopian Palm.*)

Lin. gen. n. 1222. *Reich.* 1285. *Schreb.* 1699. *Juſſ.* 16. *Conf. Jacqu. in act. helv.* 8. *p.* 59. *t.* 2.

Claſſ. 25. 1. Appendix Palmæ. — Dioecia Polyandria. *Thunb.*

Nat. order of *Palms*. *Filices* or *Ferns*. Juſſ.

GENERIC CHARACTER.

* *Male.*

CAL. *Spathe* none. *Spadix* none.

Ament ſtrobile-form, ovate, ſquarroſe, imbricated with ſcales.

Scales ſpathule-form, ſmooth, fleſhy, coloured, keeled beneath: with a reflected point, diſtant.

COR. none.

STAM. *Filaments* none. *Anthers* none.

Pollen ſpread within the upper ſurface of the ſcales of the ament, ſeſſile, very plentiful, very crowded, ſomewhat globoſe, one-celled, burſting longitudinally on one ſide.

* *Female*, in a diſtinct individual.

CAL. Spathe none.

Spadix very ſimple, compreſſed-ancipital, long, ſharpened. *Perianth* none.

COR. none.

PIST. *Germs* ſolitary, immerſed beyond the middle into the corners of the ſpadix, remote, roundiſh. *Style* cylindric, very ſhort. *Stigma* ſimple.

PER. *Drupe* oval, one-celled. *Rumph.*

SEED. *Nut* woody, one-celled. *Rumph.*

ESSENTIAL CHARACTER.

MALE. *Ament* ſtrobile-form, with the ſcales covered every where beneath with pollen.

FEM. *Spadix* ſword-form. *Germ* immerſed into the corners of it, ſolitary. *Style* one. *Drupe* with a woody nut.

SPECIES.

1. Cycas circinalis. *Broad-leaved Cycas.*

Lin. ſpec. 1658. *Reich.* 4. 374. *mat. med.* 224. *hort. cliff.* 482. *fl. zeyl.* 393. *Rumph. amb.* 1. *t.* 22, 23. *Rheed. mal.* 3. *t.* 13—21. *Raii hiſt.* 1360.

Fronds pinnate; *leaflets linear, flat.*

2. Cycas revoluta. *Narrow-leaved Cycas.*

Lin. ſyſt. 926. *Thunb. jap.* 229. *Rumph. amb.* 1. 92. *t.* 24. *Kæmpf. amœn.* 897. *Lour. cochinch.* 632.

C. circinalis. *Mill. dict. Jacqu. in act. helv.* 8. 59. *t.* 2.

Fronds pinnate; *leaflets linear*; *revolute about the edge.*

DESCRIPTIONS, *&c.*

1. This plant was at firſt placed by Linneus among the Palms, with an obſervation, that the foliation reſembled that of the Ferns, to which tribe he afterwards removed it, obſerving that it had naked pollen, without any anther. Jacquin however, (Acta Helv. 8. p. 59. t. 2.) has ſhewn that

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[a] Linn. ſuppl.

[b] Ibid.

[c] Hort. kew.

[d] Linn. ſpec.

[e] Gærtner.

[f] Linn. ſuppl.

it is a perfect dioecous plant, and has in part deſcribed and figured the parts of fructification: by which it appears after all to be a Palm.

Native of the Eaſt Indies, the Friendly Iſlands, and the New Hebrides in the South Seas. Introduced about 1763, by John Blackburne, Eſq.[a]

2. Trunk round, branched, a fathom or more in height, the thickneſs of the thigh, ferruginous and hirſute from the falling of the leaves. The ſtipe of the fronds has ſpines below. The leaflets are nearly oppoſite, linear, ſomewhat ſickle-ſhaped towards the inſide, ending in a ſimple ſpine, entire, with the edge rolled back, and an elevated line along the middle, ſmooth, two lines broad, from erect ſpreading, the loweſt and higheſt ſhorter than the others. The fruit is an ovate, flat, red drupe, an inch and half in length[b].

Whether the *Cycas inermis* of Loureiro be the ſame with the *C. revoluta* of Thunberg, I dare not determine. According to his deſcription, the trunk is five feet high, quite ſingle or undivided, the thickneſs of the human thigh, rugged and brown. Fronds five feet long, aſcending: the ſtipes roundiſh and without any ſpines: the leaflets linear-lanceolate, ſix inches long, ſmooth, duſky-green, flattiſh, oppoſite, ſeſſile. Male ament terminating, erect, ſolitary, oval-oblong, four inches in diameter, ſtrobile-form, duſky yellow, imbricate, almoſt cloſed: ſcales oblong-turbinate, thick, fungoſe, ſtaminiferous. No perianth, corolla, or filaments. Anthers more than a hundred in each ſcale, ſcattered, globular, as big as the ſeeds of Radiſh, opening at the tip. Female flower, with ſpadixes various, linear, reflex, few-flowered, ſubterminating, ſimple, terminated by a jagged bracte. Drupe an inch and half in diameter, ovate, a little compreſſed, ſmooth and even, rufous; incloſing a woody nut of the ſame form, in which is a ſingle kernel. It is never branched, nor monoecous.

It is not uſed for food in China or Cochinchina, but it is cultivated there for its beauty. In Tunquin they make a ſort of bread called *Sagu* from the pith of the trunk[c].

The fruit is eaten by the Japoneſe: but the pith of the trunk is moſt eſteemed for its highly nutritive quality: they affirm that a ſoldier can ſubſiſt upon a very ſmall piece of it, and therefore it is made a capital offence to export this tree[d].

Native alſo of China and Cochinchina, and introduced about 1758] by Richard Warner, Eſq. of Woodford in Eſſex, who received a plant from Captain Hutchinſon. His ſhip being attacked by the French, the head of the plant was ſhot off, but the ſtem being preſerved, produced ſeveral heads, which being taken off produced as many plants.

Dampier ſays that the Sago-trees are called by the natives of Mindanao, (one of the Philippine iſlands) *Libby-trees*; that they grow wild in great groves of five or ſix miles long, by the ſides of the rivers. Its body and ſhape is much like the Palmeto-tree, or the Cabbage-tree, but not ſo tall as the latter. The wood is full of white pith like that of Elder. They cut down the tree, ſplit it in the middle, and ſcrape out all the pith; which they beat luſtily with a wooden peſtle in a great mortar or trough, and then put it into a cloth or ſtrainer held over a trough; and pouring water in among it, they ſtir it about: ſo the water carries all the ſubſtance of the pith through the cloth into the trough, leaving behind a light ſort of huſk, which they throw away; that which runs into the trough ſettles to the bottom like mud; then they draw off the water, and make the ſubſtance into cakes, which being baked proves very good bread. The Mindanao people live three or four months of the year on this food. The native Indians of Ternate, Tidore, and all the Spice iſlands have plenty of theſe trees, and uſe them for food. The Sago which is tranſported into other parts of the Eaſt Indies, is dried in ſmall pieces like little ſeeds or comfits, and commonly eaten with milk of Almonds by thoſe that are troubled with the flux.]

PROPAGATION AND CULTURE.

Theſe trees require to be plunged in the bark-bed in the ſtove, which ſhould be kept up full to temperate heat in winter; but in ſummer ſhould be much hotter. They ſhould be frequently refreſhed with water during hot weather; but in autumn and winter it ſhould be given ſparingly.

CYCLAMEN.

(Κυκλαμινος *of Dioſc. From* κυκλας, *circular, either on account of the round form of the leaves, or of the roots.)*

Engl. *Cyclamen*, or *Sow-bread.*
Fr. *Ciclame*, *Pain de pourceau.*

Lin. gen. n. 201. *Reich.* 214. *Schreb.* 262. *Tourn.* 68. *Juſſ.* 97.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Preciæ.*—*Lyſimachiæ.* Juſſieu.

GENERIC CHARACTER.

CAL. *Perianth* half-five-cleft, roundiſh, permanent: *diviſions* ovate.

COR. one-petalled. *Tube* ſomewhat globoſe, twice as large as the calyx, ſmall, nodding. *Border* bent upwards, five-parted, very large: *diviſions* lanceolate. *Neck* prominent.

STAM. *Filaments* five, very ſmall, in the tube of the corolla. *Anthers* ſtraight, ſharp, in the neck of the corolla, converging.

PIST. *Germ* roundiſh. *Style* filiform, ſtraight, longer than the ſtamens. *Stigma* ſharp.

PER. *Berry* globoſe, one-celled, gaping five ways at the top, covered with a capſular ſhell.

SEEDS very many, ſomewhat ovate, cornered. *Recept.* ovate, free.

ESSENTIAL CHARACTER.

Cor. rotate, reflex, with a very ſhort tube, and prominent throat. *Berry* covered with a capſule.

SPECIES.

1. Cyclamen coum. *Round-leaved Cyclamen.*
Mill. dict. n. 6. *Ait. hort. kew.* 1. 195. *Curtis magaz. t.* 4. *Hall. helv. n.* 635. *Blackw. t.* 147.
C. orbiculato fol. *Ger.* 694. 1. *emac.* 843. 1.—inferne purpuraſcente. *Bauh. pin.* 308.
C. vulgare fol. rotundo. *Park. parad.* 198. *t.* 197. *f.* 9. *Raii hiſt.* 1205. 2.
Leaves orbicular, cordate, quite entire.

2. Cyclamen europæum. *Common Cyclamen.*
Lin. ſpec. 207. *Reich.* 1. 415. *mat. med.* 57. *hort. upſ.* 47. *cliff.* 49. *Jacqu. auſtr.* 5. *t.* 401. *Allion. pedem. n.* 324. *Krock. ſileſ. n.* 298. *Scop. carn. n.* 211. *Plenck, ic. t.* 85.
C. vernum fl. purpureo & albo. *Park. parad.* 195. *n.* 1, 2. *t.* 197. *f.* 1. *Ger. emac.* 843. 3.
Leaves orbicular cordate crenate.

3. Cyclamen perſicum. *Perſian Cyclamen.*
Mill. dict. n. 3. *Ait. hort. kew.* 1. 196. *Curtis magaz. t.* 44.
β. C. vernale. *Mill. dict. n.* 4. *fig. t.* 115.
Leaves oblong-ovate cordate crenate.

4. Cyclamen hederæfolium, *Ivy-leaved Cyclamen.*
Ait. hort. kew. 1. 196.
C. europæum. *Mill. dict. n.* 1.
C. hederæfol. *Bauh. pin.* 308. *Ger.* 694. 2. *emac.* 844. 2. *f.* 5. *Raii hiſt.* 1206.—autumnale. *Park. parad.* 196. *t.* 197. *f.* 5.——fol. hederæ. *theat.* 1364.
Leaves cordate angular toothletted.

[5. Cyclamen indicum.
Lin. ſpec. 207. *Reich.* 1. 415. *fl. zeyl. n.* 401.
Border of the corolla nodding.

DESCRIPTIONS, *&c.*

The flowers are borne ſingly on a naked ſtem, peduncle or ſcape, and are nodding. The root is roundiſh, ſolid and tuberous.

Linneus obſerves, that the ſeveral varieties connect the plants which have angular leaves with thoſe which have round ones ſo intimately, that limits are aſſigned to them with difficulty.

Mr. Curtis is of opinion, that Linneus, in having only two ſpecies, makes too few; and that Miller, on the contrary, in giving eight ſpecies, is perhaps too profuſe. I have followed the Kew catalogue.—Of the ſix ſpecies ſet down by Mr. Miller, for he has no more than ſix; the fourth I have put down as a variety of our third, though the leaves be entire. The ſecond appears not to be different from our firſt. Perhaps the fifth is a variety of the ſame ſpecies. I know not whether any one of Miller's ſpecies anſwers to the *europæum* of Linneus, figured by Jacquin.—Parkinſon has enumerated ten ſorts, ſeveral of which are mere varieties.]

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[a] Hort. kew.
[b] Thunberg.
[c] Loureiro.
[d] Thunberg.

Mr. Miller gives what he takes to be varieties, from many years obſervation and experience in ſowing the ſeeds. C. hederæ folio, *Bauh. pin.* which is the moſt common in England, produces two varieties, with purple, and white flowers. C. coum does not vary. C. perſicum, varies with a white flower and purple bottom, and a pale flower with a deeper coloured bottom; ſome plants alſo have rounder leaves than others. C. verno tempore florens, *Cluſ. hiſt.* 265. which is the leaſt common among us of any, he will have to be a diſtinct ſpecies. As alſo C. radice anemones, flore purpureo minore odorato, *Boerh. ind.*; which he ſays differs entirely in the form of the root, and the ſize of the leaves and flowers, from all the reſt.

1. This has plane orbicular leaves, with ſhort weak petioles, their under ſide is very red in the beginning of winter, but that colour goes off in the ſpring; their upper ſide is ſmooth, of a lucid green, and ſpread flat open; whereas the other ſorts are hollowed, and reflex at the baſe. The flowers are very bright purple, and appearing in the middle of winter when there are few other flowers, this plant is the more valuable.

C. purpuraſcens, n. 2. of Miller, may perhaps be a variety of this. The leaves are large, orbicular, and heart-ſhaped at their baſe, of a purple colour on their under ſide. The leaves and flowers come up from the root at the ſame time: the latter are of a purpliſh colour, and their bottoms of a deep red. It flowers late in autumn, and is rare in England. It requires protection in winter.

C. orbiculatum, n. 5. of Miller, may probably be another variety. It has a ſmall irregular root, not larger than a nutmeg: the leaves are orbicular and ſmall: the flowers ſmall, fleſh-coloured with purple bottoms. They appear in autumn, but rarely produce ſeeds in England.

[Native of the South of Europe. Cultivated 1731[a].

2. Root tuberous, oblately ſpheroidal, white within, brown without. Hence proceeds, within the ground, a very ſhort ſtem, and from that the leaves and one-flowered peduncles or ſcapes. Leaves kidney-form roundiſh, very blunt, ſlightly crenulate, deep green and ſpotted above, beneath commonly red-purple, ſmooth, on very long round red petioles. Peduncles like the petioles, erect in the flower, ſpiral in the fruit. Flowers drooping, ſweet-ſcented, purple. Capſule coriaceous, purple, opening firſt at the top, and then entirely. Seeds large, rufous, kidney-form[b].

Native of Auſtria. Cultivated 1596, by Gerarde[c].]

3. Leaves ſtiff, on ſtrong fleſhy petioles, near ſix inches long, of a purple colour, as are alſo the veins of the leaves underneath; but the upper ſide is veined and marbled with white. The corolla is pure white with a bright purple bottom; but it varies in colour, and is ſometimes entirely white: this variety ſmells very ſweet. The petal of the Perſian Cyclamen is divided into nine ſegments to the bottom: theſe ſegments are twiſted and bent back like the others. It flowers in march and april, and the ſeeds ripen in auguſt.

[Cultivated 1731, by Mr. Miller[d].

By its name it ſhould be a native of Perſia; according to Mr. Curtis, it comes from the Eaſt Indies; and from the Kew catalogue we learn, that it was found by Dr. John Sibthorp in the iſland of Cyprus.

It flowers early in the ſpring, and is admirably adapted to decorate the parlour or ſtudy. It varies with fragrant flowers; and with the eye more or leſs red[e].]

β. The vernal Cyclamen of Miller, n. 4. has large, angular, heart-ſhaped leaves, entire about the edges; they are veined and marbled with white on the upper ſide, and ſtand upon pretty long petioles: the flowers are large, of a pale purple colour, with a bright red or purple bottom. They appear in march and april, and the ſeeds ripen in auguſt. It is commonly called Perſian Cyclamen.

4. Root large, orbicular, compreſſed. Leaves numerous on petioles ſix or ſeven inches long; the leaves are marked with black in the middle: the flowers appear before them on long fleſhy ſcapes, in auguſt or ſeptember. Soon after, the leaves come out, continue growing all the winter and ſpring till may, when they begin to decay; in june they are entirely dried up. After the flowers are fallen, the peduncles twiſt up like a ſcrew, incloſing the germ in the centre, and lie cloſe to the ground among the leaves, which ſerve as a protection to the ſeed, which ripens in june. There are two varieties of this; one with a white, and the other with a purpliſh flower.

Native of Italy. [Cultivated by Gerarde, in 1596[f].

Ray found it in the neighbourhood of Rome abundantly, flowering in ſeptember.

5. Undoubtedly a ſpecies of Cyclamen, as the root, cordate crenate leaves, flowers and ſcapes abundantly prove. It differs only in having the diviſions of the corolla not reflected but hanging down; and the whole corolla being much larger than in the European ſpecies.—Native of the iſland of Ceylon[g].

PROPAGATION AND CULTURE.

All the ſorts are propagated by ſeeds which ſhould be ſown ſoon after they are ripe, in boxes or pots filled with light kitchen-garden earth, mixed with a little ſand, and covered about half an inch deep, placing them where they may have only the morning ſun till the beginning of ſeptember, when they may be removed to a warmer expoſure. Thoſe of the firſt, ſecond, and fourth ſorts may be plunged into the ground cloſe to a ſouth wall, a pale, or reed hedge, in october, where, if it ſhould be very ſevere froſt, it will be proper to cover them either with mats or peaſe-haulm, but in common winters they will not require any covering. The pots or tubs in which the Perſian ſort is ſown, ſhould then be placed under a common hot-bed frame, where they may be protected from froſt and hard rains, but in mild weather the glaſſes may be taken off every day to admit freſh air to them. The fourth ſort will come up about Chriſtmas, if the ſeeds were ſown in auguſt, and their leaves will continue green till may; and thoſe of the Perſian ſort will come up early in the ſpring, and continue green till june, when they will begin to decay; then they ſhould be removed to an eaſt aſpect, where they will have only the morning ſun, in which ſituation they may remain till the middle of auguſt; during which time they ſhould have very little water, for then the roots are in an inactive ſtate, when much wet will rot them. The pots and tubs in which they are ſown, muſt be conſtantly kept clean from weeds; for if the weeds are permitted to grow, their roots will cloſely entangle with thoſe of the Cyclamen, ſo that in pulling out the weeds, the other roots will be drawn out with them. In the beginning of october, there ſhould be ſome freſh earth ſpread over the tubs or pots, which ſhould be removed again into ſhelter, in the ſame manner as before; and the following ſummer they muſt be managed alſo in the ſame way till their leaves decay, when they ſhould be carefully taken up, and thoſe of the firſt, ſecond, and fourth ſorts placed in a warm border at three or four inches diſtance, but the other ſort muſt be planted in pots to be ſheltered in winter.

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[a] Hort. kew. [b] Jacquin. [c] Hort. kew. [d] Ibid.

[e] Curtis. [f] Hort. kew. [g] Linn. zeyl.

The Perſian ſort is more impatient of cold and wet than the others; this muſt conſtantly be preſerved in pots filled with ſandy light earth, or a mixture of loam and lime rubbiſh, and houſed in winter, but ſhould be placed near the glaſſes, where the plants may enjoy as much free open air as poſſible, when the weather will permit; for if they are crowded under other plants, and are kept too cloſe, they are very ſubject to mould and rot; nor ſhould they have much water in winter, which is alſo very injurious to them, but whenever they want water, it ſhould be given them ſparingly. In ſummer theſe plants may be expoſed to the open air, when their green leaves will decay; at which time you ſhould remove them to a place, where they may have the morning ſun until eleven o'clock; but during the time that the roots are deſtitute of leaves, they ſhould have very little water given them, becauſe at that ſeaſon they are not capable of diſcharging the moiſture. This is alſo the proper ſeaſon to tranſplant the roots, or to freſh earth them; and as the autumn comes on, that the heat decreaſes, they may be removed into places more expoſed to the ſun, where they may remain until october before they need be houſed.

Toward Chriſtmas, if the roots are in good health, the firſt ſort will begin to flower, and continue producing freſh flowers till the middle of february, and theſe will be ſucceeded by the Perſian ſorts, which continue till may; but if you intend to have any ſeeds, you muſt let the pots be placed ſo as to receive a great ſhare of freſh air, for if their flowers are drawn up in the houſe, they ſeldom produce any ſeeds. Theſe ſeeds are ripe about july, when they ſhould be immediately ſown in pots or caſes of good light undunged earth, which ſhould be ſheltered in winter under a frame, and expoſed in ſummer in the ſame manner as is directed for the older roots, obſerving to remove them into pots at a wider diſtance when they are two years old, and ſo from time to time, as their roots increaſe in bulk, you muſt give them more room; and in about four or five years they will begin to flower, when each root ſhould have a ſeparate ſmall pot, and when it is grown large, a larger.

When the firſt ſort is planted in an open border, common hot-bed frames ſhould be placed over it in winter, to protect it from froſt. Thus managed, it will produce more and fairer flowers than when planted in a pot, and good ſeeds may be expected from it. Perſons who are curious in flowers ſhould have a border framed over, on purpoſe for theſe, the Guernſey and Belladonna Lilies, with other curious bulbous roots.

[CYCLAS. (Κυκλας, αδος, η. *orbiculata, rotunda, circular.* Κυκλαδες νησοι, *the iſlands called Cyclades, from their lying in a circle.—This plant has its name from the orbicular wing ſurrounding the pericarp.)*

Lin. gen. Schreb. n. 712. Apalatoa. *Aublet. t.* 147. Touchiroa. *Aubl.* 148. *Juſſ.* 365.

Claſſ. 10. 1. Decandria Monogynia.

Nat. order of *Lomentaceæ. Leguminoſæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed. *Tube* ſhort, turbinate: *border* four-parted, patulous; *ſegments* ovate-oblong, acute.

COR. none.

STAM. *Filaments* ten, capillary, inſerted into the neck of the calyx, and longer. *Anthers* ovate.

PIST. *Germ* ovate-oblong, villoſe, pedicelled. *Style* capillary, flexuoſe. *Stigma* obtuſe.

PER. Legume? roundiſh, depreſſed, wrinkled, ſurrounded by an orbicular, membranaceous, broad, waving wing, one-celled, not opening.

SEED ſingle, kidney-form.

ESSENTIAL CHARACTER.

Cal. four-parted, ſpreading, with a ſhort turbinate tube. *Cor.* none. *Filaments* inſerted into the neck of the calyx. *Style* flexuoſe. *Legume* roundiſh, winged, one-ſeeded.

SPECIES.

1. Cyclas ſpicata.
   Apalatoa ſpicata. *Aubl. guian.* 382. *t.* 147.
   Leaves pinnate.
2. Cyclas aromatica.
   Touchiroa aromatica. *Aubl. guian.* 384. *t.* 148.
   Leaves ovate.

DESCRIPTIONS, *&c.*

1. The trunk of this tree is from thirty to forty feet high, and a foot and half in diameter. The bark is gray and ſmooth; the wood whitiſh. It has ſeveral large boughs at top, ſpreading in all directions. Leaves alternate, unequally pinnate. Leaflets alternate, ſeven on each ſide, ovate-oblong, acuminate, ſmooth, quite entire, ſubſeſſile, firm, unequal, the largeſt four inches long, and an inch and half wide. Stipules in pairs at the baſe of the common petiole, deciduous. Flowers in long ſpikes, axillary and terminating, on ſhort pedicels. Bracte at the baſe of the peduncle, and of each pedicel.

Native of the great foreſts of Guiana, flowering there in november, and fruiting in january. The Caribee name is Apalatoua.

2. The trunk of this tree is from forty to fifty feet high and more, and about two feet in diameter. Bark gray: wood white and not compact. Branches very numerous ſpreading in every direction. Leaves alternate, large, ſtiff, ovate, acute, ſmooth, quite entire, on ſhort petioles, at the baſe of which are two deciduous ſtipules. Spikes axillary, covered with herbaceous flowers.

Native of the great foreſts of Guiana, in marſhy places. It flowers there in december, and bears fruit in may.

The Caribee name is Moutouchiraou.—The wood is light and a little aromatic.

CYDONIA. See *Cratæva* and *Pyrus.*

CYLISTA. (*From* κυλιω, *volvo, comes* κυλιστος, *convolutus, volubilis; twining.*)

Ait. hort. kew. 3. 512. *Schreb. n.* 1759.

Claſſ. 17. 4. Diadelphia Decandria.

Nat. order of *Papilionaceæ* or *Leguminoſæ.*

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, four-parted, very large, permanent: the upper diviſion reflex, bifid; the reſt erect, oblong, acute.

COR. papilionaceous, a little longer than the calyx, permanent.

Banner roundiſh, emarginate, with a ſmall lobe on each ſide of the baſe.

Wings oblong, obtuſe, ſhorter than the banner, with a proceſs on each ſide of the baſe.

Keel oblong, cleft at top and bottom, longer than the wings.

STAM. *Filaments* diadelphous (ſimple and nine-cleft) aſcending. *Anthers* roundiſh.

PIST. *Germ* ſuperior, ovate, compreſſed. *Style* ſubulate, aſcending. *Stigma* ſubcapitate.

PER. *Legume* ovate-oblong, compreſſed, one-celled.

SEEDS two, oval.

ESSENTIAL CHARACTER.

Cal. very large, four-parted: the upper diviſion cleft at the end. *Cor.* permanent.

SPECIES.

1. Cyliſta villoſa. *Hairy Cyliſta.*
   Ait. hort. kew. 3. 36.

It flowers in april and may, and was introduced in 1776, but from what country is not known. It is a ſhrub, and requires the heat of a ſtove to preſerve it.

CYMBACHNE. (*From* κυμβη, *a boat, and* αχνη, *a glume or chaff.*)

Retz. obſ. 6. 36.

Claſſ. 23. 1. Polygamia Monoecia.

Nat. order of *Gramina* or *Graſſes.*

GENERIC CHARACTER.

* *Hermaphrodite flowers.*

CAL. *Glume* two-valved, one-flowered, ſo placed that each valve is preſſed cloſe to the rachis and parallel, not one hid by the other. *Outer* valve linear, blunt, ciliate at the back: *inner* equal in length, ſemiovate, acute, boat-ſhaped, very much compreſſed, ſtriated, coloured, ciliate at the back, incloſing the corolla.

Cor. two-glumed, hyaline, ſmaller than the calyx.

Stam. *Filaments* three. *Anthers* black.

Pist. *Germ* minute. *Style* ſimple. *Stigmas* two, black-bearded.

* *Female flowers.*

Cal. one-valved, ovate, ſlightly bifid at the tip, ciliate at the edge, oppoſite to the rachis, preſſed cloſe.

Cor. none.

Pist. as in the hermaphrodite, but with longer ſtigmas.

ESSENTIAL CHARACTER.

Infloreſcence half-ſpiked.

Herm. *Cal.* two-glumed, one-flowered, parallel to the rachis, outer valve linear, the oppoſite boat-form.

Fem. *Cal.* one-glumed, ovate, oppoſite to the rachis.

SPECIES.

1. Cymbachne ciliata.

Retz. obſ. 6. 36.

DESCRIPTION, *&c.*

This is a ſlender graſs, a foot in height, with ſeveral culms, ſimple or branched, with a ſingle leaf or leafleſs. Leaf ſhort, ſlender, ciliate on the edge above the ſheath with long ſeparate hairs: ſheath truncate, with a pale brown mouth, and ciliate. Spikes two terminating, linear, an inch and half long, a line broad, ſome hermaphrodite, others female. Rachis linear, membranaceous, flat behind with three longitudinal ſtreaks, alternately and flexuoſely hollowed out in front.

Native of Bengal, where it was detected by König[a].

Cymbalaria. See *Antirrhinum* and *Saxifraga.*

CYMBARIA. (*From* κυμϐη, *cymba, a boat; the fruit being boat-ſhaped.*)

Lin. gen. n. 751. *Reich.* 809. *Schreb.* 1008. *Amm. Ruth.* 1. *Juſſ.* 119. *Gærtn.* 53.

Claſſ. 14. 2. Didynamia Angioſpermia.

Nat. order of *Perſonatæ.—Scrophulariæ.* Juſſieu.

GENERIC CHARACTER.

Cal. *Perianth* ten-toothed, erect: two oppoſite teeth ſtronger and more ſpreading: the reſt erect, linear; permanent.

Cor. one-petalled, ringent. *Tube* oblong, bellied. *Border* two-lipped; *upper lip* two-parted, reflex, obtuſe; *lower lip* three-cleft, obtuſe.

Stam. *Filaments* four, length of the tube. *Anthers* two-cleft, prominent.

Pist. *Germ* ovate. *Style* filiform, length of the ſtamens, tip incurved. *Stigma* obtuſe.

Per. *Capſule* ovate, one-celled, two-valved, (ſubcordate, membranaceous, two-celled, *G.*) *Receptacle* quadrangular, (kidney-form, very large, *G.*)

Seeds very many, cornered, ſmooth, (compreſſed, *G.*)

Obs. *The calyx alone eaſily diſtinguiſhes the genus from all others.*

ESSENTIAL CHARACTER.

Cal. ten-toothed. *Capſ.* cordate, two-celled.

SPECIES.

1. Cymbaria daurica.

Lin. ſpec. 861. *ſyſt.* 558. *Reich.* 3. 141. *mant.* 417. *Amm. ruth.* 47. *t.* 1. *f.* 2. *Gmel. ſib.* 3. 198. *n.* 8. *Gærtn. fruct.* 252.

DESCRIPTION, *&c.*

The whole plant is hoary, and nearly allied to Antirrhinum. Branches oppoſite, barren. Flowers lateral, very few, ſubſeſſile, large. Upper lip of the corolla vaulted; lower equal; palate gibbous[b]. Capſule ſlender, brown-bay, marked with a deep groove on each ſide, gaping only on the edge: when it is ripe the valves become narrower than the receptacle: partition contrary to the valves. Seeds from twelve to ſixteen in each cell, oblong, with an irregular membranous edge, of a bay colour[c].

Native of the mountains of Dauria.

Cyminosma. See *Laxmannia.*

Cyminum. See *Cuminum.*]

CYNANCHUM. (*From* κυων, *a dog, and* αγχω, *to ſtrangle. Hence* Κυναγχη, *a diſorder in the throat.*)

Lin. gen. n. 304. *Reich.* 331. *Schreb.* 430. *Gærtn. t.* 117. *Juſſ.* 147.

Claſſ. 5. 2. Pentandria Digynia.—Decandria *according to ſome.*

Nat. order of *Contortæ. Apocineæ* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, five-toothed, erect, very ſmall, permanent, (five-parted, acute, ſpreading, *Schreb.*)

Cor. one-petalled. *Tube* ſcarce any. *Border* five-parted, flat: *diviſions* linear, long, (lanceolate, *S.*) *Nectary* in the centre of the flower, length of the corolla, erect, cylindric: with a five-cleft *mouth.*

Stam. *Filaments* five, length of the *nectary,* parallel. *Anthers* touching, within the mouth of the corolla.

Pist. *Germ* oblong, two-cleft. *Style* ſcarce any. *Stigmas* two, obtuſe.

Per. *Follicles* two, oblong, acuminate, one-celled, gaping lengthwiſe.

Seeds numerous, oblong, crowned with a down, placed in an imbricate manner.

Obs. C. viminale *departs a little from the character here given.* Mant. 392. R.

Schreber, who takes the character from C. acutum, *gives it thus:*

Cal. and Cor. as above.

Nect. growing to the tube of the filaments, erect, one-leafed plaited in angles, ten-toothed: teeth five longer, ſharp, five alternate ſhorter, emarginate: From the bottom of the nectary ariſe five triangular, erect, thickiſh leaflets, furrowed in the middle, obtuſe, oppoſite to the longer toothlets.

Stam. *Filaments* thickiſh, conjoined into a ſhort tube. *Anthers* oblong, preſſed cloſe, two-celled, ending in an inflex membrane incumbent on the ſtigma; winged on each ſide. *Pollen* conjoined in ten oval, flat corpuſcles, concealed within the cells of the anther, fixed to it by ſhort, horizontal threads; which are faſtened by pairs to five cartilaginous twin tubercles, each ſitting on the tip of the wings of the anthers at the notches of the angles of the ſtigma.

Pist. *Germs* two, ovate-oblong. *Styles* two, ſubulate. *Stigma* common to both, large, five-cornered, with emarginate angles; in the middle two conical, obtuſe, ſmall tubercles.

Per. and Seeds as in the other.

ESSENTIAL CHARACTER.

Contorted. *Nect.* cylindric, five-toothed.

SPECIES.

1. Cynanchum viminale. *Naked Cynanchum.*

Lin. ſyſt. 257. *Reich.* 1. 604. *mant.* 392.

Euphorbia viminalis. *Lin. ſpec.* 649. *hort. cliff.* 197. *upſ.* 140. *amœn.* 3. 110. *Mill. dict. n.* 15.

Apocynum viminale. *Baſſ. act. bonon.*

A. guineenſe, &c. *Herm. parad.* 61.

Felfel Tavil. *Alp. ægypt. t.* 190.

Stem twining perennial leafleſs.

2. Cynanchum acutum. *Acute-leaved Cynanchum.*

Lin. ſpec. 310. *Reich.* 605. *hort. cliff.* 79. *upſ.* 54. *Gærtn. fruct.* 2. 171. *Jacqu. miſc.* 1. 16. *t.* 1. *f.* 4. *Gmel. it.* 2. 198. *Bauh. pin.* 294. 3. (*Scammoniæ*). *Cluſ. hiſt.* 1. 125. (*Apocynum*). *Beſl. eyſt. æſtiv.* 13. *t.* 9. *f.* 2.

Stem twining herbaceous, leaves cordate-oblong ſmooth.

[3. Cynanchum planiflorum. *Flat-flowered Cynanchum.*

Lin. ſyſt. 257. *Reich.* 605. *ment.* 53. *Jacqu. amer.* 82. *t.* 55. *pict.* 44. *t.* 81.

Stem twining, leaves cordate ſmooth tomentoſe underneath, peduncles ſubracemed.

4. Cynanchum racemoſum. *Racemed Cynanchum.*

Lin. ſyſt. 257. *Reich.* 605. *mant.* 54. *Jacqu. amer.* 81. *t.* 54. *pict.* 43. *t.* 80.

Stem twining, leaves cordate ſmooth acute, racemes ſimple.

5. Cynanchum maritimum. *Sea Cynanchum.*

Lin. ſyſt. 257. *Reich.* 605. *mant.* 54. *Jacqu. amer.* 83. *t.* 56. *pict.* 44. *t.* 82.

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[a] Retz.

[b] Linn. mant.

[c] Gærtner.

Stem twining, leaves cordate hirſute tomentoſe underneath, peduncles aggregate.]

6. Cynanchum ſuberoſum. *Cork-barked Cynanchum.*
Lin. ſpec. 310. *Reich.* 605. *hort. cliff.* 79. *Gron. virg.* 27. *Dill. elth.* 308. *t.* 229. (*Periploca*).
Stem twining cork-barked at bottom and cleft, leaves cordate acuminate.

7. Cynanchum hirtum. *Hairy Cynanchum.*
Lin. ſpec. 310. *Reich.* 605. *hort. cliff.* 79. *Plum. ſpec.* 2. (*Periploca*). *Mor. hiſt. ſ.* 15. *t.* 3. *f.* 61. *Herm. par.* 53. (*Apocynum*).
Stem twining ſhrubby cork-barked and cleft at bottom, leaves ovate-cordate.

8. Cynanchum monſpeliacum. *Montpellier Cynanch.*
Lin. ſpec. 311. *Reich.* 606. *hort. cliff.* 79. *Cavan. hiſp.* 44. *n.* 66. *t.* 60. *Jacqu. ic. rar.*
Scammonea monſp. fol. rot. *Bauh. pin.* 294.
S. valentina. *Cluſ. hiſt.* 1. 126.
Stem twining herbaceous, leaves reniform-cordate acute.

[9. Cynanchum extenſum. *Hairy-flowered Cynanchum.*
Lin. ſyſt. 217. *Ait. hort. kew.* 1. 303. *Jacqu. miſc.* 2. 353. *icon. rar.*
C. cordifolium. *Retz. obſ.* 2. 15. *n.* 37.
Stem twining fruteſcent, leaves cordate acute, peduncles elongated, pedicels filiform; corollas hirſute at the edge, follicles ramentaceous.

10. Cynanchum undulatum. *Waved-leaved Cynanch.*
Lin. ſyſt. 257. *Reich.* 606. *mant.* 54. *Jacqu. amer.* 85. *t.* 58. *pict.* 45. *t.* 84.
Stem twining, leaves lanceolate-ovate ſmooth, umbels globular.

11. Cynanchum capenſe. *Cape Cynanchum.*
Lin. ſyſt. 257. *ſuppl.* 168.
Stem twining conform on every ſide, leaves ſubcordate-ovate, peduncles many-flowered.

12. Cynanchum obtuſifolium. *Blunt-leaved Cynanch.*
Lin. ſyſt. 257. *ſuppl.* 169.
Stem twining herbaceous, leaves oblong, rounded at the tip with a point, umbels lateral.

13. Cynanchum tenellum.
Lin. ſyſt. 257. *ſuppl.* 168.
Stem ſomewhat twining herbaceous, leaves ovate-oblong.]

14. Cynanchum erectum. *Upright Cynanchum.*
Lin. ſpec. 311. *Reich.* 606. *hort. cliff.* 79. *Jacqu. hort.* 1. *t.* 38. *miſc.* 1. 20. *t.* 2. *f.* 1.
Apocynum fol. ſubrotundo. *Bauh. pin.* 302.
A. 1. latifolium. *Cluſ. hiſt.* 1. 124.
A. latif. non repens. *Park. theat.* 385. 1.
Stem erect divaricated, leaves cordate ſmooth.

[15. Cynanchum filiforme.
Lin. ſyſt. 257. *ſuppl.* 169.
Stem erect quite ſimple, leaves linear, flowers verticilled axillary.

16. Cynanchum criſpiflorum. *Curled-flower Cynanch.*
Swartz prodr. 52. *Ait. hort. kew.* 1. 302. *Plum. ic.* 210. *t.* 216. *f.* 1.
Stem twining, leaves underneath villoſe oblong cordate, with the ſinus cloſed; petals curled at the end.

17. Cynanchum reticulatum.
Retz. obſ. 2. 15. *n.* 38.
Stem twining, cork-barked at bottom and chinky, leaves ovate acute.]

18. Cynanchum aſperum. *Rough-leaved Cynanchum.*
Mill. dict. n. 6.
Stem twining ſhrubby, leaves cordate acute rough, flowers lateral.

[19. Cynanchum roſtratum. *Beak-flowered Cynanch.*
Vahl. ſymb. 3. 45.
Stem and petioles hirſute, leaves cordate-oblong, petals lanceolate flat.

20. Cynanchum parviflorum. *Small-flowered Cynanch.*
Swartz. prodr. 53. *Plum. ic. t.* 215. *f.* 1.
Stem twining filiform, leaves ovate ſubulate at the end, umbels ſubſeſſile.

21. Cynanchum proſtratum. *Proſtrate Cynanchum.*
Cavan. hiſp. 5. *n.* 7. *t.* 7.
Stem proſtrate, leaves heart-ſhaped orbiculate-acute tomentoſe underneath.

22. Cynanchum grandiflorum. *Great-flowered Cyn.*
Cavan. hiſp. 14. *n.* 19. *t.* 21.
Stem twining, leaves heart-ſhaped ovate-cuſpidate glaucous underneath, corollas coriaceous.

23. Cynanchum odoratiſſimum. *Sweet Cynanchum.*
Lour. cochinch. 166.
Flos ſiamicus, ſ. flos Tunkini. *Rumph. amb. c.* 75. *t.* 26. *f.* 1.
Stem twining corky and cloven at bottom, leaves heart-ſhaped acuminate wrinkled, cymes reflex.

24. Cynanchum altiſſimum. *Lofty Cynanchum.*
Jacqu. amer. 84. *t.* 57. *pict. t.* 83.
Stem twining, leaves heart-ſhaped tomentoſe on both ſides, flowers umbelled.

25. Cynanchum longiflorum. *Long-flowered Cynanch.*
Jacqu. amer. 85. *t.* 59. *pict. t.* 85.
Stem twining, leaves oblong acute villoſe, flowers umbelled.

26. Cynanchum filiforme (americanum.)
Jacqu. amer. 86. *t.* 60. *f.* 1. *pict. t.* 86.
Stem twining, leaves ovate acuminate flat ſhining, umbels globular.

27. Cynanchum clauſum. *Cloſe-flowered Cynanchum.*
Jacqu. amer. 87. *t.* 60 *f.* 2. *pict. t.* 87.
Stem twining, leaves acuminate-oblong, rolled back at the edge, flowers umbelled.

DESCRIPTIONS, &c.

Theſe are ſhrubs or underſhrubs, commonly twining. Leaves oppoſite. Flowers axillary or terminating, diſpoſed in ſpikes, corymbs or umbels[a].

Nothing has given more trouble to botaniſts, or given riſe to a greater variety of opinions among them, than the ſtructure of the genitals in this genus and that of Aſclepias. Tournefort, Desfontaines, Deſcemet, Richard, Jacquin, Rottboll, Kolreuter, Cavanilles may be conſulted on this ſubject. The parts are ſo very ſmall, and are furniſhed with a ſuch compound apparatus, that it is very difficult to determine any thing about them with certainty.

They have all two germs running out into conical ſtyles, covered with a fungoſe pentagon body, all of which, except the upper ſurface of the latter, are ſo covered, firſt with a ſheath, and then with little bags hanging down and preſſed cloſe, that there does not ſeem to be the minuteſt opening to theſe parts. In each of the five angles of the fungoſe body (which Linneus calls *corpus truncatum*, and Jacquin the ſtigma) is a very ſmall ovate body, or tubercle, ſharp at bottom, whence ariſe two filaments, which either widen into a club, or are terminated by tranſparent yellowiſh balls: theſe clubs or little balls are almoſt always taken up by the bags, which open at the top, and grow narrower towards the baſe. Kolreuter and Rottboll will not allow the five-cornered fungoſe body to be the ſtigma, as there is every reaſon however to ſuppoſe it is.

Authors diſagree as to the number of anthers in the flowers of Cynanchum, and of courſe as to its place in the ſexual ſyſtem. Linneus with his editors, and the French botaniſts aſſign only five, whilſt the German botaniſts and Cavanilles attribute ten anthers to the flower. There are five tubercles, as we have obſerved, at the five corners of the fungoſe body, whence ariſe ten filaments finer than a hair, ending in a club or elſe a little ball; they who take the latter for anthers place theſe plants in the claſs Decandria, whilſt others, who look upon the former as the anthers, place them in the claſs Pentandria[b]. Theſe parts are well figured and deſcribed in the firſt volume of Jacquin's Miſcellanea.

1. Naked Cynanchum, ſo called from its having ſtems without any leaves on them, was ſuppoſed by Linneus to be an Euphorbia, and is thus deſcribed under that name by Miller.] It ſends out a great number of ſlender taper ſtalks of a dark green colour, which are ſmooth, and twiſt about each other, or any neighbouring ſupport, and then will riſe to the height of ten or twelve feet, putting out ſmaller

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[a] Juſſieu.
[b] Cavanilles hiſp. p. 5.

branches at top, which alſo twine about the other ſtalks.

[Calyx five-parted. Corolla rotate, like that of Aſclepias, with a membranaceous edge ſurrounding the ſtamens and piſtils. Nectaries five, reſembling petals, erect, having a yellow perforated grain (or tubercle) with a ſmall claw on the inſide, and placed in a ring. Anthers minute, brown, placed on a head[c].

Native of the Cape of Good Hope. Cultivated in 1759, by Mr. Miller[e].] It has not flowered in England.

2. Root perennial, creeping. Stems annual, twiſting like hops round whatever plants are near them, and riſing to the height of ſix or eight feet. Leaves ending in acute points, and placed in pairs on long footſtalks. Flowers in ſmall axillary bunches, of a dirty white colour. [Jacquin ſays of a very pale fleſh-colour, with lanceolate, bluntiſh ſegments, ſpreading open very much, and flat. Leaflets of the calyx lanceolate, ſmall, greeniſh. From the tube of the petal aſcends the nectary, which is bell-ſhaped, of the ſame colour with, and ſhorter than the corolla, divided above two thirds of its length into five lanceolate, acute, erect ſegments, ſo far removed from each other as to admit five other very ſmall rounded ſegments, ſometimes quite entire, ſometimes lacerated, or bifid. Sheath conical and narrow at the baſe; thence widening, and divided into five two-celled oblong bractes, ending in as many rounded ſcales, and embracing the mouths of the ſtigma. Between theſe, to the margin of the ſtigma are fixed the ſtaminiferous tubercles, putting forth from their baſe on each ſide a ſingle very fine horizontal filament. Anthers pale, roundiſh-ovate, flat, fixed by their middle part, and containing a pulpy pollen. Germs two, ovate-oblong, ending in two ſhort ſtyles, which are crowned by a diſcoid pentagon ſtigma, common to both[d].

This deſcription of the fructification may be compared with the generic character given above from Schreber. According to Gærtner, the calyx is five-toothed, the corolla five-cleft, no nectaries, ten pendulous ſtamens, concealed within the involucre of the germs, which are two, involucred by five ſcales united into a cylinder. Follicles diverging horizontally as they approach to maturity, columnar, ſmooth: receptacle linear, membranaceous, free. Seeds ſeveral, imbricate downwards, ovate-oblong, flatted a little, ſurrounded by a narrow, membranaceous rim, with a lateral umbilicus in it, of a reddiſh ferruginous colour, and crinite; the hairs ſimple, ſilky-white, five times as long as the ſeeds.

Native of Spain and Sicily. Cultivated in 1596 by Gerarde[e].]

It flowers in june and july, but does not produce ſeeds in England; occaſioned probably by the roots creeping ſo far under ground; for moſt plants which propagate themſelves ſo much by their roots become barren, eſpecially if their roots have full liberty to extend.

[3. This is a milky plant, with twining, round, ſmooth ſtems. Leaves oblong-cordate, acuminate, quite entire, very ſoft, with a ſcarcely conſpicuous nap underneath, ſmoothiſh on the upper ſurface, but bearded at the origin of the petiole with abrupt rigid ferruginous, very ſhort cilias. Common peduncles ſmooth, lateral, ſolitary, ſuſtaining about five flowers, on pedicels elongated beyond the common one. Flowers void of ſcent, very flat, half an inch in diameter; corollas veined and æruginoſe; calyxes greeniſh white.

The parts of fructification are thus deſcribed. *Perianth* five-leaved; leaflets lanceolate, flat, acuminate, ſpreading very much, ſlightly coloured, generally exceeding the corolla in length. *Corolla*, tube ſpreading, very ſhort: border five-cleft, diviſions ovate-roundiſh, ſpreading very much, and flat. *Nectaries* five, connected at their ſides ſo as to form one body of the ſame form and ſize as the tube of the corolla; in the centre of the flower produced from their baſe riſing into five blunt, upright little bodies, twice as long as the tube of the corolla, furniſhed at the top with cowled two-celled little membranes. *Filaments* ten, capillary, ſhort, in pairs from the ſame point between the cowls of the nectary. *Anthers* obovate, obtuſe, columnar, upright, concealed by the cowls. *Germs* two, ovate, convex on one ſide, flat on the other, the ſame length with the tube of the corolla, in the centre of the nectary. *Styles* two, ſhort, upright. *Stigma* ſingle, ſimple, very large, quinquangular, cloven in the centre, funnel-form.

Native of Carthagena in New Spain; flowering in july and auguſt.

4. Stems herbaceous, twining, ſmooth, ſcandent, full of a white milky juice. Leaves quite entire, ſhining, ſlightly waved, bright green on the upper ſurface, æruginoſe on the back, petioled. Racemes lateral, three inches long, ſolitary; but by the ſide of the principal a ſmaller branch comes out, which is alſo loaded with flowers; they are ſmall, white, and void of ſcent.—*Calyx* five-leaved, leaflets lanceolate, concave, acute, patulous. *Corolla*, tube bell-ſhaped, very ſhort: border five-cleft, diviſions lanceolate, flat, ſpreading very much, revolute and emarginate at the end, a little longer than the calyx. *Nectaries* five, erect, the length of the calyx, ovate, flat, three-jagged and acuminate at the end; in the centre of the flower from its baſe produced, finally riſing into five oblong ſhort blunt little bodies, which end in membranes that are cowled, and rendered two-celled by a middle partition. *Filaments* ten, capillary, very ſhort, in pairs from the ſame point between the cowls of the nectary. *Anthers* oval, columnar, upright, concealed in the cells of the cowls. *Germs* two, very ſmall, in the centre of the nectary. *Style* ſingle, filiform, upright, almoſt the length of the nectary. *Stigma* very large, flat on both ſides, with five ſharp angles.

Native alſo of Carthagena; flowering in october and november.

5. This alſo is a milky plant, with twining, round, hirſute ſtems. Leaves acuminate, quite entire, petioled, from two to four inches long. Peduncles one-flowered and ſhortiſh, ſpringing aggregately from a tubercle among the leaves. Flowers without ſcent, with a green calyx, and a dark purple corolla. *Calyx* five-parted; with lanceolate, acute, ſmall leaflets, ſpreading very much. Tube of the *corolla* very ſhort, ſpreading; ſegments of the border ovate, acute, flat, large, hirſute within, ſpreading very much. *Nectary* bell-ſhaped, conſiſting of five obcordate, three-toothed, ſpreading leaflets, connected at the ſides into one body, of the ſame colour with the corolla, and of the ſame length with the calyx; riſing into five little bodies in the centre of the flower, furniſhed with five membranaceous, cowled, two-celled ſcales. *Filaments* ten, capillary, ſhort, in pairs from the ſame point between the ſcales of the nectary. *Anthers* obovate, columnar, upright, concealed in the cowls. *Germs* two, ovate, convex on one ſide, flat on the other, in the centre of the nectary. *Style* cloven at the baſe, at the height of the ſcales ſpread out into a body flat on both ſides, wide, and ſharply five-cornered; from the centre of this it again emerges ſingle, filiform, erect, the length of the corolla. *Stigma* bifid; the diviſions obtuſe, ſpreading.

Native of Tierra Bomba, on the coaſt; flowering in november[f].]

6. Root perennial. Stems ſlender, hairy, twining, and if ſupported riſing ſix or ſeven feet high: the lower part is covered with a thick fungous bark, ſomewhat like cork, and full of fiſſures. At each joint is a pair of leaves on long hairy footſtalks. The flowers are in ſmall axillary bunches; they are ſtar-ſhaped, and green when they firſt appear, but afterwards change to a duſky purple colour. They

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[c] Linn. mant. from Baſſi.

[d] Miſcell. 1. 16.

[e] Hort. kew.

[e] Hort. kew.

[f] Jacqu. amer.

appear in july and auguſt, but are not ſucceeded by ſeeds in England. Native of Carolina, whence the ſeeds were brought to England. [Cultivated in 1732, by James Sherard, M. D. [g].]

7. This riſes with a twining ſtem to the height of twenty feet or more, if ſupported; the lower part is cork-barked and full of fiſſures like the preceding. Leaves like that on long footſtalks, but ſmooth. Flowers of a yellowiſh green colour, not ſucceeded by pods in England. It grows naturally in Jamaica, whence the ſeeds were ſent to Mr. Miller by Dr. Houſtoun [before 1733 [h].

8. Stems filiform, green, ſmooth, ſwelling at the joints, very long, climbing. Leaves acute, glaucous, about the ſame length with the petioles. Flowers on ſolitary, peduncled racemes between two petioles, the peduncles thickening towards the top. Calyx ſmall, five-cleft. Corolla deeply five-parted; ſegments linear, white above, pale roſe-coloured beneath: in the centre is a whitiſh pitcher-ſhaped body, ten-cleft at the top, with five broad ſhorter ſegments, and five ſharp longer ones, ornamented internally with as many ſharp appendages, which are raiſed upwards: in the middle of this body is placed a ſheath, obſcurely five-cornered, with five pendulous two-celled appreſſed little bags, ending at top in as many orbicular ſcales, converging towards the top of the ſheath. Stamens ten, very ſhort, capillary, inſerted by pairs into an obovate root: anthers ten, globular, concealed within ten receſſes of the bag: the roots of the ſtamens appearing between the ſcales. Germs two, approximating, ending in conical ſtyles: the ſtigma is common to both, of a pentagon figure, forming the roof or top of the theca or ſheath, crowned by two toothlets, approximating at the baſe, afterwards divaricating [i].]

The leaves are broader and rounder at their baſe than in the ſecond ſort. The roots are very thick, running deep into the ground, and extending themſelves far on every ſide. Both theſe plants abound with a milky juice like the Spurge, which iſſues out wherever they are broken; and this, when concreted, has been frequently ſold for Scammony.

[Native of the South of Europe. Cultivated in 1597, by Gerarde [k].

9. From an annual root divided into whitiſh fibres a foot and half long, and not ſo thick as a quill, ariſes a twining ſtem, very much branched, twelve feet high, round, villoſe, with longer hairs thinly interſperſed, rough, glaucous, when far advanced ſlightly tinged with purple. The branches are the ſame. Leaves quite entire, almoſt ſmooth on both ſides, on a long round villoſe petiole. The common peduncles come out between the oppoſite petioles, commonly ſingle, but ſometimes on each oppoſite ſide, from half a foot to a foot in length, round, rugged, villoſe, ſpreading, leafleſs. Pedicels an inch and half long come out aggregately at intervals from the former. Flowers pendulous, ſweet-ſmelling, beginning to open about ſix o'clock in the evening, and cloſed by morning; they are of a greeniſh pale colour. The plant is elegant, and abounds with white milk. The character of the fructification is as follows. *Perianth* five-cleft, ſmall, ſomewhat villoſe, permanent: leaflets lanceolate, acute, erect. *Corolla* wheel-ſhaped: tube ſubquinquangular, longer than the calyx: diviſions of the five-cleft border lanceolate, acute, three times the length of the tube, flat, except that the ſides are rolled back, ſpreading very much, very cloſely and ſoftly ciliate, with hairs about the edges. *Nectary*, the ſheath from the tube of the corolla, to which it grows, is elevated into a pentagon five-grooved white cone ſhorter than the petal; this cone conſiſts of five erect obtuſe bractes, three-lobed at the tip, the middle lobe longer, and lying on the vertex of the ſtigma, on the inſide having two little bags for the lodgement of the anthers: to each bracte at the baſe of the double bag on the back is faſtened a lanceolate convex appendix, bent in both ways, acute, erecting itſelf from the middle of the ſheath beyond the ſtigma. *Filaments* ten, ſhort, from each brown point between the bractes of the ſheath conſpicuous on the ſtigma in pairs. *Anthers* obovate, compreſſed, pendulous, yellow. *Germs* two. *Styles* two, awl-ſhaped. *Stigma* capitate, globular, with an obtuſely five-cornered rim about the edge. *Follicles* lanceolate-acuminate, muricate, turgid, glaucous, coriaceous, diverging or reflex. *Seeds* very many, flat, with a ſilky down, and fixed to the receptacle [l].

Jacquin has retained the name *extenſum* originally given it by the celebrated Solander from the elongated peduncles. Retzius, who had it from König, calls it *cordifolium*; and ſays that the leaves are roundiſh-cordate, ſometimes a little angular, and ſmooth on both ſides; that the flowers are in cymes, on ſlender pedicels proceeding from a tubercle, with a ſmall ſhort bracte under each.

Native of the Eaſt-Indies. Introduced in 1777, by Patrick Ruſſell, M. D. It flowers in july and auguſt [m].

10. This is a milky plant, entirely ſmooth, with twining round ſtems. Leaves quite entire, fat to the touch, on very ſhort petioles, four inches long. A ſolitary, cloſe, ſmall umbel is placed on a round, thickiſh, lateral peduncle, uſually longer than the petiole. Flowers ſmall, without ſcent, firm; calyxes aſh-coloured, corollas nearly of the ſame colour on the outſide, and dirty purple within. Perianth five-leaved: leaflets ovate, concave, ſpreading. Corolla, tube globular-depreſſed, a little longer than the perianth: border five-cleft; ſegments flat, very blunt, ſpreading much, half the length of the tube: throat ſpreading very wide. In all other parts like C. altiſſimum.

Native of Carthagena in New Spain; flowering in july [n].

11. Stem lofty, ſcarcely pubeſcent, even at top, by no means cork-barked. Leaves petioled, mucronate, even; the younger ones ovate, the more advanced emarginate. Peduncles axillary, ſhorter than the leaves, toothletted, ſimple: pedicels alternate, capillary, longer than the peduncle. Calyx very ſhort. Native of the Cape of Good Hope. Obſerved by König and Sparrmann [o].

12. This alſo is a native of the Cape: and was firſt obſerved there by Thunberg [p].

13. Stem filiform, herbaceous, with alternate branches. Leaves oppoſite, petioled, even, the ſize of Chickweed, mucronate. Umbels lateral, irregular, ſhorter than the leaves, ſeſſile. Flowers the ſize of Galium. Two ſubulate follicles, the length of a finger. Found in New Granada, by Mutis [q].]

14. This is a perennial plant, which riſes with ſlender upright ſtalks about three feet high. Leaves broad, ſmooth, ending in points. Flowers axillary, in ſmall bunches, on branching peduncles; they are ſmall and white, greatly reſembling thoſe of the common white Aſclepias.

[The fructification is thus deſcribed by Jacquin. *Perianth* green, ſmall, ciliate, five-cleft: ſegments lanceolate, acute, erect. *Corolla* white, divided almoſt to the baſe into five oblong, obtuſe, flat ſegments, all together forming at bottom an almoſt bell-ſhaped corolla, but ſpreading very much at top, and ſlightly bent with the apparent courſe of the ſun. The ſheath is placed immediately on the pedicel of the flower; below it is round, green, and has two grooves; above the germ from the back below the bractes it puts forth five petal-ſhaped, white, ſublinear, obtuſe, upright, ſmall leaflets; but here the ſheath itſelf becomes oblong, concave bractes, ending in a roundiſh ſcale, yellowiſh, applied to the ſtigma, and half its length: theſe bractes have not any two-celled bags, but inſtead of them two roundiſh yellow ſmall plates, ſituated above the baſe in a parallel poſition, and extended forward. *Germs* two, obtuſe, pale: ſtyle very ſhort, thick, ſingle and undivided, common to both germs: ſtigma very large, elongate-conical, thick, erect, pale yellow, bifid and obtuſe at the end, very long. At the ſides of the ſtigma between the bractes about the middle are linear brown tubercles, from each of which ariſe two yellow obovate flat anthers, hanging forward between adjoining plates of neighbouring bractes and their edges, almoſt without filaments [r].

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[g] Hort. kew.

[h] Ibid.

[i] Cavanilles.

[k] Hort. kew.

[l] Jacquin.

[m] Hort. kew.

[n] Jacquin.

[o] Linn. ſuppl.

[p] Ibid.

[q] Ibid.

Native of Syria. Cultivated in 1640. It flowers in july and auguſt [s].

15. Found at the Cape, by Thunberg [t]. There is a ſpecies deſcribed under this name by Jacquin, entirely diſtinct from this [u]. See n. 26.

16. Native of South America, and the Weſt-Indies. Cultivated before 1741, by Robert James Lord Petre. It flowers in july [x].

17. Stem woody, covered with a thick whitiſh bark, the branches twining, ſtriated, ſmooth. Leaves far from each other, petioled, ſmooth, the upper ones lanceolate. Flowers ſmall, hairy on the outſide, unequally pedicelled in peduncled axillary umbels.

Native of the Eaſt-Indies, and obſerved there by König [y].]

18. Stem ſhrubby, twining, twenty feet high or more, very ſlender, and armed with ſmall ſtinging hairs. Leaves broad heart-ſhaped, ending in acute points by pairs at each joint, which are far diſtant, on ſlender foot-ſtalks; they are covered with rough hairs on their under ſide. The flowers are produced in ſmall cluſters, ſitting cloſe to the ſtalks; they are pretty large, yellow and ſtar-ſhaped, ſpreading open to the bottom. Follicles long, ſwelling. Seeds flat, crowned with long down. Native of La Vera Cruz in New Spain, whence the ſeeds were ſent from Dr. Houſtoun to Mr. Miller.

[19. Stem twining, ſhaggy, with reverſed hairs, as are alſo the petioles. Leaves two or three inches long, acuminate, having hairs thinly ſcattered over the upper ſurface, paler underneath, with numerous raiſed dots, viſible only with a magnifier, with a ſinus open, not cloſed as in C. criſpiflorum. Peduncles axillary, ſhorter than the petiole, ſmoothiſh. Pedicels ſubumbelled, four or five, unequal, filiform, hirſute, often twice as long as the general peduncle, but ſhorter than the leaves. Segments of the calyx ovate, thinly haired. Corolla before it unfolds ovate, acuminate-beaked: petals thrice the length of the calyx, linear-lanceolate, with a few hairs on the outſide. Found on the iſland of Trinidad by Rohr. The proper place of this is between the third and fourth ſpecies [z].

20. Native of the Weſt-Indies. Its place is between the twelfth and thirteenth ſpecies [a].

21. Stems a foot high, round, filiform, branched, knotted, tomentoſe, ſubherbaceous. Leaves in pairs at each knot, nearly equal to the petioles, quite entire, ſoft, glaucous underneath, having an unpleaſant ſmell. Flowers in ſolitary umbels: common peduncle half an inch long, between the two petioles: rays four, one-flowered, ſurrounded at the baſe by three little bractes. Calyx ſmall, divided half way into five ovate villoſe parts. Corolla deep green, deeply parted into five ſpreading ſegments, with a revolute border: in the centre is a whitiſh pitcher-ſhaped body, ſurrounding the genitals, five-parted, with the ſegments deeply two-horned; from the centre of the horns ariſe two plates, one of which is arched towards the genitals, the other is very ſmall, oppoſite to the former, and verges outwards. Genitals concealed within a ſheath, the bottom of which is occupied by two germs, which are partly united, and end in ſtyles, whoſe common ſtigma is large, five-cornered and fungoſe, ſurrounded by five little ſcales: in the corners of the ſtigma are five very ſmall brown bodies, which are the roots or baſes of the anthers; becauſe from each of theſe a pair of yellow appendages covered with little ſcales proceed, which are the anthers, and are therefore ten in number.

Native of Mexico. It flowered in the Paris garden in 1789; and the year following in the royal garden at Madrid, in the month of auguſt [b].

22. Stem very long, round, branched, thickened, and having a rufous nap at the joints. Leaves having one branching nerve; they are longer than the petiole, which is often twiſted at the baſe, and there is thicker and ſomewhat villoſe. Flowers in ſhort racemes: common peduncle thick, ſolitary, between the two petioles: pedicels in alternate pairs, an inch long. Calyx deeply parted into five acute ſegments. Corolla before it expands rolled up in a ſpiral, but afterwards ſpreading very much, deep green on both ſides, and ſomewhat coriaceous, divided into five lanceolate very ſharp ſegments near an inch in length. At the bottom of this is a yellow body the ſize of a pea, which has five hollows at the baſe, with as many claws arched inwards; from the centre ariſes a very ſhort priſm, terminated by a green pentagon; the ſides of this pentagon have each an ovate concave yellow appendicle, and at the angles are the red roots or baſes of the anthers. Filaments ten, thinner than the fineſt hair, fixed to theſe baſes by pairs, diverging, and gradually augmenting like a club: theſe ten club-ſhaped bodies are the anthers, they are tranſparent, yellow, and concealed between the ſides of the pentagon and the appendicles almoſt in a horizontal ſituation. Germs two, approximating, ending in conical ſtyles: ſtigma common, five-cornered, fungoſe, large

Native of South America. It flowered at Madrid from ſeptember to the end of the year, about 1788 or 1789 [c].

23. Stem very long, round, ſhining, and very ſmooth, except at bottom, where it has a bark like cork. Leaves waved, ſmooth, on long petioles. Flowers yellow, very ſweet-ſcented, in large, hemiſpherical, axillary, reclining cymes. Calyx five-leaved, inferior: leaflets ovate-lanceolate, waved, almoſt erect, permanent. Corolla ſalver-ſhaped, with a thick ſhort tube, inflated at the baſe, and a wide five-parted border, with oblong ſegments, ſomewhat reflex: nectary cylindric, thick, erect, five-cleft, the ſegments converging. Filaments five, membranaceous, adhering externally to the nectary, with ten glands at the baſe: anthers two-celled, compreſſed, acute, lying on the ſtigma. Germ ovate, bifid. Stigma ſeſſile, ovate, emarginate, ſingle.

Native of Siam and Cochinchina. Cultivated there and in China. In fragrance it does not yield to the Arabian Jaſmin (Nyctanthes or Jaſminum Sambac,) and though very common, it is no leſs uſed than that by women of faſhion in thoſe countries to adorn their hair [d].

24. This is a milky ſhrubby plant, climbing trees to the height of fifty feet. Stems round, when old woody, ſmooth, aſh-coloured, leafleſs, when young green, tomentoſe, leafy. Leaves acuminate, quite entire, thickiſh, with a very ſoft but ſcarcely viſible nap on both ſides, petioled, at firſt two inches, but afterwards half a foot in length. Umbels lateral, ſolitary, cloſe, hemiſpheric; common peduncle very thick, round, tomentoſe, ſcarcely the length of the petioles; involucre many-leaved, unequal. Theſe come out with the leaves, and in the leafleſs branches from the joints. Flowers thick, firm, without ſcent; calyxes greeniſh aſh-colour; corollas dirty purple. The ſcales of the nectary, in this and a few others, may be ſaid to have three cells, the partition being double, but ſince theſe folds converge, and the anthers are placed on the outſide, the middle cell is of no conſequence. One of the follicles only ripens, the other proving abortive.

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[r] Jacquin miſc.
[s] Hort. kew.
[t] Linn. ſuppl.
[u] Linn. ſyſt.
[x] Hort. kew.
[y] Retz.
[z] Vahl.
[a] Swartz.

[b] Cavanilles.
[c] Ibid.
[d] Loureiro.

25. Stems round, hairy, climbing to the height of fifteen feet. Leaves obverſely ſubovate, cordate at the baſe, quite entire, thickiſh, with hairy veins and nerves, half a foot long, on ſhort and hairy petioles. Umbels lateral, ſolitary, at moſt ſeven-flowered; common peduncle hairy, thick, round, the length of the petiole; involucre many-leaved, unequal. Flowers without ſmell or beauty; calyxes pale greeniſh; petals pale without, within fuliginous, with numerous ſilvery hairs. One or two of the flowers are abortive before they open, leaving a ſcar. The unuſual elongation of the tube gives the flower a very different appearance from the others.

26. Stems round, filiform, ſhining, branched, very numerous. Leaves quite entire, petioled, ſcarcely an inch and half in length. Umbels ſmall, erect, lateral, alternate: common peduncle filiform, twice the length of the petioles. Flowers without ſcent, ſmall, the petals and nectary ſnow-white. Both follicles commonly ripen.

27. Stems round, ſmooth, numerous. Leaves lanceolate-oblong, acuminate, quite entire, veined, ſhining, on very ſhort petioles, from two to three inches in length. Umbels lateral, ſolitary. Flowers without ſcent, with the corollas and nectaries ſnow-white.

Theſe are all climbing milky plants, and natives of Carthagena in New Spain[e].

On account of the obſcurity in the fructification, I have been the more particular in giving characters and deſcriptions at length, particularly from the celebrated Jacquin. They will not appear very intelligible without the plants themſelves, or at leaſt good magnified figures, ſuch as may be found in Jacquin's miſcellanea. But with theſe they will greatly aſſiſt the botanical ſtudent in developing theſe myſteries, and may lead him to form a more ſatisfactory generic character than has been hitherto given.

PROPAGATION AND CULTURE.

Theſe plants are chiefly inhabitants of hot climates; the greater part (3 to 5, 7, 10, 13, 16, 18 to 22, and 24 to 27) of South America and the Weſt-Indies. Two are from the Eaſt-Indies (9 and 17), and one (23) from Siam and Cochinchina.]

They are all tender, and will not thrive in this country unleſs they are placed in a bark ſtove. As they abound with a milky juice, they muſt have little water in winter. They may be propagated by laying down the young ſhoots, which in three or four months will put out roots, and may then be tranſplanted into pots filled with light ſandy earth, and plunged into the tan-bed, where the plants ſhould continue all the year.

[They may alſo be increaſed by parting the roots, or by cuttings. Such as produce good ſeeds in Europe, which many of them do not, may be propagated that way.

Four ſpecies (1, 11, 12, 15.) come from the Cape, and muſt be preſerved in the dry ſtove. They may be increaſed by layers, cuttings, &c.]

Two, (2, 8) being natives of the South of Europe, are hardy, and propagate too faſt by their creeping roots, which are not eaſily extirpated, when they have got poſſeſſion of the ground. The roots may be tranſplanted any time after the ſtems decay, till they begin to ſhoot in the ſpring.

6. The ſixth ſort from Carolina will live in the open air in England, if it be planted in a dry ſoil and warm ſituation. It may be increaſed by laying down the young ſhoots about midſummer, which, if they are now and then refreſhed with water, will put out roots, and may be tranſplanted in the autumn, where they are deſigned to remain. The roots ſhould be covered in winter with ſome rotten tan to keep out the froſt.

14. The fourteenth ſort from Syria, requires a warm ſituation, to live abroad in England. It is propagated by parting the roots in the ſpring, before they ſhoot.

[Cynanchum. See *Ceropegia* and *Periploca*.

Cynapium. See *Æthuſa*.]

CYNĂRA. (*From* κυων. *Lin.* Κυναρα ακανθα, *Athenæus.* κιναρα, *Voſs. but he does not give any derivation.—Others derive it a cinere, becauſe, according to Columella, land for Artichokes ſhould be manured with aſhes. Parkinſon ſays it is ſo called from the aſh-coloured hue of the leaves.*)

Lin. gen. 928. *Reich.* 1007. *Schreb.* 1257. *Vaill. A. G.* 1718. Cinara. *Tourn.* 254. *Juſſ.* 173.

Claſſ. 19. 1. Syngeneſia Polygamia Æqualis.

Nat. order of *Compoſitæ Capitatæ. Cinarocephalæ.* Juſſ.

GENERIC CHARACTER.

Cal. *Common* ventricoſe, imbricate; *Scales* numerous, roundiſh, fleſhy, increaſed by a membranaceous ſcale-formed *appendicle*, which is larger, roundiſh, channelled, and emarginated with a ſpine.

Cor. *Compound* tubulous, uniform: *Corollets* hermaphrodite, nearly equal.

Proper one-petalled, funnel-form: *tube* very ſlender; *border* erect, ovate, five-cleft; *diviſions* linear, *one* more deeply ſeparated.

Stam. *Filaments* five, capillary, very ſhort. *Anther* cylindric, tubuloſe, length of the corollule, five-toothed.

Pist. *Germ* ſomewhat ovate. *Style* filiform, longer than the ſtamens. *Stigma* ſimple, oblong, emarginate.

Per. none. *Calyx* converging but a little.

Seeds ſolitary, oblong-ovate, four-cornered-compreſſed. *Down* ſeſſile, long.

Rec. briſtly.

ESSENTIAL CHARACTER.

Cal. dilated, imbricate, with fleſhy ſcales, emarginate, with an acumen.

SPECIES.

1. Cynara Scolymus. *Common Artichoke.*

Lin. ſpec. 1159. *Reich.* 3. 692. *hort. cliff.* 394. *upſ.* 251. *Gouan. monſp.* 425. *Villars dauph.* 3. 34. *Blackw. t.* 458. *Woodv. med. bot.* 544. *t.* 199.

C. ſylveſtris. *Park. parad. t.* 519. *f.* 4. *Ger.* 992. 3. *emac.* 1153. 3. *Raii hiſt.* 300.—latifolia. *Bauh. pin.* 384. *hiſt.* 3. 52. 1.

Scolymus Dioſcoridis. *Park. theat.* 973. 1.

β. C. Scolymus. *Mill. dict. n.* 1. *French Artichoke.*

C. hortenſis aculeata. *Bauh. pin.* 383.

Carduus ſ. Scolymus ſativus ſpinoſus & non ſpinoſus. *Bauh. hiſt.* 3. 48. *Raii hiſt.* 299.

Cinara maxima alba. *Ger.* 991. *emac.* 1153. 2.

C. patula. *Park. parad. t.* 519. *f.* 3.

γ. C. hortenſis. *Mill. dict. n.* 2. *Globe Artichoke.*

C. hort. fol. non aculeatis. *Bauh. pin.* 383.

C. maxima anglica. *Ger.* 991. *f.* 1. *emac.* 1153. 1. *Bauh. pin.* 383.

Carduus ſ. Scolymus maximus non ſpinoſus. *Bauh. hiſt.* 3. 51.

C. ſativa rubra & alba. *Park. parad. t.* 519. *f.* 1, 2.

Leaves ſomewhat ſpiny, pinnate and undivided; calycine ſcales ovate.

[2. Cynara horrida. *Madeira Artichoke.*

Ait. hort. kew. 3. 148.

Leaves pinnatifid, tomentoſe underneath, ſpiny, ſpines at the baſe of the leaves, and pinnas connate at bottom.]

3. Cynara Cardunculus. *Cardoon Artichoke.*

Lin. ſpec. 1159. *Reich.* 3. 692. *Villars dauph.* 3. 34.

C. ſpinoſa, cujus pediculi eſitantur. *Bauh. pin.* 383.

Carduus eſculentus. *Park. parad. t.* 519. *f.* 5.

Scolymus aculeatus. *Tabern. hiſt.* 1075.

Leaves ſpiny, all pinnatifid; calycine ſcales ovate.

4. Cynara humilis. *Dwarf Artichoke.*

Lin. ſpec. 1159. *Reich.* 3. 692. *Cluſ. cur.* 35. *Pluk. alm. t.* 81. *f.* 2. (Carduus.) *Mor. hiſt.* 3. 158. *n.* 9. (Carduus.)

Leaves ſpiny, pinnatifid, tomentoſe underneath; calycine ſcales ſubulate.

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[e] Jacquin.

[5. Cynara acaulis.
Lin. ſpec. 1160. *Reich.* 3. 693. *Tilli piſan.* 41. *t.* 20.
Stemleſs; leaves pinnate, unarmed, ſmooth above.

6. Cynara integrifolia.
Vahl. ſymb. 1. 68.
Leaves lanceolate, toothletted, calycine ſcales lanceolate-acuminate.

DESCRIPTIONS, *&c.*

1. The Artichoke in its wild ſtate is ſaid to attain the height of a man. The leaves are much more tomentoſe than in the garden plant, and every ſmall diviſion of them is armed with a ſtrong yellowiſh ſpine. The heads are much ſmaller, and have much larger ſtronger ſpines at the ends of the ſcales.

The cultivated Artichoke ſeldom riſes above four feet in height, with a ſtout, furrowed, leafy ſtem, ſlightly tomentoſe, ſometimes a little branched at top. The root is large, thick, and perennial, crowned by a conſiderable cluſter of pinnatifid leaves, from two to four feet in length, pointing upright, the whole covered with an aſh-coloured down, eſpecially underneath: the midrib has a deep ſingle channel above, and ſeveral deep furrows underneath, with ſtrong ridges between them: at bottom there are uſually ſeveral ſeparate leaflets or rudiments of leaves, which increaſe in ſize till the main leaf begins, and are connected by a wing running down each ſide of the midrib; this wing increaſing, then unites the remainder into one pinnatifid leaf, very deeply cut, and each cleft has a few large ſerratures or jags, ending in a ſhort prickle, which is ſometimes ſcarcely perceptible. The leaves on the ſtem are ſimple, only ſerrate or jagged, like a ſingle cleft of the other; they end obtuſely, and are frequently retuſe; ſometimes they have ſcarcely any ſerratures; immediately below the heads are ſome looſe ſcales, partaking of the nature of the upper leaves and calycine ſcales. The heads are ſubglobular, either green or dark purple, the former commonly tinged at bottom with purple; compoſed of numerous, large, ovate ſcales, which at bottom are very fleſhy, and at top are obtuſe and emarginate, or cloven. If theſe heads be ſuffered to ſtand, the calyx will open, and a great number of jagged purple florets will appear. Theſe are placed on a large fleſhy receptacle, commonly called the bottom; and together with the briſtles interpoſed between the florets, and the down of the feed, form what is vulgarly called the choke, in the immature ſtate of the head, in which ſtate only the calycine leaves are ſucked, and the receptacle or bottom eaten, deprived of the maſs of florets, &c. or choke.

The Artichoke is a native of the South of Europe, as Italy, Sicily, the South of France, &c. In ſome parts it is eaten raw in its wild ſtate, by the common people, and ſurely muſt be a moſt wretched food. It is ſaid to dye a good yellow: and the flowers are uſed inſtead of rennet to turn milk for cheeſe. The whole plant has a peculiar ſmell, and a ſtrong bitter taſte. It was formerly in great requeſt for qualities which it is not now allowed to poſſeſs. It is reputed to be aperitive, ſtomachic, and ſomewhat heating.

β. γ. Mr. Miller makes two ſpecies of the Common Artichoke. 1. C. Scolymus, the Green or French. 2. C. hortenſis, the Globe Artichoke.]

The firſt of theſe, being the ſort moſt commonly cultivated in France, is generally known here by the title of French Artichoke, and is the only ſort in Guernſey and Jerſey. The leaves are terminated by ſhort ſpines, the head is oval, and the ſcales do not turn inwards at the top like thoſe of the Globe Artichoke; the heads are alſo of a green colour, the bottoms are not near ſo thick of fleſh, and they have a perfumed taſte, which to many perſons is very diſagreeable; ſo that it is ſeldom cultivated in the gardens near London, where the Globe or Red Artichoke is the only ſort in eſteem. The leaves of this are not prickly, the head is globular, a little compreſſed at the top, the ſcales lie cloſe over each other, and their ends turn inwards, ſo as cloſely to cover the middle.

[The leaves of the latter are of a bluer caſt, with more and deeper jags on the clefts; they have ſmall inert prickles, like the other, but not ſo perceptible: the leaves of the former are larger, much wider, and of a paler colour, inclining to yellow on the upper ſurface. The great openneſs of the ſcales in the head of the Green Artichoke is a leading character; it alſo rather draws up to a point in the middle, whereas the Globe Artichoke is quite flat at top: the colour is a reddiſh brown, or rather a duſky purple, with a tinge of green.

We learn from Turner that the Artichoke was certainly cultivated in England in 1551[a]. We probably had it much ſooner.

Gerarde (a. 1597.) ſays that our great Artichock, which was firſt brought out of Italy, is become, by reaſon of the great moiſture which our country is ſubject unto, greater, and better than thoſe of Italy, inſomuch that divers Italians have ſent for ſome plants of our Artichockes, deeming them to be of another kind; nevertheleſs in Italy they are ſmall and dry, as they were before. And Parkinſon (parad. printed in 1629) affirms that our Engliſh red Artichoke is the moſt delicate meat of any other, and has been ſent into Italy, France, and the Low Countries; but that they degenerated there in two years: ſo that it ſeemeth that our ſoil and climate hath the preheminence to nouriſh up this plant to its higheſt excellency.—He alſo adds, that the French Artichoke was brought over, after a great froſt had well nigh conſumed our beſt kinds, and are now almoſt clean caſt out again, none being willing to have it take up the room of better. It is remarkable that this is the ſame account with that which is given by Mr. Miller, after the great froſt of 1739-40, above a century afterwards.

The Artichoke has the ſame name, with very little variation, in the European languages. In German it is *Artiſchoke*, corruptly *Erdſchocke*; in Dutch *Artisjok* or *Artichok*; in Daniſh *Ærteſkok*; in Swediſh *Ærtſkocka*; in French *Artichaut*; in Italian *Carciofo*; in Spaniſh and Portugueſe *Alcachofa*; in Poliſh *Karciof*; in Ruſſian *Artitſchok.*

2. Native of the iſland of Porto Santo, near Madeira. Mr. Francis Maſſon. Introduced in 1778[b].

3. John Bauhin affirms that the Cardoon is a hybrid plant or mule from the feed of the Common Artichoke. The corollets and piſtils of this are of a deep blue colour, but the ſtamens are gray. Native of the iſland of Candia[c]. Cultivated in 1683, by Mr. James Sutherland[d]. Parkinſon ſays[e], he was aſſured by John Tradeſcante, that he ſaw three acres of land about Bruſſels planted with this kind, which the owner whited like Endive, and then ſold them in the winter; but that we cannot yet find the true manner of dreſſing them, that our countrey may take delight therein. It is evident, therefore, that Cardoons were not cultivated here in 1629.

In ſome parts of Spain they ſubſtitute the down of this plant for rennet, in making cheeſe. A ſtrong infuſion is made over night; and the next morning, when the milk is warm from the cow, they put nearly half a pint of the infuſion to about fourteen gallons of milk[f]. This plant has the ſame name with ſlight variations in all the languages of Europe, as Kardonen, Kardon, Cardone and Cardo.]

4. This is very like the preceding, but the ſtems of the leaves are much ſmaller, and do not grow more than half ſo high. The heads have ſome reſemblance to thoſe of the French Artichoke, but have no fleſhy ſubſtance in their bottoms. [The ſtem is ſcarcely the length of the leaves. The calycine ſcales are ovate-oblong and ſpreading. The feeds in this ſmaller ſpecies are much larger than in the others, and ſingular[g].

[a] Hort. kew.
[b] Ibid.
[c] Linn. ſpec.
[d] Hort. kew.
[e] Parad. 520.
[f] Townſ. Spain, vol. 1. 297.
[g] Linn. ſpec.

According to Juſſieu, it is of a diſtinct genus; the flower being radical, and the calycine ſcales unarmed, but ciliate-palmate at the tip as in Jacea.

Native of Spain and Barbary. Cultivated (before 1683) in the botanic garden at Oxford, from ſeed ſent by Alexander Baalam from Tangier. It flouriſhed there many years, but periſhed at length in the winter of 1683, never to be forgotten for its ſeverity[h].

5. Native of Barbary.

6. This is a low ſmooth plant, with a ſimple ſtriated ſtem. Leaves petioled, broad lanceolate, remotely toothletted, with minute ſpines, mucronate, an inch and half long. Flower terminating, peduncled, ſolitary, only half the ſize of the Common Artichoke. Scales of the calyx lanceolate-acuminate, the lower ones ending in a ſomewhat pungent ſpine. Corollas blue. Found by Barnadas in the mountains near Toledo in New Caſtille[i].]

PROPAGATION AND CULTURE.

1. The manner of propagating the Common Artichoke is from ſlips or ſuckers taken from the old roots in february or march; or rather ſome time in march, or the beginning of april; which, if planted in a good ſoil, will produce large fair heads the autumn following.

Method of Planting.

When you have a mind to make a new plantation, after having digged and buried ſome very rotten dung in the ground you have allotted for that purpoſe, make choice of ſuch of your plants as were taken from your old ſtocks, which are clear, ſound, and not woody, having ſome fibres to their bottom; then with your knife cut off that knobbed woody part which joined them to the ſtock; and if that cuts criſp and tender, it is a ſign of its goodneſs; but if tough and ſtringy, throw it away as good for nothing; then cut off the large outſide leaves pretty low, that the middle or heart leaves may be above them. Your plants being thus prepared, if the weather is very dry, or the plants have been any time taken from the ſtocks, it will be convenient to ſet them upright in a tub of water for three or four hours before they are planted, which will greatly refreſh them; you muſt then proceed to planting, which muſt be done by ranging a line acroſs the ground, in order to their being placed exactly in a row; and, with a meaſure-ſtick, plant them at two feet diſtance from each other in the rows, and if deſigned for a full crop, five feet diſtance row from row; your plants muſt be ſet about four inches deep, and the earth cloſed very faſt to their roots, obſerving, if the ſeaſon proves dry, to keep them watered two or three times a week, until they are growing, after which they ſeldom require any.

You may ſow a thin crop of Spinach upon the ground before you plant your plants, obſerving to clear it from about them after it is come up.

Theſe plants, in a kindly ſeaſon, or a moiſt ſoil, will produce the largeſt and beſt Artichokes ſome time in auguſt and ſeptember, after all thoſe from the old ſtocks are paſt; ſo that if you intend to continue your Artichokes through the whole ſeaſon, you muſt make a new plantation every year, otherwiſe you cannot poſſibly have fruit longer than two or three months.

If any of the plants which are planted in the ſpring ſhould not fruit in autumn, you may, at the ſeaſon of earthing up your roots, tie up the leaves with a ſmall Willow twig, &c. and lay the earth up cloſe to it, ſo that the top of the plant may be above ground; and when the froſt comes on, if you will cover the top with a little ſtraw, or Peaſe-haulm, to prevent their being killed by froſt, theſe plants will produce fruit in winter, or early in the ſpring.

But in thoſe plantations where you intend to plant other things between your Artichokes, you muſt allow nine or ten feet between the rows, as is often practiſed by the kitchen-gardeners near London, who ſow the ground between with Radiſhes or Spinach, and plant two rows of Cauliflowers, at four feet diſtance row from row, and two feet and a half aſunder in the rows, ſo that there are always five feet allowed for the Artichokes to grow; and in may, when the Radiſhes or Spinach are taken off, they ſow a row of Cucumbers for pickling, exactly between the two rows of Cauliflowers, at three feet diſtance from each other; and between the rows of Cauliflowers and the Artichokes, plant a row of Cabbages or Savoys for winter uſe, which, when the Cauliflowers are drawn off, and the Artichokes gathered, will have full liberty to grow, and by this means the ground is fully employed through the whole ſeaſon. This has long been the practice of the kitchen-gardeners near London, who pay large rents for their land, ſo are obliged to get as many crops in a year from it as poſſible.

In thoſe which are planted at five feet diſtance row from row, you may plant in every other row a line of Cabbages or Savoys for winter uſe, which will be gone by the time of landing them up; in doing of which you muſt lay the whole five feet of earth into one ridge, except the ground be extreme ſtiff, or the plants young, in both which caſes you may lay only three feet and a half of the ground in the ridge over the roots, and the remainder may be laid in a ſmall ridge between; the ſame compaſs of ground muſt alſo be allowed where they are planted at a wider diſtance.

And if in the ſpring you find your ſtocks ſhoot very weak, which may have been occaſioned either by hard froſt, or too much wet, you muſt then uncover them, and with your ſpade looſen and break the earth about them, raiſing a ſmall hill about each ſtock, levelling the reſt between the rows, which will greatly help them, and in three weeks, or a month's time after, they are commonly fit to ſlip.

Thoſe Artichokes which are planted in a moiſt rich ſoil, will always produce the largeſt and beſt fruit; ſo that where ſuch a ſoil can be obtained, it will be proper to make a freſh plantation every ſpring, to ſucceed the old ſtocks, and ſupply the table in autumn. But the roots will not live through the winter in a moiſt ſoil, ſo that your ſtocks which you intend ſhould remain to ſupply the table early, and to furniſh plants, ſhould be in a drier ſoil. You ſhould always obſerve to plant theſe in an open ſituation, and not under the drip of trees, where they will draw up very tall, and produce ſmall inſignificant fruit.

Winter dreſſing and landing.

Since we have experienced that, in very ſevere froſts theſe roots are ſometimes deſtroyed, therefore it is proper to give ſome directions to prevent it; though this rarely happens in dry ground, in which we have but few inſtances of their being killed, except in the hard froſts of 1683 and 1739-40. In theſe two winters moſt of the Artichokes were deſtroyed in England; in the laſt of theſe winters, it happened from the little care which was taken of them, there having been no froſt for ſo many years before, which had injured them, that few people uſed any care to preſerve them; but after that hard froſt, many people ran into the other extreme of covering all the roots of Artichokes with long dung every winter, which is a very bad method, becauſe the dung lying near the roots is very apt to rot the beſt plants; therefore I would adviſe the earthing (or as it is called by the gardeners, landing) the Artichokes to be deferred till the latter end of november, or the beginning of december, provided the ſeaſon continues mild; and, towards Chriſtmas, if there is any danger of ſevere froſts, to lay a quantity of long dung, Peaſe-haulm, tanners bark, or any other light covering over the ridges of earth, which will keep out the froſt; and this being at a diſtance from the roots, will not injure them; but this covering ſhould be carefully taken off the beginning of february, or ſooner, provided the ſeaſon is mild, or at leaſt ſo ſoon as the weather is ſo, otherwiſe the plants will be injured by its lying too long upon them.

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[h] Mor. hiſt. oxon.

[i] Vahl.

It will alſo be a good method, whenever any roots of Artichokes are dug up in autumn, either to bury them deep in the ground in a pit till ſpring, or lay them in a heap, ſo as that they may be eaſily covered in hard froſts; and theſe may be a ſupply, if thoſe in the ground are deſtroyed.

When you have thus earthed them up, you have nothing more to do till february or march, by which time they will have grown through the ridge of earth; and, when the weather is proper, muſt be dreſſed as was before directed.

Spring Dreſſing.

At the end of february, in march, or the beginning of april, according to the earlineſs of the ſeaſon, or forwardneſs of the old Artichoke roots, will be the proper time for dreſſing them, which muſt be thus performed: with your ſpade remove all the earth from about your ſtock, down below the part from whence the young ſhoots are produced, clearing the earth from between the ſhoots with the hands, ſo as to be able to judge of the goodneſs of each, with their proper poſition upon the ſtock; then make choice of two of the cleareſt, ſtraighteſt, and moſt promiſing plants that are produced from the under part of the ſtock, which are much preferable to the ſtrong thick plants which generally grow upon the crown of the roots; for theſe having hard woody ſtems, never produce good fruit, but are generally what the market people call rogues, which have very little bottom, and the ſcales of their heads are irregularly placed; in ſlipping off the plants you muſt be careful not to injure thoſe which are to remain for a crop; then with your thumb force off all the other plants and buds alſo cloſe to the head of the ſtock, from whence they are produced, being very careful not to leave any of the buds, which will ſoon produce plants ſo as to hurt thoſe which are left: then with your ſpade draw the earth about the two plants which are left, and with your hands cloſe it faſt to each of them, ſeparating them as far aſunder as they can conveniently be placed without breaking them, obſerving to crop off the tops of the leaves which hang down with your hands; your ground being levelled between the ſtocks, you may ſow thereon a ſmall crop of Spinach, which will be taken off before the Artichokes will cover the ground, and be ſure to keep them clear from weeds; and toward the latter end of april, or the beginning of may, when your old plants begin to ſhew their fruit, you muſt carefully look over your ſtocks, and draw up all young plants from them, which may have been produced ſince their dreſſing, and cut off all ſuckers which are produced from the ſtems of the Artichoke, leaving only the principal head, by which means your fruit will be the larger; when your Artichokes are fit to gather, you muſt break or cut them down cloſe to the ſurface of the ground, that your ſtocks may make ſtrong freſh ſhoots before the end of october: the ſeaſon for earthing, or, as the gardeners term it, landing them up, is the middle or latter end of november, which is thus done:

Cut off all the young ſhoots quite cloſe to the ſurface of the ground; then dig between every ſtock, raiſing all the earth between each row of ſtocks into a ridge, as is done in the common method of trenching ground, ſo as that the row of Artichokes may be exactly in the middle of each ridge, this will be ſufficient to guard them againſt froſt; and I would here recommend it to the public, as infinitely preferable to long dung, which is by the unſkilful often uſed, and is the occaſion of their fruit being ſmall, and almoſt without any bottoms to them; for there is not any thing ſo hurtful to theſe, as new dung being either buried near, or laid about them.

[*Additional obſervations.*

Though the Artichoke is perennial, yet after the third or fourth year the heads will become ſmaller, and leſs fleſhy: it is a good method, therefore, to make a freſh plantation every year, to ſucceed the old ones when worn out, and at the ſame time to inſure a ſucceſſion of heads from june to november; for the old plants are over by auguſt, and then the young ones come in. If, however, the Artichokes are ſuffered to remain more than three or four years in the ſame ſpot of ground, it ſhould be well manured in november with rotten dung, and dug a full ſpade deep.

If you are deſirous of having large heads, the ſmall lateral heads ſhould be cut off before they are the ſize of a hen's egg. The latter are by many much eſteemed for the table. When the heads are gathered, the whole ſtalk ſhould be broken down cloſe to the ground, to encourage the ſtools to produce new ſhoots before winter.

The method of earthing or landing the Artichokes before winter is, having firſt cut down all the large leaves to the ground, preſerving only thoſe of the ſmall young ſhoots, to mark out with a line the middle ſpace between the rows, and then to dig the ground a ſpade deep, gradually working the earth towards the row of plants, ſo as to make a ridge, raiſing the earth cloſe about the plants, but not entirely covering their tops. Some, however, only draw a little earth with a hoe about the plants, and when there is froſt throw a little long dung or litter over them; whilſt others do nothing more than lay ſome ſhort dry muck about each plant when hard froſts ſet in. Either of theſe methods are ſufficient in common winters; but in ſevere ones nothing can inſure them but effectually ridging up the earth about them as firſt directed, and covering the ridge with long dry litter.]

3. The Chardon, or Cardoon, is propagated in the kitchen gardens to ſupply the markets; this is annually raiſed from ſeeds, which ſhould be ſown upon a bed of light earth in march; and when the plants come up, they ſhould be thinned where they are too cloſe; and if the plants are wanted, thoſe which are drawn out may be tranſplanted into a bed at about three or four inches diſtance, where they ſhould remain till they are tranſplanted out for good. Theſe young plants muſt be kept clean from weeds, and in the beginning of june they muſt be tranſplanted out, on a moiſt rich ſpot of ground at about four feet aſunder every way; the ground ſhould be well dug before they are planted, and the plants ſhould be well watered until they have taken new root, after which the ground muſt be kept very clean from weeds, to encourage the growth of the plants; and as they advance in height, there ſhould be ſome earth drawn up about each plant; and when they are fully grown, their leaves ſhould be cloſely tied up with a hay-band, and the earth drawn up in hills about each plant, almoſt to their tops, being careful to keep the earth from falling between the leaves, which may occaſion the rotting of the plants. The earth ſhould be ſmoothed over the ſurface that the wet may run off, and not fall into the center of the plants, which will alſo cauſe them to rot; in about eight or ten weeks after the plants have been thus earthed, they will be blanched enough for uſe; ſo that if a ſucceſſion of them are wanted for the table, there ſhould be but few plants earthed up at the ſame time; but once in a fortnight there may be a part of them earthed, in proportion to the quantity deſired.

Toward the middle, or latter end of november, if the froſt ſhould be ſevere, it will be proper to cover the tops of thoſe plants which remain with Peaſe-haulm or ſtraw, to prevent the froſt from penetrating to the tender leaves, which frequently pinches them where there is not this covering, but this ſhould be taken off again in mild weather; if this care is taken, the plants may be preſerved for uſe moſt part of the winter.

If a few of the plants are planted out in a warm ſituation to ſtand for ſeed, they ſhould not be blanched, but only in very hard froſt ſome light litter, or Peaſe-haulm, may be laid round them to keep out froſt, which ſhould be removed in the ſpring, and the ground gently dug between the plants, which will not only deſtroy the weeds, but alſo encourage the roots of the plants to ſhoot out on every ſide, whereby their ſtems will be ſtronger; theſe will flower about the beginning of july, and if the ſeaſon proves dry, their ſeeds will ripen in ſeptember; but in cold wet ſeaſons, theſe ſeeds will not come to maturity in England.

[The ſtalk of the leaf, which is thick and criſp, and by many perſons thought palatable, is the part which is eaten; this is rendered white and tender, by blanching like Celeri, about a yard or more in length: the ſeaſon for it is autumn and winter, and it is uſed in ſalads, ſoups, ſtews, &c. It is, however, now in no great eſtimation here, and therefore not much cultivated.

As this plant does not bear removal very well, the general practiſe now is to ſow the ſeed where it is to remain, in baſins or holes eighteen inches over, and three inches deep, three ſeeds in each hole, thinning out afterwards the two weakeſt plants.

Obſerve not to tye up the leaves for blanching before they are full grown, unleſs they are wanted in ſeptember or october, in which caſe they muſt be tied up, and the earthing muſt be begun in auguſt, but then the ſtalk of the leaf will never be broad and thick, and in that conſiſts its chief excellence. The proper time to begin blanching is at the end of ſeptember or in october, when the plants will come into uſe in december, and continue all the winter.

Obſerve alſo to tie up the leaves in a dry day, to add freſh hay-bands as the plants advance in height, and to cover their tops with long litter if the froſt ſhould be ſevere.]

4. This may be planted in the ſame manner as the preceding, the plants being ſet three or four feet apart. They require only to be kept clean from weeds. They will flower the ſecond year, and if the ſeaſon prove dry, the ſeeds will ripen in ſeptember. They generally decay the following winter, eſpecially if it be ſevere, unleſs they are covered.

[Cynocrambe. See *Mercurialis & Thelygonum.*

Cynoglossa. See *Cynogloſſum & Myoſotis.*

Cynoglossoides. See *Borago.*]

CYNOGLOSSUM. (Κυνος γλωσσα, *Dog's-tongue: from the form of the leaves.*)

Engl. Hound's-tongue.
Fr. Cinogloſe.

Lin. gen. n. 183. *Reich.* 195. *Schreb.* 243. *Gærtn.* 67. *Tourn.* 57. *Juſſ.* 131. Omphalodes. *Tourn.* 58.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Aſperifoliæ.—Borragineæ.* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* five-parted, oblong, acute, permanent.

Cor. one-petalled, funnel-form, length of the calyx. *Tube* cylindric, ſhorter than the border. *Border* half-five-cleft, obtuſe. *Mouth* cloſed with five *ſquamules*, which are convex, prominent, converging.

Stam. *Filaments* five, very ſhort, in the mouth of the corolla. *Anthers* roundiſh, naked.

Pist. *Germs* four. *Style* ſubulate, length of the ſtamens, permanent. *Stigma* emarginate.

Per. none, but four *arils* of the ſeeds, depreſſed, roundiſh, outwardly more obtuſe, ſcabrous, not gaping, on the exterior ſide ſomewhat flattiſh, affixed by their tip.

Seeds as many, ſomewhat ovate, gibbous, acuminate, ſmooth.

Obs. *The eſſential character conſiſts in the four one-ſeeded arils affixed to the ſtyle.*

ESSENTIAL CHARACTER.

Cor. funnel-form, the throat cloſed with arches. *Seeds* flat, affixed to the ſtyle by the inſide only.

SPECIES.

1. Cynogloſſum officinale. *Common or Great Hound's-tongue.*

Lin. ſpec. 192. *Reich.* 390. *fl. ſuec. n.* 162. *mat. med.* 56. *Hudſ. angl.* 80. *With.* 192. *Curtis lond.* 4. 16. *Lightf.* 133. *Hall. helv. n.* 587. *Scop. carn. n.* 191. *Pollich. pal. n.* 188. *Neck. gallob.* 100. *Allion. pedem. n.* 170. *Villars dauph.* 2. 456. *Krock. ſileſ. n.* 277. *Plenck, ic. t.* 78. *Woodv. med. bot. app.* 12. *t.* 216.

C. vulgare. *Bauh. hiſt.* 3. 598. *Dod. pempt.* 54. 1, 2. *Lob. obſ.* 313. *Matth.* 1190. *Cam. epit.* 917. *Raii hiſt.* 489. *Blackw.* 249. *Mor. hiſt.* 488. *ſ.* 11. *t.* 30. *f.* 1, 2.

C. majus vulg. *Bauh. pin.* 257. *Ger.* 659. *emac.* 804. 1. *Park. theat.* 511.

β. C. maximum belgicum. *Bauh. pin.* 257. *Mor. n.* 2. *Raii hiſt.* 490. 3.

γ. C. ſempervirens. *Evergreen Hound's-tongue.* *Bauh. pin.* 257. *Hall. helv. n.* 588. *Pollich. pal. n.* 188. β. *Leyſſer fl. hal. n.* 188. β. *Park. theat.* 512. 5.

C. Dioſcoridis. *Villars dauph.* 2. 457.

Stamens ſhorter than the corolla; leaves broad-lanceolate, attenuated to the baſe, tomentoſe, ſeſſile; calycine ſegments oblong.

2. Cynogloſſum virginicum. *Virginian Hound's-tongue.*

Lin. ſpec. 193. *ſyſt.* 186. *Reich.* 390.

C. fol. amplexicaulibus. *Gron. virg.* 19. *Mor. hiſt. ſ.* 11. *t.* 30. *f.* 9.

Leaves ſpatulate-lanceolate, lucid, three-nerved at the baſe, bracte of the peduncles ſtem-claſping.

3. Cynogloſſum cheirifolium. *Silvery-leaved Hound's-tongue.*

Lin. ſpec. 193. *Reich.* 390. *Scop. carn. n.* 193. *Krock. ſileſ. n.* 278. *Gouan. fl. monſp.* 20. *hort.* 37. *Villars dauph.* 2. 457.

C. creticum 1. *Cluſ. hiſt.* 2. 162. *Ger. emac.* 804. 2. *Bauh. hiſt.* 3. 600. *Raii hiſt.* 492. 9.—argenteo anguſto fol. *Bauh. pin.* 257. *Mor. f.* 6.

Corollas twice the length of the calyx; leaves lanceolate.

4. Cynogloſſum apenninum *Apennine Hound's-tongue.*

Lin. ſpec. 193. *Reich.* 391. *Hall. helv. n.* 588? *Gærtn. fruct.* 324.

Cynogloſſa montana maxima frigidarum regionum. *Col. ecphr.* 1. 168. *t.* 170. *Raii hiſt.* 490.

Stamens equalling the corolla.

[5. Cynogloſſum lævigatum.

Lin. ſyſt. 186. *Reich.* 391. *ſuppl.* 130. *Gærtn. fruct.* 324.

Rindera tetraſpis. *Pallas. it.* 1. *app.* 486. *t.* F. *f.* 1, 2.

Leaves lanceolate-ovate, ſmoothiſh; calyxes tomentoſe; ſeeds gloſſy.]

6. Cynogloſſum luſitanicum. *Portugal Hound's-tongue,* or *Venus's Navel-wort.*

Lin. ſpec. 193. *Reich.* 391. *Vahl. ſymb.* 2. 34. *Mill. fig. t.* 190. *f.* 1.

Omphalodes luſitanica elatior, Cynogloſſi folio. *Tournef. inſt.* 140.

Leaves heart-ſhaped, ſtem-claſping, ſmooth, even about the edge.

7. Cynogloſſum linifolium. *Flax-leaved Hound's-tongue,* or *Venus's Navel-wort.*

Lin. ſpec. 193. *Reich.* 392. *hort. cliff.* 47. *upſ.* 33. *Gouan. hort.* 82. *Retz. obſ.* 1. *n.* 17. *Gærtn.* 324. *Mor.* 11. 30. 11. *Vahl. ſymb.* 2. 35.

Leaves linear-lanceolate, ſmooth, toothletted and rugged about the edge.

8. Cynogloſſum Omphalodes. *Comfrey-leaved Hound's-tongue.*

Lin. ſpec. 193. *Reich.* 392. *hort. cliff.* 47. *Mill. fig. t.* 190. *f.* 2. *Curtis magaz. t.* 7. *Scop. carn. n.* 190. *t.* 3. *Mor.* 11. 26. 3. (*Borrago*).

Symphytum minus, borraginis facie. *Bauh. pin.* 259. *Ger. emac.* 806. 4.

Borrago minor herbariorium. *Park. theat.* 766. 7. *Raii hiſt.* 494. *Bauh. hiſt.* 3. 597. 2.

Creeping; root-leaves cordate.

[9. Cynogloſſum japonicum.

Lin. ſyſt. 187. *Thunb. jap.* 81.

Leaves oblong, villoſe; ſtems proſtrate.]

10. Cynogloſſum pictum. *Painted Hound's-tongue.*

Ait. hort. kew. 179. *Vahl. ſymb.* 2. 34. *Moriſ. blæſ.* 258. *hiſt.* 3. 449. *n.* 3.

C. creticum. *Mill. dict. n.* 3. *Villars dauph.* 2. 457. *Cluſ. hiſt.* 2. 162. 2. *Bauh. hiſt.* 3. 600.—latifolium fœtidum. *Bauh. pin.* 257. *Tournef. inſt.* 140.
Corollas nearly equal to the calyx, ſegments roundiſh-dilated; leaves lanceolate tomentoſe, the upper ones cordate at the baſe.

[11. Cynogloſſum lanceolatum.
Vahl. ſymb. 2. 34. *Forſk. ægypt.* 41.
Leaves lanceolate, drawn to a point at both ends, rugged, with dots on the upper ſurface.

12. Cynogloſſum myoſotoides.
Billard. ic. ſyr. 2. *p.* 6. *t.* 2. *Lamarck. encycl.* 2. 240.
Arils baſket-ſhaped, ſmooth, ſtriated, tubercled, toothed on the edge, leaves hairy, tubercled, entire, root-leaves ſpatulate-lanceolate.

DESCRIPTIONS, &c.

1. The whole plant is downy, and ſoft to the touch. *Root* biennal. *Stem* two or three feet in height, upright, grooved-angular, villoſe, very leafy, branched at top: branches numerous, nearly upright, and villoſe. *Root-leaves* large, a foot or more in length, on petioles, ovate or lanceolate, pointed, covered with a ſilky down which gives them a grayiſh colour, veiny: *ſtem-leaves*, at leaſt the uppermoſt, ſeſſile, half-ſtem-claſping, quite entire, with a waving edge, ſeven or eight inches long, crowded, placed irregularly on the ſtem, upright, lanceolate, and broadeſt at the baſe. *Flowers* at firſt of a dull red, marone or mulberry colour; afterwards becoming blueiſh; growing in racemes, which are nearly upright, and generally naked, or without bractes; and all hanging one way. *Calyx*, ſegments ovate-lanceolate, upright, downy, bluntiſh, ſhining on the inſide. *Corolla*, tube half the length of the calyx: border concave, with roundiſh ſegments: throat perforated: ſquamules or nectareous ſcales anteriorly hollow, gibboſe at top, blunt, inſerted into the edge of the tube, half the length of the border, fringed. *Anthers* oblong, green, hid under the ſcales. *Germs* yellow, or yellowiſh green, ſmooth[a].—According to Scopoli, each raceme has one leaf at its origin; the nectareous ſcales are ſlightly emarginate; the ſtyle is an obtuſely quadrangular pyramid; the ſtigma is ſcored with a line along the middle; the arils or covers of the ſeeds are echinate.

It grows wild by road ſides, and in uncultivated places in moſt parts of Europe. With us it flowers in june and july, and ripens its ſeeds in autumn. The whole plant has a diſagreeable ſmell, much reſembling that of mice. It is ſuſpected to poſſeſs narcotic qualities; and an inſtance is related in the *Hiſtoria Oxonienſis* (3. 450.), in which the leaves, boiled by miſtake for thoſe of Comfrey, diſordered a whole family, and proved fatal to one perſon: others, however, will not admit the fact. It has formerly been uſed in medicine; and Mr. Ray informs us, from Dr. Hulſe, that a decoction of the roots inwardly, and cataplaſms of them outwardly, were uſed in ſtrumous and ſcrophulous caſes. It is, however, diſcarded from the preſent practice[b].

Cattle in general diſlike it; the Goat only is ſaid ſometimes to crop this nauſeous plant. Krocker affirms that all animals leave it untouched except ſheep, which exception muſt ſurely be a miſtake.

It is frequently found with a white flower. β. The large Dutch Hound's-tongue, which is double the ſize of the common ſort, is probably nothing more than a variety ariſing from luxuriancy of ſoil[c].

γ. Evergreen Hound's-tongue is a remarkable variety. The leaves are without nerves, are rougher and much narrower than the common ſort; but it has none of the hoarineſs of that, the leaves therefore are of a full green colour. It has none of that ſtrong ſcent which common Hound's-tongue has. The ſtem has a ſlight hairineſs. The flowers are blue and ſmaller[d].—In ſeveral parts of Germany and Switzerland. With us in the London road between Kelvedon and Witham, but more plentifully about Braxted: about Worceſter: about Southend by Eltham: beyond Waltham-abbey towards Harlow: Norbury near Leatherhead in Surrey. Flowering in april and may.]

2. This riſes with an upright branching ſtem near four feet high; this and the leaves are covered with rough hairs; the branches are ſpread out on every ſide, and are but thinly furniſhed with leaves, from three to near four inches in length, and little more than an inch broad in the middle, gradually leſſening to both ends; they embrace the ſtem, and are alternate. The flowers grow ſcatteringly towards the ends of the branches: they are ſmall and white, appear in june, and are ſucceeded by four ſmall ſeeds, which ripen in autumn, and then the plants decay.—Native of Virginia and other parts of North America.

[Linneus thinks that it is ſcarcely a diſtinct ſpecies from the foregoing, from which it differs only in having the upper ſurface of the leaves ſhining.

Cultivated in 1759, by Mr. Miller[e].

3. Root perennial, branched. Stems ſeveral, a foot high, round, branching; leaves half-ſtem-claſping, obverſely lanceolate, or ſpatulate, quite entire, covered on both ſides with a white ſilvery down, but having none of the tubercles, which occaſion the roughneſs in the firſt ſpecies. Flowers in racemes, without any bractes. Corollas white, with red, blue or purple veins[f].

Native of Sileſia, Carniola, Italy, the South of France, Spain, Gibraltar, and the Levant. It flowers in june and july.

Cultivated 1596 by Gerarde. Biennial[g].]

4. The leaves of this are much larger, the petal of the flower much ſhorter, and the ſtature taller than the firſt ſort; it alſo flowers earlier.

[Gærtner thus deſcribes the ſeeds.—Four nuts, with a leathery cruſt, fixed to a pyramidal receptacle, of an ovate-acuminate form, flattiſh on the upper ſurface (which is even depreſſed in old ſeeds), muricated, with erect little prickles, but gibbous below and on the ſides, roughened with ſharp dots, pale ſtraw-coloured. Seed large, obovate-beaked, below the beak umbilicated, of a brown colour.

Native of the Apennines. Cultivated 1731, by Mr. Miller. It flowers from april to june, and is Biennial[h].

5. Stem erect, a foot in height, ſtriated, panicled at top. Root-leaves petioled, ſoft: ſtem-leaves ſmall, ſeſſile[i].

Nuts four, leathery-membranaceous, ſcutiform on the outſide. Shield ovate, broad, with a membranous edge, radiated with ferruginous lines. The nut itſelf placed in the concave part of the ſhield is ovate-globular, acuminate at top, with an oblong umbilical area in the middle, one-celled and valveleſs. Seed ovate, with a beak, ſomewhat compreſſed, dark-bay[k]. Native of Siberia.

6. This whole plant is very ſmooth. Stem erect, a foot high, round: branches axillary, alternate, quite ſimple. Leaves an inch long, gradually ſmaller upwards, blunt, veinleſs, glaucous-green, nearly of the ſame form with thoſe of Braſſica orientalis. Racemes from the end of the ſtem and branches, without bractes, a hand or more in length. Pedicels remote, filiform, an inch long, ſpreading very much. Calyx deeply five-cleft; ſegments lanceolate, two of them ſomewhat ſmaller than the reſt: they are a little larger than in C. linifolium, without any hairineſs. Corolla as in C. linifolium, with which this plant has been confounded, though they were diſtinguiſhed by Tournefort, the Linnean character agreeing indifferently to either, and being much alike in habit and ſtructure[l].

Native of Portugal. Cultivated in 1731, by Miller.]

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[a] Curtis & Withering.
[b] Ibid. Ibid.
[c] Ray.
[d] Pollich & Withering.
[e] Hort. kew.
[f] Krocker & Scopoli.
[g] Hort. kew.
[h] Ibid.
[i] Linn. ſuppl.
[k] Gærtner.
[l] Vahl.

7. This ſeldom riſes more than five or ſix inches high; the ſtalks do not branch near ſo much as thoſe of the preceding. The leaves are very narrow and long, of a grayiſh colour, and ſmooth. [The root-leaves are petioled, and wedge-ſhaped; the upper ones lanceolate, attenuated at the baſe, rugged, with very minute remote white toothlets about the edge [m]. According to Retzius, they are ciliate, eſpecially on the branches.] The flowers grow in ſhort looſe panicles at the ends of the branches; they are white, like thoſe of the preceding, but ſmaller; and have ſeeds of the ſame form, namely umbilicated, whence theſe plants derived the name of Navel-wort.

[Gærtner thus deſcribes the fruit:

Nuts four, ſmall, with a ſubulate receptacle, bent in as the ſeeds ripen, accumbent, ſomewhat membranaceous, compreſſed, ovate-acuminate, at the edge extenuated into a diaphanous, whitiſh membrane, deeply ſtriated, with a large toothed hole at top. Seed black brown.

Native of Portugal. Cultivated 1731, by Mr. Miller [n].]

8. Root perennial. Branches trailing, and putting out roots from the joints. Leaves bright green, on long ſlender foot-ſtalks. Flowers ſhaped like thoſe of Borage, but ſmaller, and of a lively blue colour.

[Flower-ſtem ſimple, half a foot in height, not creeping itſelf, but putting out long runners from the baſe, during ſummer. The leaves on that are oval, not cordate, as the root-leaves are. Racemes axillary, with very few flowers. Corollas ſalver-ſhaped, ſix lines in diameter, with a tube one line only in length, obtuſely pentangular: the throat has a white ſtar formed of five heart-ſhaped plaits: ſtyle cylindric; ſtigma hemiſphæric, of the ſame colour with the ſtyle. Receptacle with a rim round it. Capſules (or arils) ſomewhat villoſe, with an elliptic hole in the middle: ſeldom all fertile (which is alſo the caſe in the common Hound's-tongue). Sometimes there are two ſeeds in one capſule (or aril); and then the baſe of the capſule is two-celled [o].

Native of the South of Europe, in woods: flowering about Chriſtmas. Cultivated in 1633; and flowering here from march to may [p].

9. Root annual. Stems four or five, round, villoſe, flexuoſe and erect, unequal. Leaves ſtem-claſping, acute, very finely ſerrate, ſpreading; root-leaves near a finger's length; branch-leaves gradually ſmaller. Flowers terminating, in racemes. Calyx wholly villoſe. Corolla purple, longer than the calyx. Style ſimple, with an obtuſe ſtigma. Native of Japan [q].

10. Leaves much ſhorter, ſofter, and more hoary than thoſe of the common ſort. Stems a foot and half in height, more branched. Seeds ſmaller.

It reſembles the common ſpecies ſo much, that it is no wonder they have been confounded by thoſe who have not ſeen both. It agrees with C. officinale in habit, ſize, and manner of growth, but differs in having the leaves not narrowed at the baſe, but cordate [r]; and the flowers pale blue or pale purple, beautifully painted with darker veins. Perennial, and flowering in auguſt. Native of the South of Europe, and of Barbary; alſo of Madeira, where it was found by Mr. Maſſon; and whence it was introduced 1777 [s].] Mr. Miller ſays it grows naturally in Andaluſia, and that he received the ſeeds from Gibraltar.

11. This has the appearance of the common ſort, but differs from it in having all the leaves ſharp at both ends. Stem herbaceous, upright, angular, rough with hairs, hoary at top. Lower leaves drawn out into a petiole an inch in length; upper ones ſeſſile, veiny-nerved, the upper ſurface having dots and white hairs ſcattered over it, the lower aſh-coloured, with more crowded hairs, but not ſoft. Calyxes hirſute, with oblong ſegments [t].

Native of Egypt.

12. Root perennial. Stems uſually ſeveral, filiform, aſcending, ſcarcely half a foot high, hairy, uſually ſimple. Leaves rough, next the root petioled, on the ſtem ſeſſile, linear-lanceolate. Flowers in looſe ſpikes, pedicelled, erect, ſolitary. Calyx hairy, with ſubovate ſegments. Corolla very ſmall, ſcarcely longer than the calyx, blue; tube very ſhort; ſegments of the border rounded; ſcales cloſing the mouth, glandular. Arils, whilſt unripe, fixed to a pyramidal four-cornered receptacle. Seeds flatted, ovate, acute, ſmooth. Native of mount Libanus or Lebanon, on the very ſummit [u].]

PROPAGATION AND CULTURE.

1. The firſt ſort, being a common weed, is not admitted into gardens: it is ſometimes gathered in the fields by the herbariſts.

2 to 5, 10. Being hardy plants, where the ſeeds are permitted to ſcatter, they will ariſe plentifully without much care.

6, 7. Are annual plants, commonly ſown in gardens, with other low annual flowers, to adorn the borders of the flower-garden; but the ſeeds ſhould be ſown in autumn, for thoſe which are ſown in the ſpring often fail, eſpecially in dry ſeaſons; and the autumnal plants always grow much larger, and flower earlier. The ſeeds ſhould be ſown where the plants are deſigned to remain, for they do not bear tranſplanting, unleſs it be performed whilſt they are young. The plants require no other culture but to be thinned where they are too cloſe, and kept clean from weeds. They flower in june and july, and the autumnal plants come a month earlier. The ſeeds ripen in autumn.

8. This propagates very faſt by its trailing roots, which require to be kept within compaſs; on this account it ſeldom produces ſeeds. It delights in a moiſt cool ſituation.

[CYNOGLOSSUM. See *Borago*, *Myoſotis*, *Pulmonaria*.

CYNOMETRA. (*From* κυων *and* μητρα, *vulva canis.*

Lin. gen. n. 519. *Reich.* 562. *Schreb.* 710. *Juſſ.* 350. *Gærtn. t.* 156. *Cynomorium. Garc.*

Claſſ. 10. 1. Decandria Monogynia.

Nat. order of *Leguminoſæ*. Juſſieu.

GENERIC CHARACTER.

CAL. *Perianth* four-leaved, oblong, reflex, length of the corolla.

COR. *Petals* five, lanceolate, equal, acute.

STAM. *Filaments* ten, twice the length of the corolla. *Anthers* oval, two-cleft at the tip.

PIST. *Germ* boat-form; *Style* filiform, length of the ſtamens. *Stigma* ſimple.

PER. *Legume* creſcent-ſhaped, compreſſed, fleſhy, tuberculate.

SEED ſingle, kidney-form, large.

ESSENTIAL CHARACTER.

Cal. four-leaved. *Anth.* bifid at the tip. *Legume* fleſhy, creſcent-ſhaped, one-ſeeded.

SPECIES.

1. Cynometra cauliflora.

Lin. ſpec. 547. *Reich.* 2. 263. *fl. zeyl. n.* 166. *Gærtn. fruct.* 2. 350.

Cynomorium. *Rumph. amb.* 1. 163. *t.* 62. *Burm. ind.* 100.

Trunk floriferous.

2. Cynometra ramiflora.

Lin. ſpec. 547. *Reich.* 2. 263. *fl. zeyl. n.* 167.

C. ſylveſtre. *Rumph. amb.* 1. 164. *t.* 63.

Iripa. *Rheed. mal.* 4. 65. *t.* 31. *Raii hiſt.* 1675. *Burm. ind.* 100.

Branches floriferous.

DESCRIPTIONS, *&c.*

Theſe trees are natives of the Eaſt-Indies. Their leaves are conjugate; and the peduncles are many-flowered.

1. Roots knotty and large, appearing above ground, and having ſmaller ones between them, which are curled, and look like pig's tails. Trunk

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[m] Vahl.
[n] Hort. kew.
[o] Scopoli.
[p] Hort. kew.
[q] Thunberg.
[r] Vahl.
[s] Hort. kew.
[t] Vahl.
[u] Billardiere.

very ſhort, ſeldom two feet high, very irregular, rugged, unequal, ugly, in hills and holes, covered with a thick, hard, cloven bark, the colour of Liverwort. The head is not large, but thick; it conſiſts of thick long branches, ſubdivided into many others at the end, the extreme of which only bear the leaves: theſe are alternate, in pairs, on very ſhort petioles, three or four inches long, and an inch and half wide, entire, ſmooth, firm, flexible, acuminate; rib ſtraight, prominent on both ſides, dividing the leaf into two very unequal ſegments. The flowers come out on the trunk and large branches, and on the root when above ground; the corolla is ſmall and white[a].

The fruit is thus deſcribed by Gærtner. It is a Legume, fleſhy, large, the ſize of half the palm of the hand and more, in the ſhape of a half moon, compreſſed like a lens, with a groove, like a ſuture, along its whole circuit, on the ſides tubercled, rough to the touch like a woollen cloth, one-celled, not opening. Seed of the ſame ſhape with the cavity of the legume, ſmooth, marked with capillary arched veſſels ariſing from the umbilicus, of a red ferruginous colour, faſtened to the ſhell by a ſhort thick chord at the middle of the ſtraight ſuture. Skin ſingle, leathery, thin, in old ſeeds ſcarcely ſeparable from the kernel by boiling water. Albumen none. Embryo of the ſame ſhape with the ſeed, white: cotyledons plano-convex, with a little hole on the inſide where the radicle is placed: plume ſlender, two-horned, with very ſhort ſoft fulvous or red-ferruginous villoſe hairs about its baſe, by which the radicle is ſeparated to the diſtance of half a line from the cotyledons: radicle conic, immerſed, centrifugal.

2. This is a lofty tree, ſixty feet in height; trunk thick, ſolid, aſh-coloured; bark blackiſh, within red; branches many, aſh-coloured or greeniſh. Leaves in a double parallel row, roundiſh, ſmooth, the upper ſurface dark green and ſhining, the lower paler green, with many ſmall nerves from the midrib ſtanding out, dividing the leaf unequally, and running obliquely to the ſides. Smell none; taſte ſubaſtringent. The flowers come out ſcatteringly from the ſmall branches among the leaves; they are ſmall, white, and without ſcent. Petals four, acuminate. Stamens eight, with red anthers. Fruit oblong, compreſſed, unequal, grooved, not unlike a gourd, covered with a thick, leathery, fleſhy, ſoft rind, ſomewhat like that of the almond, opening on each ſide. Kernel whitiſh, compact, covered with a thin pellicle; it has no ſmell, and has an aſtringent taſte.

In Malabar. It is always green, and bears flowers and fruits in auguſt and november[b].

CYNOMORIUM. (*A canini genitalis ſimilitudine. Mich.*)
Lin. gen. n. 1033. *Reich.* 1126. *Schreb.* 1394. *Mich.* 12. *Amœn. acad.* 7. *p.* 357. *Juſſ.* 445.
Claſſ. 21. 1. Monoecia Monandria.
Nat. order of *Amentaceæ*.

GENERIC CHARACTER.

* *Male flowers* diſpoſed in an imbricated ament with the female ones.

Cal. *Ament* erect, club-ſhaped, on every ſide covered with floſcules.
Perianth proper, four-leaved: *leaflets* three clavate, and the fourth inferior one larger, very obtuſe, channelled.

Cor. none.

Stam. *Filaments* ſingle, firm, ſtraight, longer than the calycine ſcale. *Anther* twin.

* *Female flowers* mixed with the males in the ſame plant, and ſcarce remote from them.

Cal. *Ament* common with the males.
Perianth proper ſuperior: *leaflets* four, club-ſhaped, tuberculated, equal, permanent.

Cor. none.

Pist. *Germ* ovate, inferior. *Style* ſingle, erect, firm, ſpreading, length of the calycine ſcale. *Stigma* obtuſe.

Per. none.

Seed ſingle, roundiſh.

Obs. *I have alſo ſeen hermaphrodite monandrous ſlorets intermixed with the others: The whole plant is a ſingle ament.*

ESSENTIAL CHARACTER.

Male. *Cal.* an imbricate ament. *Cor.* none.

Fem. *Cal.* in the ſame ament. *Cor.* none. *Style* one. *Seed* one, roundiſh.

SPECIES.

1. Cynomorium coccineum.
Lin. ſpec. 1375. *Reich.* 4. 89. *amœn.* 4. 351. *t.* 2. *mat. med.* 199. *Mich. gen.* 17. *t.* 12. *Pet. gaz. t.* 39. *f.* 8. *Tilli piſan. t.* 25. *Bocc. muſ.* 2. 69. *ſic. t.* 81.
Stipe ſcaly, ament cylindrical, ſcales imbricate, ovate retuſe.

2. Cynomorium jamaicenſe.
Swartz prodr. 12. *Brown. jam.* 334.
Stipe ſcaly, ament elongated, ſcales imbricate, halved, rhomboidal.

3. Cynomorium cayanenſe.
Swartz prodr. 12.
Stipe naked, ament ſubglobular, ſcales roundiſh, peltate.

DESCRIPTIONS, *&c.*

1. This is a fungiform plant, the whole conſiſting of a long, thick, radical ſpadix, growing upon the roots of trees in ſalt marſhes, under water[c]. Stem commonly half a foot long, upright, ſolid, tough, as thick as the finger, when young covered with ovate, acute, imbricate, white ſcales, which it moſtly puts off at flowering time, ſo as to be then almoſt naked, wrinkled, unequal, and the whole, when dried, purple. A ſpike terminates this ſtem, frequently as long as the ſtem itſelf, but twice its breadth, with ſcales or bractes, in the axils of which the flowers ſit cloſe[d].

Native of Barbary, on the coaſt, at the roots of Lentiſcus, Myrtle, &c. Sicily, Malta, Cadiz, &c. on Halimus or Portulaca marina, &c.

2. It grows in beds, and riſes generally to the height of three, four, or five inches; but is commonly ſmalleſt towards the bottom. At firſt it is covered pretty thick with ſcales of the figure of a heart, which fall off gradually as it riſes, and expoſe the body of the plant thickly beſet with little tranſparent denticles, intermixed with a few tubular trifid flowers, that jet above the level of the ſurface. The ſtem is ſucculent and fleſhy, and all the parts aſtringent. Jamaica; ſeldom met with but in the moſt ſhady inland woods[e].

3. Native of Cayenne[f].

Cynomorium. See *Cynometra.*

Cynophallophorus. See *Capparis.*

Cynops. See *Plantago.*

Cynorynchium. See *Chelone.*

Cynosorchis. See *Orchis.*

CYNOSURUS, (κυνος ουρα, *Dog's-tail.*)
Lin. gen. n. 87. *Reich.* 93. *Schreb.* 118. *Juſſ.* 31. *Gærtn. t.* 1. & Eleuſine, *t.* 1.
Claſſ. 3. 2. Triandria Digynia.
Nat. order of *Gramina, Gramineæ,* or *Graſſes.*

GENERIC CHARACTER.

Cal. *Receptacle common* unilateral, (often) leafy.
Involucre (in ſome) one-leafed, lateral.
Glume many-flowered, two-valved: *Valves* linear, acuminate, equal.

Cor. two-valved: the *outer* concave, longer: the *inner* flat, awnleſs.
Nectary two-leaved: *leaflets* ovate, acute, gibbous at the baſe.

Stam. *Filaments* three, capillary. *Anthers* oblong.

Pist. *Germ* turbinate. *Styles* two, villoſe, reflex. *Stigmas* ſimple.

Per. none. *Corolla* cloſely coating over the ſeed, and not gaping.

Seed ſingle, oblong, acuminate to each end.

Obs.

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[a] Rumphius.

[b] Hort. malab.

[c] Juſſieu.

[d] Linn. amoen.

[e] Browne.

[f] Swartz.

Obs. *The Involucres in moſt ſpecies are pinnatifid, or of a pectinate form.*

In the different ſpecies the number of floſcules is different.

Eleuſine of Gærtner *differs in having the ſeed included in a membrane.*

ESSENTIAL CHARACTER.

Cal. two-valved, many-flowered. (two or four-flowered. *G.*) *Recept.* proper unilateral, leafy.

SPECIES.

1. Cynoſurus criſtatus. *Creſted Dog's-tail graſs.*
Lin. ſpec. 105. *Reich.* 198. *hort. cliff.* 493. *Hudſ. angl.* 59. *With.* 95. *Hall. helv. n.* 1545. *Pollich pal. n.* 99. *Neck. gallob.* 57. *Leers herborn. n.* 99. *t.* 7. *f.* 4. *Krock. ſileſ. n.* 149. *Villars dauph.* 2. 91. *Schreb. gram.* 69. *t.* 8. *f.* 1. *Fl. dan. t.* 238. *Barrel. ic.* 27. *n.* 11. *Stilling. miſc. t.* 11. *Curtis pract. obſ. t.* 6. *Fl. ruſt. t.* 106. *Muſ. ruſt.* 4. *t.* 2. *f.* 2. *Anderſon t.* 10.
Phleum criſtatum. *Scop. carn. n.* 81.
G. criſtatum. *Bauh. hiſt.* 2. 468. 3. *Raii hiſt.* 1269. *ſyn.* 398.—anglicum. *Park. theat.* 1159. *f.* 1160. 3. *Mor.* 3. 194. *n.* 6.
G. pratenſe criſt. &c. *Bauh. pin.* 3. 1. *prodr.* 8. *theat.* 43. *Scheuch. gram.* 79. *t.* 2. *f.* 8. A. C. *Mor. ſ.* 8. *t.* 4. *f.* 6.
Bractes pinnatifid.

2. Cynoſurus echinatus. *Rough Dog's-tail graſs.*
Lin. ſpec. 105. *ſyſt.* 116. *Reich.* 198. *Hudſ. angl.* 59. *With.* 95. *Hall. helv. n.* 1546. *Scop. carn. n.* 97. *Krock. ſileſ. n.* 152. *Gærtn. fruct.* 1. 5. *Villars dauph.* 2. 92.
G. alopecuroides ſpica aſpera. *Bauh. pin.* 4. *theat.* 59. *prodr.* 10. *Scheuch.* 80. *t.* 2. *f.* 8. B. D. *Park. theat.* 1168. 6. *Barr. rar. t.* 123. *f.* 2. *Raii hiſt.* 1265. *ſyn.* 397. *Mor. ſ.* 8. *t.* 4. *f.* 13.
G. cum cauda leporis aſpera, &c. *Bauh. hiſt.* 2. 474. 1.
Bractes pinnate-chaffy, awned.

3. Cynoſurus Lima. *Imbricate Dog's-tail graſs.*
Lin. ſpec. 105. *Reich.* 199. *Loefl. itin.* 41. *Cavan. hiſp.* 62. *n.* 100. *t.* 91.
Spike facing one way, the inner glume of the calyx lying below the ſpikelets.

4. Cynoſurus durus. *Rigid Dog's-tail graſs.*
Lin. ſpec. 105. *Reich.* 199. *Hall. helv. n.* 1419. (Lolium). *Pollich. pal. n.* 100. *t.* 1. *f.* 1. *Krock. ſileſ. n.* 150. *t.* 28.
Poa dura. *Scop. carn. n.* 101.
G. loliaceum minus ſup. ſp. multiplici. *Bauh. prodr.* 19.
G. arvenſe, &c. *Barrel. ic.* 1213. *t.* 50.
Spicules one-ranked, alternate, ſeſſile, rigid, obtuſe, preſſed cloſe.

5. Cynoſurus ſphærocephalus.
Lin. ſyſt. 117. *Jacqu. miſc.* 2. 71.
Seſleria ſphærocephala. *Arduini ſpec.* 20. *t.* 20.
Bractes entire, ſpikes globular.

6. Cynoſurus cæruleus. *Blue Dog's-tail graſs.*
Lin. ſpec. 106. *ſyſt.* 117. *Reich.* 199. *hort. cliff.* 495. *fl. ſuec. n.* 89. *Hudſ. angl.* 59. *Jacqu. miſc.* 2. 66. *icon. rar. Gouan. illuſtr.* 4. *Krock. ſileſ. n.* 151. *Fl. ruſt. t.* 20.
Seſleria cærulea. *Scop. carn. n.* 90. *Hall. helv. n.* 1446. *Ard. ſpec.* 2. 18. *t.* 6. *f.* 3, 4, 5. *With.* 84.
Aira varia. *Jacqu. vind.* 15.
Gramen glumis variis. *Bauh. pin.* 10. *prodr.* 21. 1. *theat.* 158. *Scheuch.* 83. *t.* 2. *f.* 9. A. B. *Raii ſyn.* 399. 4. *Park. theat.* 1152. *f.* 6.
Bractes entire, ſpikes ſubovate.

7. Cynoſurus Uniolæ.
Lin. ſyſt. 117. *ſuppl.* 110.
Without bractes; ſpike turned one way; ſpikelets in two rows, alternate, preſſed cloſe, ovate, keeled, oblique.

8. Cynoſurus coracanus. *Thick-ſpiked Dog's-tail graſs.*
Lin. ſpec. 106. *ſyſt.* 117. *Reich.* 200. *Schreb. gram.* 2. 71. *t.* 35. *Rumph. amb.* 5. 203. *t.* 76. *f.* 2. (Panicum). *Rheed. mal.* 12. *t.* 78.
Eleuſine coracana. *Gærtn. fruct.* 1. 8.
Gr. dactylon ægyptiacum. *Bauh. pin.* 7. *theat.* 110. —americanum minus. *Scheuch. gram.* 107.—orientale, &c. *Pluk. alm.* 174. *t.* 91. *f.* 2. *Raii ſuppl.* 606.
Spikes digitate, incurved, culm compreſſed, erect, leaves nearly oppoſite.

9. Cynoſurus ægyptius. *Creeping Dog's-tail graſs.*
Lin. ſpec. 106. *ſyſt.* 117. *Reich.* 200. *Lour. cochinch.* 59. *Pluk. alm. t.* 300. *f.* 8. *Mor. hiſt. ſ.* 8. *t.* 3. *f.* 7. *Scheuch. gram.* 109. *Burm. ind.* 28. *Bont. jav.* 148. *Rumph. amb.* 6. *t.* 4. *f.* 1.
Spikes digitate, in fours, obtuſe, ſpreading very much, mucronate; ſtem creeping; leaves oppoſite.

10. Cynoſurus indicus. *Indian Dog's-tail graſs.*
Lin. ſpec. 106. *ſyſt.* 117. *Reich.* 201. *Vahl ſymb.* 2. 21. *Lour. cochinch.* 59. *Burm. zeyl.* 106. *t.* 47. *f.* 1. *Rumph. amb.* 6. *t.* 4. *f.* 2. *Rheed. mal.* 12. *t.* 69. *Forſk. ægypt.* 18. (Panicum).
Eleuſine indica. *Gærtn. fruct.* 8.
Spikes digitate, linear, culm compreſſed, declined, knotty at the baſe, leaves alternate.

11. Cynoſurus virgatus. *Fine ſpiked Dog's-tail graſs.*
Lin. ſpec. 106. *Reich.* 201. *amœn.* 5. 393. *Brown. jam.* 137. *Sloan. jam.* 1. 113. *t.* 70. *f.* 2.
Panicle with ſimple branches; flowers ſeſſile, ſix together, the laſt barren, the loweſt ſometimes awned.

12. Cynoſurus domingenſis.
Lin. ſyſt. 117. *Jacqu. miſc.* 2. 363.
Panicle with ſimple branches, ſpikelets ſubſeſſile, ſix-flowered, all the flowers awned.

13. Cynoſurus aureus. *Golden-ſpiked Dog's-tail graſs.*
Lin. ſpec. 107. *Reich.* 201. *Murr. prodr.* 138. *Shaw. afr. f.* 232. *Barr. rar.* 1180. *t.* 4.
Gr. panic. pendula aurea. *Bauh. pin.* 3. *theat.* 33. *Scheuch. gram.* 149.
Panicles with barren pendulous ternate ſpikelets, flowers awned.

14. Cynoſurus erucæformis. *Linear-ſpiked Dog's-tail graſs.*
Ait. hort. kew. 105.
Phalaris erucæformis. *Lin. ſpec.* 80. *Gmel. ſib.* 1. *t.* 29. *Barr. rar.* 1158. *t.* 2.
Spike compound; ſpikelets ſcattered, the fruit-bearing ones erect; calyxes one and two-flowered, glumes obtuſe, boat-ſhaped, keel obtuſe; corollas acuminate.

15. Cynoſurus retroflexus.
Vahl ſymb. 2. 20.
Spike compound, ſpikelets aggregate, calyxes two-flowered, awned, corollas awnleſs.

16. Cynoſurus filiformis.
Vahl ſymb. 2. 20.
Spike ſolitary diſtich, calyxes awl-ſhaped, three-flowered, barren floret awnleſs.

17. Cynoſurus monoſtachyos.
Vahl ſymb. 2. 20.
Spike terminating, calyxes awl-ſhaped, awnleſs, ſubtriflorous, florets awned, one-ſided.

18. Cynoſurus penicillatus.
Vahl ſymb. 2. 21.
Spikes digitate, calyxes four-flowered, awned at the back, outer petals of the hermaphrodite awned, with bearded pencils.

19. Cynoſurus paſpaloides.
Vahl ſymb. 2. 21. *t.* 27.
Spikes digitate, calyxes two-flowered, ſubglobular, outer valve of the calyx awned, corollas awnleſs.

20. Cynoſurus floccifolius.
Vahl ſymb. 1. 10. *Forſk. ægypt.* 21. *n.* 73.
Spikes linear, ſtraight, leaves doubled together, alternately bearded on the edge.

DESCRIPTIONS, &c.

1. *Root* perennial. *Culms* from one to two feet in height, erect, ſtrict, having three or four joints, ſmooth and even. *Leaves* narrow, flat, ſmooth on both ſides, ſcarcely rough at the edge: *ligule* ſhort, ſlender, truncate, cloven, with the edge a little prominent: *ſheaths* ſtriated, ſmooth and even. *Spike*

compound, when in flower ſemicylindric, facing one way, obtuſe: when out of flower interrupted, awnleſs. *Rachis* flexuoſe, twiſted. *Peduncles* ſhort, ſolitary, alternate, unilateral, in a double row; having three ſpikelets (ſometimes five), and always three *bractes,* which are feathered, from convex flat, and ſubſeſſile, made up of an axis which is ſomewhat flexuoſe, and ſeven or nine pinnules; each, when magnified, has the appearance of a diſtich ſpikelet, with ſubulate, alternate, compreſſed, awned, ſcabrous valves. *Spikelets* two-flowered, rarely three-flowered, ſmaller than the bractes. *Calyx* ſlightly unequal, keeled, mucronate; the outer valve remote from the other at the baſe, bowed upwards, more ſcabrous. *Florets* ſlightly awned. *Anthers* red or purple. *Styles* naked at the baſe [a].

According to Pollich, the leaves are near half a foot in length, above two lines in breadth, and roughiſh if the fingers be moved from the point towards the baſe. Ligule entire. Panicle (or ſpike) three or four inches in length, and as many lines in breadth. Outer valve of the glume has an awn at the end ſcarcely a quarter of a line in length. Stigmas white, feathered.

Common in dry paſtures; flowering in july and auguſt, and called *Bent-graſs,* in common with many others: in Scotland *Windleſtraw-graſs.* Moſt modern writers, ecchoing Stillingfleet, have celebrated this graſs as excellent for ſheep. Mr. Curtis juſtly thinks leſs favourably of it, and conſiders it as greatly inferior to many other graſſes. It is predominant on ſheep downs, and in many parks, but is late and unproductive.

Mr. Ray (ſyn. 399. 3.) ſets down a variety of this, which he calls *Square Creſted-graſs,* becauſe the ſpike has four rows of flowers. It was found by Mr. Dale, in the fields at Notley in Eſſex.

2. Raceme glomerate, pointing one way. Bractes only on the outſide of the flowers, alternately pinnate, one-flowered, the rays ending in an awn. Calyx two-flowered, membranaceous, very much attenuated at the tip. Corolla has a ſtraight awn on the outer tip. Style bifid [b].

According to Gærtner, the calyx is ſometimes three-flowered, very thin, oblong, acuminate; the corolla ſomewhat rigid, the inner glume flattiſh, acuminate, the outer concave, awned below the tip; awn briſtle-ſhaped, ſtraight, twice as long as the calyx. Seed oblong, acuminate at both ends, pubeſcent at the tip, convex on one ſide and ſmooth, concave on the other, marked with an obſcure raiſed line, bay-colour or rufeſcent.

Villars remarks, that it is ill-named *echinate,* for the ſpike is rather lanuginoſe, than beſet with prickles: he adds, that it is ſometimes very tall among the corn, and that he has ſeen it on a rock only two or three inches high.

Native of Europe and the Levant.—Near Sandwich, and in Jerſey, in a ſandy ſoil, flowering in july. Annual.

3. Scarcely a ſpan in height. Leaf ſmall, the ſheath ſwelling a little. Spike cloſely imbricate, oblong, compoſed of ſeſſile flowers, compreſſed and keeled, directed one way, in a double row: the outer calycine valve is compreſſed, and larger than the other: each flower conſiſts of five florets [c]. Culms ſlender, upright. Leaves ſhorter than the ſheath, acute, the edges rolled inwards as they advance in age ſo as to appear ruſhy. Spike ſolitary, an inch and half long. Calyx one or two-flowered; valves awl-ſhaped, long, the outer keeled, compreſſed, and longer than the other. Outer valve of the corolla keeled, ſharp, inner ſhorter, flat. Seed oblong, ſharp at both ends [d].

Native of Spain; flowering in may. Annual. With us it flowers in july and auguſt.—Introduced in 1776, by M. Thouin [e].

4. Culms few, ſcarcely a palm in height, procumbent. Leaves even. Spikelets in two rows, pointing the ſame way, without an involucre; they are ſtiff, three-flowered, linear, obtuſe, even. Florets compreſſed, awnleſs [f]. Culms many, a finger's length, very ſtiff. The upper leaves longeſt. Flowering-ſpike ſtraight, ſtiff, compoſed of imbricate, hard, compreſſed, lanceolate ſpikelets. Calyx awnleſs, ſmooth, ſhorter than the petals, with unequal glumes. Petals alſo unequal; one obtuſe, the other acuminate. Styles two or three. There is a third or fourth flower, often incomplete. The plant when adult, is entirely of a brown or bay colour [g].

Scopoli not finding any character of this genus in it, has removed it to the Poas: and Pollich, though he leaves it with the *Cynoſuri,* approves the removal.

Native of the ſouthern parts of Europe: in Carniola, Switzerland, the Palatinate, Sileſia, and other parts of Germany. Annual, flowering in may and june; with us in july.—Introduced 1776, by Monſ. Thouin [h].

5. Root, culms and leaves as in C. cæruleus, except that the culm is much more tender, and ſomewhat ſhorter; the leaves three or four times narrower, flat, and of a paler colour. The ſpike reſembles a head of Garlic. Univerſal involucre three-leaved; leaflets membranaceous, ſeſſile, ſuborbicular, concave, jagged-toothed at top, in the other parts entire, very pale blue, turning whitiſh, and becoming tranſparent. Spikelets imbricate every way, and ſubſeſſile. Calyx two or three-flowered; glumes nearly equal, at firſt longer than the corolla, but afterwards ſhorter, blue, with white edges, ending in a ſort of creſt, and ciliate on the middle of the back. Outer valve of the corolla larger, blue, white, and membranaceous on the edge, ciliate along the middle of the back, ending in three little creſts of the ſame colour, the middle one twice or thrice the length of the others. Inner valve ſhorter, flattiſh, with blue edges, forked, with two greeniſh keels along the middle of the back. Native of the Alps. There is a variety with white flowers in larger heads [*].

6. Culms oblique, ſurrounded at the baſe with a bundle of root-leaves incloſed in a whitiſh brown wrinkled ſkin, giving the appearance of a branched root; above bare of leaves. Panicle reſembling a ſpike, of an ovate-oblong form. Florets on ſhort peduncles, purpliſh, livid, or browniſh white, from half an inch to an inch in length. Involucre roundiſh, embracing the ſtalk, gnawed, membranaceous, ſhorter, but thrice as wide as the calyx; the lower one at the baſe of the ſpike, the other a little higher up at the baſe of the florets of the oppoſite ſide. Calyx moſtly two-flowered, ſometimes juſt longer, and ſometimes juſt ſhorter than the florets; edges and keel bearded. Valves of the corolla equal, with the edges and keel bearded: outer with five ribs, four-toothed, ending in awn-like points, the two middle ones ſhorter, with the keel running out from between them into a ſhort awn twice as long as the teeth. Anthers whitiſh, cloven at the baſe. Germ reddiſh brown. Seed hairy [i].

To this we may add, that the root is perennial; the culms ſlender, from two to ſix inches, and a ſpan in height, having three joints, with a very ſhort leaf at each. Leaves bluiſh ſea-green, from half an inch to three inches in length, keeled, and rough along the edges. Spike of a reddiſh purple colour, ſometimes browniſh white, or entirely white. Calyx, though uſually two-flowered, has ſometimes one, and ſometimes three florets. Anthers deeply cloven at both ends, yellow except at one end, where they are purple.

There is much diſſention about the genus of this graſs. Jacquin made it an *aira*; and Scopoli obſerves, that in its manner of flowering it reſembles that genus, but that it has the appearance of Anthoxanthum, and is very nearly allied to the Phleums:

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[a] Leers.
[b] Linn. ſyſt.
[c] Linn. ſpec.
[d] Cavanilles.
[e] Hort. kew.
[f] Linn. ſpec.
[g] Scopoli.
[h] Hort. kew.
[*] Jacquin.
[i] Stokes in Withering.

he made it a diſtinct genus, under the name of *Seſleria*, and has been followed by Scopoli, Arduini, Withering, &c.

Native of Europe in mountainous and boggy paſtures. In the north of England, on the higheſt lime-ſtone rocks, as Ingleborough, &c.

The firſt notice of it we have is from Mr. Ray, who received it from Mr. Petiver, to whom it was ſent out of the north, by Mr. Fitz-Roberts. It flowers the earlieſt of all our graſſes. In the ſpring of 1792 the ſpikes were puſhing vigorouſly on the 16th of march, and it was in full flower on the 29th. This would recommend it for culture, if it were not of low growth. Foreign authors deſcribe it as being larger than we find it to be.

7. A very ſmooth graſs, with the appearance of *Uniola*, but the calyx is bivalved, not many-valved. Spike linear. Spikelets ſeſſile, preſſed cloſe to the rachis, in two rows, alternate, ſpreading at the ſides, oblique, very ſmooth, many-flowered.—Native of the Cape of Good Hope[k].

8. Annual. Culms four feet high, covered with leaf-ſtalks. Leaves long, in two rows, the edge and upper ſurface, eſpecially towards the fauces, villoſe with a few long hairs; ſheaths oppoſite, compreſſed, ſtem-claſping. Spikes four or ſix, terminating, (ſometimes one below) ſtriated, almoſt erect, the length of the finger; as they ripen growing broader, and often bent in. Rachis of the ſpikelets depreſſed, with the flowers alternate on the inſide, ſeſſile on the outſide. Flowers ovate-oblong, compreſſed, awnleſs, preſſed cloſe to the rachis. Calyxes four-flowered, the inner valve lower and ſmaller, but both compreſſed and keeled, like the corolla. Seeds nearly globular, large, in four rows, ſwelling, naked.—Native of India[l], and Japan, where it is cultivated for the eatable ſeeds[m].

According to Gærtner, one globular, ſmooth ſeed, of a ferruginous red colour, is covered by an ovate-globular, membranaceous, thin, diaphanous, one-celled, valveleſs capſule.

It flowers from july to ſeptember; and was cultivated in 1714, by the Dutcheſs of Beaufort[n].

9. Culm even, ſlender, long, pale, jointed, bent and procumbent at the joints, ſmooth, and very tough, with many ſhort upright branches. Leaves awl-ſhaped. Spikelets four or five, horizontal, with a mucronate rachis extended beyond the flowers, which are alternate and diſtich. Calyxes two-flowered and awnleſs. Valves of the calyx acuminate, keeled, unequal[o].

Native of Aſia, Africa, and America. Annual; flowering from july to ſeptember. Introduced 1770, by Monſ. Richard[p].

10. Culm ſlender, almoſt upright, reddiſh, ſometimes creeping, leafy. Leaves many, ſmall, ſtiff[q]. Spikes heaped, linear, four or ſix from horizontal ſpreading, from a thick baſe growing gradually more ſlender to the top, floriferous at bottom. Valves of the calyx acute; the inner longer, ciliate, lanuginoſe. Capſule and ſeed reſembling the eighth ſpecies, only one-third leſs in all the parts. It differs abundantly, not only from this, but all other known genera of graſſes, in having a real and very conſpicuous pericarp.—C. ægyptius, though like this in external appearance, is not of this genus[r].

Linneus remarks, that after the ſeeds fall, there remain pectinate ſpikes, with calycine glumes, of which the ſide ones ſpread open with a rugged keel: and that the calyxes contain about four flowers.

Vahl obſerves, that this Graſs varies with more and fewer, longer and ſhorter ſpikes; and that the lower leaves are frequently oppoſite.

Annual. Native of both Indies; (Japan and the Society Iſles.) Cultivated 1714, by the Dutcheſs of Beaufort. It flowers in auguſt[s].

11. Height two feet and a half, with a ſpreading panicle at the top, generally compoſed of many delicate ſlender ſimple ſpikes. Native of Jamaica[t].

Cultivated 1727, by Mr. Miller. It flowers from july to ſeptember; and is perennial[u].

12. Root perennial. Culms ſeveral, erect, from two to three feet high, round, ſmooth, ſhining, ſlender, jointed, leafy, frequently putting out a ſingle branch from one of the lower joints, otherwiſe quite ſimple. Leaves enſiform-linear, acute, flat, feeling rough when the finger is drawn along the edge from point to baſe, hairy on the upper ſurface below the middle, ſmooth on the lower; ſheath ſomewhat hirſute. Panicle upright, filiform, compoſed of ſeveral very ſpreading alternate or oppoſite branches forming a ſort of raceme, defended at their origin by a bundle of hairs; on the alternate toothlets of theſe branches ſit ſmall compreſſed ſpikelets in a double row. The calyx contains from three to five florets, without any other involucre; valves keeled, prickly at the back, acute, awnleſs, upright, permanent, one ſhorter than the other. Outer valve of the corolla like the calycine glume, but awned, inner flat and awnleſs. Awn purple, rough, from the top of the back part of the valve; gradually ſhorter in the upper flowers. Stigmas very dark purple. Seed minute. It flowers and ſeeds in the ſtove during the whole year.

Native of St. Domingo in the Weſt Indies[x].

According to Swartz, this is nothing more than a variety of C. virgatus, which has often ſpikelets with and without awns growing promiſcuouſly in dry ſoils of the Eaſt Indies. The glumes have from three to ſix flowers; the branches of the panicle are filiform or thicker; and the flowers are more or leſs ſeſſile. The habit of this is more tender and lax[y].

13. Spikelets ternate, barren; calyx bivalved, linear, acuminate, involving many ſolitary, alternate, ovate, obtuſe, concave glumes, without the ſmaller valve ſtamens or piſtils; they cannot therefore be well called flowers, but are rather involucres: at the baſe of the ſpikelets are two flowers, with a linear calyx the length of the florets which are two together, the lower ſeſſile; the outer glume is ovate, with a long ſtraight awn coming out below the tip; the inner glume is very narrow. The other floret, on a peduncle the length of the former floret, is very like that, but ſmaller: there is the rudiment only of a third floſcule.—Native of the South of Europe, among ſtones and rocks, and of the Levant. Annual[z].

Introduced 1770, by Monſ. Richard. It flowers in july[a].

14. It reſembles *Paſpalum*, but the valves of the flower gape in a contrary manner[b].

Native of Ruſſia and Hudſon's Bay. Introduced 1773, by Monſ. Richard. It flowers in july, and is annual[c].

It is obſerved by Dr. Stokes (With. arr. 95.) that in the *C. criſtatus, echinatus* and *aureus* there are generally only two florets in a calyx; that in the *cæruleus* and *aureus*, the little ſpikes are inſerted on different ſides of the ſpike; and that in the *durus, coracanus, ægyptius* and *indicus*, the receptacle cannot be ſaid to be leafy, as in theſe the involucre is wanting. The *durus* is truly a Poa; and the three others have the habit of Panicum, with the ſtructure of Poa, forming a natural aſſemblage of their own. The *Cynoſurus* therefore, as a natural genus, ſeems to be confined within the limits of *criſtatus, echinatus*, and *aureus*.

New Species from Vahl.

15. Culms round ſmooth. Leaves awl-ſhaped, a ſpan long, ſmooth. Ligule membranaceous. Spike a ſpan long, upright. Common rachis grooved, angular. Spikelets in threes at each tooth of the rachis, the lateral ones ſeſſile, the middle one on a ſhort pedicel, all linear, an inch long, a little longer than the interſtices, ſpreading; ſometimes, but ſeldom, a fourth ſpikelet, which is ſeſſile and a little

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[k] Linn. ſuppl.
[l] Linn. ſpec. and ſyſt.
[m] Thunberg.
[n] Hort. kew.
[o] Loureiro and Linn. ſyſt.
[p] Hort. kew.
[q] Loureiro.
[r] Gærtner.
[s] Hort. kew.
[t] Browne.
[u] Hort. kew.
[x] Jacqu. miſc.
[y] Swartz obſ.
[z] Linn. ſpec.
[a] Hort. kew.
[b] Linn. ſpec.
[c] Hort. kew.

above the others, all bent back when old. Flowers on one ſide of the rachis, compreſſed, ſmooth. Partial rachis flexuoſe. Valves of the calyx lanceolate, attenuated very much into a briſtle, hence as it were awned. Corollas in pairs, one pedicelled.—Station between the 4th and 5th ſpecies.

16. Culms creeping, branched, filiform, compreſſed at bottom; internodes an inch long. Floriferous ſcapes from the top, a ſpan long, quite ſimple, jointed, having a ſingle awl-ſhaped leaf towards the middle. Leaves at the joints ſeveral on each ſide, an inch and half in length, briſtle-ſhaped. Sheaths compreſſed, equitant, nearly the ſame length with the leaves, and broader. Spike an inch long, linear. Flowers ſmall, alternate, compreſſed, ſmooth. Valves of the calyx, ſpreading, nearly equal, the length of the florets, acute. Florets uſually three, one ſeſſile hermaphrodite, a ſecond pedicelled male, a third barren. Outer valve of the corolla awned below the tip in the male and hermaphrodite, awnleſs in the barren floret. Awn a little longer than the calyx.

The ſtation of this and the three following is between the 7th and 8th ſpecies.

17. Culm upright, a foot and half high, ſmooth. Leaves awl-ſhaped, narrow. Spike ſolitary, a ſpan long. Rachis convex and keeled on the outſide. Flowers alternate, imbricate, on the inner ſide, ſmooth. Valves of the calyx awl-ſhaped; the outer larger the length of the florets, the inner ſhorter. Florets bearded at the baſe and compreſſed: hermaphrodite ſeſſile, male ſmaller, the third barren: outer valve of all keeled, awned below the tip; awns ſtraight, twice as long as the calyx.

18. Culm round, upright, very finely ſtreaked, pubeſcent at top. Spikes in threes, but ſometimes ſolitary, on very ſhort pedicels, bearded at the baſe, four or five inches long, upright, ſometimes a little recurved at the end. Rachis ſomewhat convex on the outſide, channelled within. Flowers from the inner ſide only, ſeſſile, alternate, very much crowded, awl-ſhaped, ſlightly compreſſed, ſpreading. Inner valve of the calyx lower, ovate, acuminate, almoſt tranſparent: outer ſuperior, lanceolate, attenuated, three times the length of the inner one, compreſſed, keeled, having a groove on the back, ciliated in a raiſed line on each ſide by the groove; awn on the middle of the valve, upright, the length of the valve. Florets four, bearded at the baſe: two hermaphrodite, the outer petal bearded at top with two pencils, and ciliated with white long very ſoft hairs; awn half an inch long, ſtraight: two flowers ſmaller, one of them awnleſs; probably theſe are males.

Theſe four ſpecies are natives of the Eaſt Indies.

19. Culm very ſimple, almoſt leafleſs, a foot high. Root-leaves ſheathing, linear-lanceolate, two inches long, ſharpiſh. Sheaths compreſſed, equitant, twice as broad as the leaves. Spikes five, ſeſſile, an inch and half long and more, woolly at the baſe, linear, narrow, ferruginous, ſhining. Flowers on one ſide, the ſize of millet ſeed, alternate, crowded, very blunt. Outer valve of the calyx ſhorter than the corolla, ovate, awned a little below the tip, emarginate, keeled; the other ſmaller. Florets in pairs, longer than the calyx, the outer valves keeled, the keel and whitiſh edge ciliate.

Native of the Cape of Good Hope: obſerved there by Bulow.

20. The limits between this and the other digitate Cynoſuri are determined with difficulty. In habit it approaches very near to C. coracanus. It differs from them all in having the ſingle leaves folded together and alternately bearded. On the inner ſide of the leaf towards the edge is a minute oblong hole, and oppoſite to this on the outſide a ſpot, both yellowiſh, the margin of the leaf, which is rolled in, is cut out between theſe two ſpots, and all this part is clothed with ſoft white hairs in bundles. The ſheaths are not ciliate, nor the leaves hairy. The ſpikes and ſpikelets are longer and narrower than in C. coracanus, and the valves of the florets ſharper.—Native of Egypt[d].

PROPAGATION AND CULTURE.

Several of the ſpecies are natives of the Weſt Indies, and more of the Eaſt Indies. Few of theſe are known in Europe otherwiſe than by ſpecimens or deſcriptions. They muſt be propagated by ſeeds brought from their native places of growth; and kept in the bark ſtove. Thoſe from the Cape of Good Hope, *&c.* are preſerved of courſe in the dry ſtove. For the culture of the European ſorts, particularly the firſt, ſee GRASS.

CYNOSURUS. See *Alopecurus* and *Dactylis.*

CYNOXYLON. See *Nyſſa.*

CYPARISSIAS. See *Euphorbia.*

CYPARISSUS. See *Cupreſſus.*

CYPERELLA. See *Schoenus.*

CYPERI genus. See *Scirpus.*

CYPEROIDES. See *Carex.*]

CYPERUS. (Κυπειρος, *of Hippocrates, Theophraſtus, and Dioſcorides*; Cyperus *of Pliny. So called on account of the form of the root repreſenting a little box.* Ray.)

Fr. *Souchet.*

Lin. gen. n. 66. *Reich.* 72. *Schreb.* 93. *Mich.* 31. *Tournef.* 299. *Gærtn. t.* 2.

Claſſ. 3. 1. Triandria Monogynia.

Nat. order of *Calamariæ.*—*Cyperoideæ* Juſſ.

GENERIC CHARACTER.

CAL. *Spike* imbricate two ways: *ſcales* ovate, keeled, flat-inflected, ſeparating the flowers.

COR. none.

STAM. *Filaments* three, very ſhort. *Anthers* oblong, furrowed.

PIST. *Germ* very ſmall. *Style* filiform, very long. *Stigmas* three, capillary.

PER. none.

SEED ſingle, three-ſided, acuminate, deſtitute of villus.

ESSENTIAL CHARACTER.

Glumes chaffy, imbricate in two rows. *Cor.* none. *Seed* one naked.

SPECIES.

* *With a round culm.*

[1. Cyperus articulatus. *Jointed-ſtalked Cyperus.*
Lin. ſpec. 66. *Reich.* 122. *Rottboell deſcr.* 1. 26. *n.* 31. *Brown. jam.* 128. 10. *Vahl. ſymb.* 1. 7. niloticus. *Forſk. ægypt.* 13. *n.* 37.—ægpytiacus. *Gloxin obſ.* 20. *t.* 3.
Jancus cyperoides, &c. *Sloan. jam.* 1. 121. *t.* 81. *f.* 1.
Culm naked jointed.

2. Cyperus minimus. *Leaſt Cyperus.*
Lin. ſpec. 66. *Reich.* 123. *hort. cliff.* 21. *Sloan. jam.* 1. 120. *t.* 79. *f.* 3. *Brown. jam.* 127. 1. *Raii hiſt.* 3. 625.
Culm naked, ſpikes under the tip.

3. Cyperus lateralis. *Lateral-ſpiked Cyperus.*
Lin. ſyſt. 96. *ſuppl.* 102.
Culm roundiſh naked, ſpike lateral ſeſſile.

4. Cyperus Monti.
Lin. ſyſt. 96. *ſuppl.* 102. *Monti gram. t.* 1. *f.* 2. *Raii hiſt.* 3. 626.
Culm round, umbel ſuperdecompound, leaves even on the keel.

5. Cyperus tenellus.
Lin. ſyſt. 96. *ſuppl.* 103.
Culm naked ſetaceous, ſpikes ſolitary and twin ſeſſile.

* *With a three-cornered culm.*

6. Cyperus monoſtachyos. *Single-ſpiked Cyperus.*
Lin. ſyſt. 96. *Reich.* 123. *mant.* 180. *Rottboell deſcr.* 1. 18. *t.* 13. *f.* 3. *Swartz obſ.* 29. *Sloan. jam.* 1. 120. *t.* 79. *f.* 2.
Culm naked, ſpike ſimple ovate terminating, ſcales mucronate.

7. Cyperus lævigatus.
Lin. ſyſt. 96. *Reich.* 123. *mant.* 179. *Rottboell deſcr.* 1. 19. *t.* 16. *f.* 1.
C. arenarius. *Retz. obſ.* 4. 9. *n.* 11. See n. 35.
Culm naked, head two-leaved, flowers levigated.

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[d] Vahl.

8. Cyperus Haſpan.
Lin. ſpec. 66. *Reich.* 124. *fl. zeyl. n.* 37. *Rottboell deſcr.* 1. 36. *n.* 47. *t.* 6. *f.* 2. *Pluk. alm. t.* 192. *f.* 2.
Culm leafy, umbel ſuperdecompound, ſpikelets umbellate-ſeſſile.]

9. Cyperus longus. *Sweet Cyperus.*
Lin. ſpec. 67. *Reich.* 124. *mat. med.* 45. *Hudſ. angl.* 17. *With.* 45. *Scop. carn. n.* 55. *Plenck, ic. t.* 39. *Blackw.* 316. *Jacqu. ic. rar. vol.* 2. *collect.* 3. 191.
C. odoratus, &c. *Bauh. pin.* 14. *Scheuch. gram.* 378. *t.* 8. *f.* 12. *Mor. hiſt.* 3. 237. *ſ.* 8. *t.* 11. *f.* 13.
C. panicula ſparſa ſpecioſa. *Bauh. hiſt.* 2. 501. 1.
C. longus. *Ger.* 28. 1. *emac.* 30. 1.——odoratus. *Park. theat.* 146. 3. *Raii hiſt.* 1299. *ſyn.* 425.
Culm leafy, umbel leafy ſuperdecompound, peduncles naked, ſpikes alternate.

[10. Cyperus eſculentus.
Lin. ſpec. 67. *Reich.* 124.
C. rotundus eſcul. anguſtifolius. *Bauh. pin.* 14. *theat.* 222.
C. rotundus. *Lob. ic.* 75. *Dod. pempt.* 338.
C. eſculentus. *Ger.* 28. 2. *emac.* 32. 1, 2. *Raii hiſt.* 1301.
Traſi. *Bauh. hiſt.* 2. 504. *f.* 505.
Culm naked, umbel leafy, tubers of the roots ovate, zones imbricate.]

11. Cyperus rotundus.
Lin. ſpec. 67. *Reich.* 124. *fl. zeyl. n.* 36. *mat. med.* 45. *Scheuch. gram.* 391. *Rottb. deſcr.* 1. 28. *t.* 14. *f.* 2.
Culm almoſt naked, umbel decompound, ſpikes alternate linear.

[12. Cyperus ſquarroſus.
Lin. ſpec. 66. *ſyſt.* 96. *amœn.* 4. 303. *Rottb. deſcr.* 1. 25. *t.* 6. *f.* 3. *Pluk. alm. t.* 397. *f.* 2.
Culm naked, umbel leafy glomerate, ſpikes ſtriated, ſquarroſe.

13. Cyperus difformis.
Lin. ſpec. 67. *ſyſt.* 96. *Reich.* 125. *amœn.* 4. 302. *Rottb. deſcr.* 1. 24. *t.* 9. *f.* 2. *Pluk. alm. t.* 417. *f.* 5.
Culm naked, umbel two-leaved ſimple trifid, ſpikes cuſpidate, the middle one ſeſſile.

14. Cyperus Iria.
Lin. ſpec. 67. *Reich.* 125. *Pluk. alm. t.* 191. *f.* 7. *Rottb. deſcr.* 1. 41. *n.* 54. *Rheed. mal.* 12. *t.* 56. (Ira.)
Culm half naked, umbel leafy, peduncles unequal ſubumbellate, floſcules diſtinct.

15. Cyperus elatus.
Lin. ſpec. 67. *Reich.* 125. *amœn.* 4. 301.
Culms naked, umbel leafy ſuperdecompound, ſpikes a finger's length imbricate, ſpikelets ſubulate.

16. Cyperus glomeratus.
Lin. ſpec. 68. *Reich.* 125. *amœn.* 4. 301. *Mich. gen.* 45. *n.* 12. *Segu. veron.* 3. 68. *t.* 2. *f.* 2. *Monti gram.* 14. *t.* 1. *f.* 1.
Culm naked, umbel decompound ſimply leafy, pedicels ſpiked in a double row.

17. Cyperus glaber.
Lin. ſyſt. 97. *Reich.* 126. *mant.* 179. *Segu. ſuppl.* 66. *t.* 2. *f.* 1.
Culm naked, even; umbel three-leaved; flowers glomerate, the lower brachiate; leaves ſmooth.

18. Cyperus elegans.
Lin. ſpec. 68. *Reich.* 126. *Rottb. deſcr.* 1. 34. *n.* 44. *t.* 6. *f.* 4. *Sloan. jam.* 1. 117. *t.* 75. *f.* 1. *Brown. jam.* 128. 4. *Raii ſuppl.* 623.
Culm naked, umbel leafy, peduncles naked proliferous, ſpikes crowded, with ſpreading points.

19. Cyperus odoratus.
Lin. ſpec. 68. *Reich.* 126. *Rottb. deſcr.* 1. 38. *n.* 49. *Gron. virg.* 131. *Burm. ind. t.* 8. *Sloan. jam.* 1. 116. *t.* 74. *f.* 1. & *t.* 8. *f.* 1.
Culm naked, umbel decompound ſimply leafy, pedicels ſpiked in a double row.

20. Cyperus compreſſus.
Lin. ſpec. 68. *Reich.* 126. *Swartz obſ.* 30. *Retz. ob.* 4. *p.* 11. *n.* 17. *Rottb. deſcr.* 1. 27. *t.* 9. *f.* 3. *Gron. virg.* 131. *Jacqu. hort.* 3. *t.* 12. *Sloan. jam.* 1. 117. *t.* 76. *f.* 1. *Raii ſuppl.* 623.
Culm naked, univerſal umbel three-leaved, glumes mucronate with the ſides membranaceous.

21. Cyperus flaveſcens. *Yellow Cyperus.*
Lin. ſpec. 68. *Reich.* 127. *Gouan illuſtr.* 2. *Hall. helv. n.* 1348. *Scop. carn. n.* 53. *Pollich pal. n.* 41. *Krock. ſileſ. n.* 67. *t.* 11. *Scheuch. gram.* 385. & 386. *t.* 8. *f.* 13. *Mor.* 3. 239. *t.* 11. *f.* 37. *Bauh. pin.* 6. 11. *theat. t.* 88. *Bauh. hiſt.* 2. 471. *f.* 1. *Raii hiſt.* 1301. 9.
Culm naked, umbel three-leaved, peduncles ſimple, unequal, ſpikes crowded lanceolate.

22. Cyperus fuſcus. *Brown Cyperus.*
Lin. ſpec. 69. *Reich.* 127. *Hall. helv. n.* 1349. *Scop. carn. n.* 54. *Pollich pal. n.* 42. *Jacqu. vind.* 206. *Leers herborn. n.* 33. *t.* 1. *f.* 2. *Krock. ſileſ. n.* 68. *t.* 12. *Rottb. deſcr.* 1. 33. *n.* 43. *Fl. dan. t.* 179. *Scheuch. gram.* 384. *Mor.* 3. 239. *t.* 11. *f.* 38. *Bauh. pin.* 6. *n.* 12. *Bauh. hiſt.* 2. 471. *f.* 2. *Raii hiſt.* 1300. *n.* 8.
C. ferrugineus. *Forſk. ægypt.* 14. *n.* 43.
Culm naked, umbel trifid, peduncles branched unequal, ſpikes crowded linear.

23. Cyperus pumilus.
Lin. ſpec. 69. *Reich.* 128. *amœn.* 4. 302. *Gærtn. fruct.* 9. *Pluk. alm. t.* 191. *f.* 8. good.
Culm naked, umbel two-leaved compound, ſpikelets alternate digitate lanceolate, glumes mucronate.

24. Cyperus triflorus.
Lin. ſyſt. 97. *Reich.* 128. *mant.* 180.
Schænus cyperoides. *Koenig. Retz. obſ.* 4. 8. *n.* 8.
Culm naked, umbel three-ſpiked, the middle one ſeſſile, ſpikelets even.

25. Cyperus ſtrigoſus.
Lin. ſpec. 69. *Reich.* 128. *Sloan. jam.* 1. 116. *t.* 74. *f.* 2, 3. *Retz. obſ.* 5. 1.
Culm naked, umbel ſimple, ſpikelets linear very much crowded horizontal.

26. Cyperus ligularis.
Lin. ſpec. 70. *Reich.* 128. *amœn.* 5. 391. *Rottb. deſcr.* 1. 35. *t.* 11. *f.* 2. *Sloan. jam.* 1. 36. *t.* 9. *Brown. jam.* 128. 6. *Rheed. mal.* 12. *t.* 55?
Spikelets of the umbel capitate oblong ſeſſile, involucres very long ſerrate and rough.

27. Cyperus Papyrus. *Paper Cyperus,* or *Egyptian Papyrus.*
Lin. ſpec. 70. *ſyſt.* 97. *Reich.* 129. *Rottb. deſcr.* 1. 32. *Bruce Abyſſ.* 5. 1. *t.* 1. *Mich. gen.* 44. *t.* 19. *Scheuch. gram.* 387. *t.* 8. *f.* 14. *Mor.* 3. 239. *t.* 11. *f.* 41.
Papyrus nilotica. *Bauh. pin.* 19. 1, 2. *theat.* 333. *Bauh. hiſt.* 507. *Raii hiſt.* 1302. *Ger.* 37. *emac.* 40. *Park. theat.* 1207.
Culm naked, umbel longer than the involucres, involucels three-leaved ſetaceous longer, ſpikelets in threes.

28. Cyperus ſpathaceus.
Lin. ſyſt. 98. *Reich.* 129. *Gron. virg.* 131. *Pluk. alm. t.* 301. *f.* 1.
Schoenus ſpathaceus. *Lin. ſpec.* 63.
C. arundinaceus. *Lin. ſpec. ed.* 1. 44.
Culm cloathed with ſheaths of leaves, peduncles pinnate lateral.

29. Cyperus alternifolius. *Alternate-leaved Cyperus.*
Lin. ſyſt. 98. *Reich.* 129. *mant.* 28. *Mor.* 3. 183. *ſ.* 8. *t.* 3. *f.* 17. *Jacqu. ic. rar. vol.* 2. *collect.* 2. 306.
Culm naked alternately leafy at the end, peduncles lateral proliferous.

30. Cyperus denudatus.
Lin. ſyſt. 98. *ſuppl.* 102.
Involucre ſcarcely any.

31. Cyperus diſtans.
Lin. ſyſt. 98. *ſuppl.* 103. *Rottb. gram.* 37. *n.* 48. *t.* 10.
Culm naked, umbel leafy ſuperdecompound, ſpikes alternate filiform, floſcules diſtant.

32. Cyperus pannonicus. *Dwarf Cyperus.*
Lin. ſyſt. 98. *ſuppl.* 103. *Jacqu. auſtr.* 5. 29. *t. app.* 6. *Ait. hort. kew.* 79.
Culm obſcurely three-cornered proſtrate, ſpikes about four together ſeſſile.

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33. Cyperus viſcoſus. *Clammy Cyperus.*
Ait. hort. kew. 79. *Swartz prodr.* 20. *Jacqu. ic. rar. vol.* 2.
Culm three-ſided, clammy; leaves rough, triangular at the tip.

34. Cyperus pygmæus.
Retz. obſ. 4. *n.* 10.
Culm round, umbel compound involucred, ſpikes lanceolate, glumes mucronate.

35. Cyperus arenarius.
Retz. obſ. 4. *n.* 11. See n. 7.
Culm compreſſed naked, ſpikes of the head glomerate ſeſſile, involucre one or two-leaved.

36. Cyperus capitatus.
Retz. obſ. 4. *n.* 12.
Culm ſubangular ſtriated leafy in the middle, head terminating three-leaved, ſpikes ſeſſile.

37. Cyperus ſtoloniferus.
Retz. obſ. 4. *n.* 13.
Culm naked three-cornered, umbel compound involucred, ſpikelets lanceolate.

38. Cyperus Pangorei.
Retz. obſ. 4. *n.* 14. *Rottb. deſcr.* 31. *t.* 7. *f.* 3.
Culm three-cornered leafy at the baſe, involucre three-leaved, univerſal umbel decompound, partial ones ſubtrifid.

39. Cyperus cinnamomeus.
Retz. obſ. 4. *n.* 15.
An C. ligularis. *n.* 46. *Rottb. t.* 11. *f.* 2?
Culm three-cornered leafy, umbel conſiſting of ſpikelets in a head peduncled and ſeſſile, involucre five-leaved ſerrulate-ſcabrous.

40. Cyperus ſetaceus.
Retz. obſ. 5. 10. *n.* 6.
Culms ſetaceous ſtriated-angular naked, ſpike terminating with about four flowers and naked.

41. Cyperus compactus.
Retz. obſ. 5. *n.* 7.
Culm round leafy, umbel decompound, involucre five-leaved, ſpikelets heaped ſubſpiral.

42. Cyperus mucronatus.
Retz. obſ. 5. *n.* 8. *Rottb. deſcr.* 19. *t.* 8. *f.* 4?
Culm round? naked, ſpikes lateral ſeſſile, involucre one-leafed.

43. Cyperus diphyllus.
Retz. obſ. 5. *n.* 9.
Culm ſubtriangular two-leaved, umbel ſuperdecompound, ſpikelets roundiſh ſubpinnate.

44. Cyperus leucocephalus.
Retz. obſ. 5. *n.* 10.
Culm ſetaceous three-cornered naked; head ſeſſile; involucre four-leaved or thereabouts, ſpreading very much; flowers one-ſtamened.

45. Cyperus exaltatus.
Retz. obſ. 5. *n.* 12.
C. faſtigiatus. *Rottb. deſc.* 32. *t.* 7. *f.* 2.
Culm three-cornered one-leafed at the baſe, umbel ſuperdecompound, many-leaved, ſpikelets linear peduncled.

46. Cyperus niveus.
Retz. obſ. 5. *n.* 13.
Culm three-cornered filiform naked, umbel terminating ſeſſile two-leaved, ſpikes compreſſed lanceolate.

47. Cyperus imbricatus.
Retz. obſ. 5. *n.* 14.
Culm three-cornered naked, umbel decompound, rays of the umbellules imbricate, involucre ſix-leaved with three leaves very long and three very ſhort.

48. Cyperus cruentus.
Retz. obſ. 5. *n.* 15.
Culm three-cornered one-leafed at the baſe, umbel terminating two-leaved very ſimple.

49. Cyperus nitens.
Retz. obſ. 5. *n.* 16.
Culms three-cornered leafy at the baſe, umbels almoſt ſimple, involucre three-leaved, flowers one-ſtamened.

50. Cyperus flavidus.
Retz. obſ. 5. *n.* 17.
Culm three-cornered ſtriated, umbel compound three-leaved, ſpikes lanceolate, flowers one-ſtamened.

51. Cyperus venuſtus.

52. Cyperus ſtuppeus.

53. Cyperus linctus.
Forſt. fl. auſtr. app. n. 495, 496, 497.

DESCRIPTIONS, *&c.*

Moſt of the ſpecies have three-cornered culms or ſtems. The flowers in aggregate peduncled and umbelled ſpikes. The lower chaffs are ſometimes empty[a].

1. Root tuberous, red, having a very grateful ſmell like that of *Calamus aromaticus.* Stalk three feet high, ſmooth, with very ſtrong and frequent tranſverſe partitions or membranes. At the top ſeveral brown chaffy panicles, made up of ſmall, long ſpikes.

Native of Jamaica, in the rills of the Savanna, beyond two-mile wood[b]: and in Egypt on the banks of the Nile.

The Egyptian plant differs from that of the Weſt Indies only in having ſhorter ſpikelets, ſometimes eight-flowered, and paler. Forſkall ſays that the culms are not jointed, probably in the freſh plant the joints may be leſs conſpicuous, but in the dry ſpecimens certainly the culms are jointed[c].

2. Roots compoſed of many capillary brown fibres, whence ariſe many ſmall narrow leaves, an inch long, and reddiſh underneath. Stalks many ſimple, triangular, about two inches high, (three or four, *Browne,*) with two or three ſmall ſhort leaves towards the top. Above theſe, uſually three ſmall ruſty ſcaly ſpikes or heads, two whereof have ſhort peduncles, and the other none: they are ſufficiently diſtinguiſhable by their ſmallneſs[d].—Native of Jamaica, and Braſil.

3. Culms the length of a needle, many, briſtle-form, not ſtiff. Spike ovate, ſcales from ſeven to nine, diſtich, ſomewhat ſharp, ſmooth and even, ſeſſile its own length below the tip of the culm. Annual.—Native of the Cape of Good Hope[e].

4. Culm ſmooth and even, leafleſs. Leaves very long, cutting downwards by means of little prickles on the edge; in other parts, and even on the keel, ſmooth. Involucre ſix-leaved, very long. Spikelets ovate, ferruginous.

Native of India, now found wild in Italy.—Perennial[f].

5. Culm not a finger's length, the thickneſs of a horſe-hair. Spikes below the top of the culm, compreſſed, ancipital, ovate, even, with ten or twelve ſcales.—Native of the Cape of Good Hope[g].

Perhaps the ſame with the third.

6. Root-leaves numerous, linear, very narrow, even, looſe, a ſpan in length. Culm filiform, weak, ſcarcely a foot high. Spike imbricate, compreſſed a little, even, the ſize of a cucumber ſeed, with keeled, mucronate ſcales. A ſubulate leaflet, ſometimes two, under the ſpike, and of the ſame length with it[h].

This, according to Swartz, is rather the loweſt glume, not longer than half the ſpike; which he deſcribes as being imbricate in a double row, with the two loweſt ſcales longer than the others, linear, awl-ſhaped, keeled, the others broader, the uppermoſt acuminate: there are little briſtles between the ſcales near the keel. Germ three-cornered: ſtyle three-ſided, trifid at the end: ſtigmas reflex. Seed white, calloſe with dots.

Native of the Eaſt and Weſt Indies.

7. Culms even, two feet high. Leaves two, ſtiff, convolute-ſubulate; the upper one broad at the baſe, concave, produced from the tip of the culm, three or four times as long as the head; the lower immediately under it, reflex, half the length of the other. Head terminating, roundiſh, compoſed of ſeveral ſeſſile ſpikelets. Involucre two-leaved.

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[a] Juſſieu. [b] Sloane. [c] Vahl. [d] Sloane. [e] Linn. ſuppl. [f] Ibid. [g] Ibid. [h] Linn. mant.

Spikes or flowers oblong-ovate, imbricate, bluntiſh, with ovate ſcales. Perennial.—Native of Coromandel in the Eaſt Indies [i].

8. Culm a foot high, lax, yellowiſh, ſtriated, tender. Leaves linear, ſtriated, yellowiſh dotted with brown, longer than the culm. The general involucre conſiſts of two leaves like thoſe on the culm; the largeſt one-third longer, the ſmaller three times ſhorter than the umbel. The partial involucre conſiſts of lanceolate ſcales at the ſubdiviſions of the partial umbel and the baſe of the ſpikes. Principal rays of the umbel about twenty, ſpreading, unequal, filiform. Rays of the ſecond diviſion twelve to fifteen, ſpreading very much, ſo as to be almoſt horizontal. Rays of the third diviſion, when there are any, five or ſix, only half an inch long, and even ſhorter. In the fourth or laſt ſubdiviſion ſpikes three to ſix, expanded in a ſtar. Spikes linear, compreſſed, diſtich, tender and very delicate, one-third of an inch long, ſcarcely half a line broad; ſcales imbricate, very ſmall, compreſſed, alternate, diſtant, bluntiſh or truncate, ferruginous, dotted, ſixteen to twenty in each ſpike [k].

Native of India, Ceylon and the Cape. Perennial.

9. Root long odoriferous. Peduncles ſometimes twelve, umbelled, the rays gradually ſhortening to the middle, the outer one half a foot in length. Spikelets corymbed, ſlender, acuminate, cheſtnut-coloured [l].

Native of France, Germany, Italy, Sicily, and Carniola, in bogs, marſhes and ditches. Found by Mr. Newton, in the iſle of Purbeck, Dorſetſhire, and by Canon Holcombe near St. David's. Perennial; flowering in july.—Called Engliſh Galingale.

The root is agreeably aromatic to the ſmell, warm and bitter to the taſte. The modern practice diſregards it; but perhaps it is not inferior to ſome of the more coſtly medicines brought from abroad [m].

10. Roots fibrous, with ſmall round tubers or bulbs hanging from them the ſize of Peas or Beans, of a ſweetiſh taſte, ſomewhat like Cheſtnuts. Stems about eighteen inches high. Shorter and ſmaller in all the parts than the next ſpecies.

Native of the country about Montpellier, Italy, Sicily, and the Levant. Perennial [n].

11. Culm ſcarcely a foot high, having at bottom four alternate leaves. Panicle of many naked peduncles, each of which produces four or five diſtich, oblong ſpikes, almoſt linear, with one in the middle on a very ſhort peduncle, furniſhed in the ſame manner with ſpikelets. Involucre of two or three leaflets the length of the umbel. The root bears ſome bulbs [o].—Native of Arabia, India, Ceylon, Japan.

The Cyperus, n. 36. of Flora zeylanica, and hexaſtachyos of Rottboll, which are the ſame, are ſuppoſed to be different from the C. rotundus of the materia medica.

12. Culms ſeveral, one or two inches high, filiform, three-ſided. Leaves linear-briſtle-ſhaped, longer than the culm, embracing the baſe of it with purple ſheaths, when young glaucous, when old ferruginous. Involucre of four leaves, ſeldom three or five, alternately ſhorter, longer than the umbel, ſpreading, reſembling thoſe on the culm. Bractes ſmall, ovate, at the baſe of each ſpike. Umbel bifid or trifid; middle umbellule ſeſſile; ſide ones two ſometimes three, very ſhort, ſubſeſſile, naked, commonly on divaricate peduncles almoſt the length of the central umbellule. Spikes ſeveral, linear, acute, ſtriated, ſquarroſe, diſtich, radiating, alternate. Scales commonly ten to fourteen, lanceolate, very ſharp, compreſſed, keeled, reflex at the end, ſomewhat hairy, ferruginous or gray, with the keel green [p].

Native of Tranquebar, and the Cape of Good Hope.

13. Culm three-ſided, flaccid, very weak, a foot high, having two linear ſoft leaves, two inches long, of a browniſh green colour, above the baſe, in other parts naked [q]. Involucre two-leaved, one of the leaflets very long. Spikes numerous, ſeſſile, lanceolate, with ovate, concave, obtuſe ſcales, ſcarioſe on the ſide [r].

Native of India.

14. Peduncles in the umbel very many, umbelluliferous at top; umbel of three or four rays alternately bearing ſpikelets of three-cornered and very obtuſe grains, covered with a ſcarcely diſcernible chaff, and little diſtant from each other [s]. Umbel ſimple, many-rayed: ſome of the peduncles ſhort, others very long, panicled with alternate ſpikelets, each floſcule remote from another, which makes it an elegant plant [t].

Native of India, China, and Japan.

15. This is a large plant, with an even culm. Umbel unequal. General involucre many-leaved, very long; partial ſhorter than the ſpikes, which are all ſeſſile, ferruginous, compoſed of tender, diſtich ſpikelets.

Native of India [u].

16. This has ſo much the ſtructure of the preceding, that perhaps it may be the ſame, only become ſhorter by growing in a colder climate. Spikes heaped and conglomerate, not elongated. This plant, together with Phalaris oryzoides, and Andropogon alopecuroides, was probably brought originally from India to Italy with rice.—Native of Italy [x].

17. Culm a palm in height. Root-leaves erect, wholly ſmooth, the length of the culm. Involucre three-leaved, longer than the culm, except three ſubulate leaflets which are ſhort. Umbel ſimple; with alternate ſeſſile flowers at top, the loweſt pedicelled. Flowers ovate, compreſſed, imbricate in two rows, growing brown by age [y].—In wet places about Verona, and in Piedmont. Annual.

18. Root-leaves from two to three feet and an half in length. Stalk two feet and an half high, with two or three leaves on the top, one whereof is a foot long. Panicle very ſparſe and elegant, made up of many ſpikes, ſome on peduncles three or four inches long, ſome on none, and others of all intermediate lengths; ſpikes compreſſed, broad, one-third of an inch in length, made up of two rows of ferruginous imbricate ſcales.

Native of Jamaica, in the ſea-marſhes, Liguanee [z]. Alſo of the iſland of Santa Cruz.

19. Root long, roundiſh, frequently jointed, reddiſh on the outſide, very odoriferous, creeping and making a large tuft, whence riſe many leaves with a prominent ſharp cutting keel. Stalks two or three feet high, with ſeveral ſmaller leaves towards the top, under the panicle, which is very ſparſe, having, beſides ſome ſhorter ſpikes, many on peduncles, above ſmall leaves, ſome whereof are a foot high; each of the ſpikes being long, very ſmall, roundiſh, pale green.—By river ſides in Jamaica, and moſt of the Caribees [a]. Alſo in Surinam, and the Society iſles.

20. This is known by its green panicle and ſpikes; by its mucronate glumes, not ſpreading, but the ſide edges membranaceous. The partial umbels naked, the univerſal glomerate [b].

Native of Malabar, Jamaica, Virginia, &c. in ſandy paſtures.

In the American plant the involucre is *three-leaved*; in that of Malabar *four-leaved*; in that of Ceylon *five-leaved*, and the leaves long [c].

The Jamaica plant is thus deſcribed by Swartz. Culms in a tuft, half a foot high or leſs, three-ſided, naked. Leaves from the baſe of the culm, linear, ſtraight, ſtiff, even. Involucre terminating, three-leaved; leaflets ſpreading, linear, keeled. Umbel decompound. Spikelets ſeſſile, pale green. Peduncles very ſhort, three or four, three-ſided, ſheathed at the baſe. Spikes imbricate in two rows;

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[i] Linn. mant. and Rottb. [k] Rottb. [l] Scopoli. [m] Withering. [n] Linn. [o] Linn. zeyl. [p] Rottboll.

[q] Rottb. [r] Linn. [s] Linn. ſpec. [t] Thunberg. [u] Linn. amoen. [x] Ibid. [y] Linn. mant. [z] Sloane. [a] Ibid. [b] Linn. ſpec. [c] Retz.

glumes compreſſed, keeled, membranaceous at the edge, ovate, acute but not mucronate. Briſtles two, whitiſh, between the ſcales. Anthers bifid. Style trifid: ſtigmas reflex. Seed roundiſh three-cornered, ferruginous and ſhining.

According to Rottböll, the culm is a foot high and ſtriated. Leaves at the baſe about three, ſoft, ſhorter than the culm, glaucous, with purple ſheaths. Involucre of four leaves, of which the largeſt is almoſt twice the length of the umbel. Partial involucres none. Umbel ſimple: rays unequal, from an inch and half to three inches in length, filiform, terminated by digitate ſpikes in fours, with one ſeſſile umbellule in the middle. Spikes lanceolate, diſtich, compreſſed on the ſides, almoſt four-ſided. from three quarters to an inch in length. Scales concave, lanceolate, compreſſed, acuminate, green ſtreaked with purple.

21. Fibres of the root loaded with little tubers. Culms obtuſely three-cornered, ſmooth, from an inch to a hand and a ſpan in height. Root-leaves ſpreading, ſmooth, keeled, two or three inches long, mucronate; beſides theſe there are two or three under the umbel of unequal lengths, narrower than the others, and longer than the umbel. Spikes ſeveral, of different lengths, forming a conglobate umbel, uſually trifid; ſometimes however only one or two ſpikes are ſeſſile at the top of the culm, and then there are only two involucral leaves: the ſpikes are much flattened, and at firſt are of a yellowiſh green, but turn yellow[d].

Native of France, Germany, Switzerland, Carniola, Piedmont.—Biennial, flowering from july to ſeptember. Introduced 1776, by Monſ. Thouin[e].

22. It ſcarcely differs apparently from the foregoing, in having narrower brown ſpikelets, and the leaves more ſcabrous[f].

Culm regularly three-cornered, thicker, higher, and not ſo ſhining. Panicle looſer and more branched. Seed ovate, not ſubcordate and pounced with ſmall holes, as in the foregoing[g]. Spikelets black, ſmaller, and more in number; it agrees with *C. flaveſcens* in every thing elſe[h]. Root annual. Culms a ſpan in height, ſmooth, with two or three leaves at the baſe, which are keeled, ſmooth and the length of the culm. Involucre three-leaved, the loweſt leaf as long as or longer than the culm, the two others longer than the umbel, ſometimes there is a fourth which is very ſhort. Peduncles three-cornered, ſheathed at the baſe: the middle one very ſhort, covered with ſpikelets: theſe are lanceolate-linear, compreſſed, dark brown, and have nine, eleven, or thirteen flowers in each. Glumes keeled, ſharp. Style cloven into two or three. Seed naked[i].

Native of Denmark, France, Germany, Switzerland, Carniola, Piedmont, Egypt. It flowers from july to ſeptember, and was introduced in 1777, by Mr. Thomas Blackie[k].

23. This reſembles C. compreſſus, but is ſhorter, and has the glumes leſs imbricate, and mucronate at the tip. Involucres longer than the umbels. Spikelets ſcarcely alternate and almoſt digitate[l].

Culm about three inches in height, with a few leaves at bottom. Involucre three-leaved, unequal. The head is compoſed of ſeſſile ſpikes, the larger of which have often one or two ſmaller ones at the baſe. Spikelets oblong, compreſſed, bay-coloured, compoſed of from ſixteen to twenty ovate keeled glumes; the keel green continued into a point[m].—Native of India.

24. Culms even, a foot high. Involucre terminating, two-leaved, ſhorter than the ſpike, ſubulate. Spikes terminating, ovate, compreſſed, ancipital, even, acute, with acuminate ſcales; peduncles of the ſide ones longer than the ſpike.—Native of the Eaſt Indies. Perennial[n].

25. Root roundiſh. Culm ſtriated, ſmooth, ſheathed with leaves at bottom, a foot high. Leaves channelled, entire, ſmooth, ſhorter than the culm. Involucre many-leaved, leaves from five to ſeven, unequal, longer than the umbel. Spikes about eight[o]; longiſh, ferruginous, very numerous, horizontal or even deflex[p].

Retzius ſuſpects that this is a ſpecies of Kyllingia.

Native of Barbadoes, Virginia, and Japan, in marſhes.

26. Leaves many, three feet long, near an inch broad at bottom, ending in a point, and making a large tuft. Stalks as thick as the finger, three feet high. Involucre of leaves two feet long, with ſeveral ſhorter. Spikes on three-cornered peduncles of different lengths from ſix inches, ſome branched into two or three, all of which have ſome ferruginous, ſcaly, round, pointed ſpikelets, made up of imbricate ſcales, ſticking cloſe to the tops of the peduncles. Seed browniſh-red and ſhining.

Native of Barbadoes, near Bridgetown[q]. Alſo of Guinea.

27. Involucre eight-leaved, the four outer leaflets broader. Univerſal umbel nearly equal, very copious, with the rays ſheathed at the baſe. Involucels erect, the length of the univerſal umbel. Umbellules with the peduncles in threes, and very ſhort. Spikelets many, alternate, ſubulate, ſeſſile[r].

Native of Egypt, Syria, Calabria, Sicily. According to Strabo, in the lake Thraſimene near Perugia.

Papyrus was called by the Greeks Biblus: in Egypt it has the name of el Berdi, and in Syria it is ſaid to be known by the name of Babeer, which approaches near to the ſound of papyrus and paper.

The general figure of this plant, as Pliny has rightly ſaid, reſembles a Thyrſus; the head is compoſed of many ſmall graſſy filaments, each about a foot long. About the middle, each of theſe filaments parts into four, and in the point, or partition, are four branches of flowers; the head of this is not unlike an ear of wheat in form, but in fact is but a chaffy, ſilky, ſoft huſk. Theſe heads, or flowers grow upon the ſtalk alternately, and are not oppoſite to, or on the ſame line with each other at the bottom.

Pliny ſays the Papyrus has no ſeed. It is very ſmall, and by its exalted ſituation, and thickneſs of the head of the flower, ſeems to have needed the extraordinary covering it has to protect it from the violent hold which the wind muſt have upon it. For the ſame reaſon the bottom of the filaments compoſing the head are ſheathed in four concave leaves, which keep them cloſe together, and prevent injury from the wind getting in between them.

The ſtalk is of a vivid green, and of a triangular form. It has but one root, which is large and ſtrong. Pliny ſays, as thick as a man's arm; ſo it probably was when the plant was fifteen feet high; but the whole length of the ſtalk, comprehending the head, being little more than ten feet, in the plants we now find, it is leſs in proportion. In the middle of this long root ariſes the ſtalk at right angles, the whole inverted having the figure of a T. From each ſide of the large root proceed ſmaller elaſtic ones (or fibres) in a direction perpendicular to it, and which, like the ſtrings of a tent, ſteady it and fix it to the earth at bottom. About two feet or little more of the lower part of the ſtalk is cloathed with long, hollow, ſword-ſhaped leaves, covering each other like ſcales, and fortifying the foot of the plant: they are of a duſky brown or yellow colour.

It grows in the lakes of Ethiopia and Egypt; in the river Jordan between Paneas, and the lake of Tiberias; and at the confluence of the Tigris and Euphrates: but it was probably not propagated into Aſia and Greece, till the uſe of it, as manufactured into paper, was firſt known. It does not grow in the body of the Nile itſelf, but in the caliſhes or places into which the river overflows and is ſtag-

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[d] Scopoli, Pollich, Krocker. [e] Hort. kew. [f] Linn. ſpec.
[g] Scopoli. [h] Pollich. [i] Leers. [k] Hort. kew.
[l] Linn. amoen. [m] Gærtner. [n] Linn. mant.

[o] Thunberg. [p] Linn. ſpec. [q] Sloane. [r] Linn. ſyſt.

nant. The head is too heavy, the ſtalk too ſlender, tall and feeble, the root too ſhort and ſlender, to reſiſt the violent preſſure of wind and current in an open plain country, and a deep rapid river.

The Papyrus ſeems to have come down very early from Ethiopia, and to have been uſed in upper Egypt immediately after the diſuſe of hieroglyphics. According to Varro, it came not into general uſe in Greece, till after the conqueſt of Egypt by Alexander; yet it is plain from Anacreon, Alcæus, Æſchylus, and the comic poets, that it was known in their time. Plato and Ariſtotle ſpeak of it, and ſo do Herodotus and Theophraſtus. We alſo know that it was of old in uſe among the Ionians, who probably brought it in very early days directly from Egypt. Numa, who lived three hundred years before Alexander, is ſaid to have left a number of books written on Papyrus.

The ancients divided the plant into three parts. The top, with the thyrſe of flowers, adorned the temples, and crowned the ſtatues of the gods. Ageſilaus preferred being crowned with this to any other, on account of its ſimplicity. Antigonus made uſe of nothing elſe but the ſtalk for ropes and cables to his fleets, before the uſe of Spartum was known; which, though very little better, ſtill ſerves that purpoſe in ſmall ſhips on the coaſt of Provence to this day. The top of the Papyrus was likewiſe uſed for caulking the veſſels, by forcing it into the ſeams, and afterwards covering it with pitch.

Pliny tells us that the whole plant together was uſed for making boats, a piece of the Acacia-tree being put in the bottom to ſerve as a keel

> "Conſeritur bibula Memphitis cymba papyro."

And this is ſtill the only boat which they have in Abyſſinia; they call it Tancoa. Probably the junks of the Red ſea, ſaid to be made of leather, were firſt built with Papyrus and covered with ſkins.

The bottom, root or woody part of this plant, before it turned hard, was chewed for the ſweet juice contained in it. This is ſtill practiſed in Abyſſinia, where they likewiſe chew the root of Indian corn, and of every ſort of Cyperus. Herodotus tells us, that about a cubit of the lower part of the ſtalk was roaſted over the fire and eaten.

On account of the great ſcarcity of wood in Egypt, this lower part was likewiſe uſed in making cups, moulds, and other utenſils; alſo for boards or covers to their books.

Paper was made after the following manner: the thick part of the ſtalk being cut in half, the pellicle between the pith and the bark, or perhaps the two pellicles were ſtripped off, and divided by an iron inſtrument, which probably was ſharp-pointed, but did not cut at the edges. This was ſquared at the ſides ſo as to be like a ribband, then laid upon a ſmooth table or dreſſer, after being cut into the length that it was required the leaf ſhould be. Theſe ſtripes, or ribbands, were lapped over each other by a very thin border, and then pieces of ſame kind were laid tranſverſely, the length of theſe anſwering to the breadth of the firſt. A weight was then laid on them while moiſt; and they were thus left to dry in the ſun.

It was ſuppoſed that the water of the Nile had a gummy quality in it; but this is without foundation: the ſaccharine juice of the plant cauſes the adheſion of the ſtripes, and the water only ſerves to diſſolve and diffuſe this[a].

Paper, ſays the Abbé Rochon, is manufactured in Madagaſcar from the Papyrus, which the natives call *Sanga-Sanga.* They pull off with great dexterity the inner bark; divide it into very thin filaments, which they moiſten with water; and having laid them acroſs each other, in various directions, preſs them well down. They are then boiled in a ſtrong lye of aſhes, and afterwards pounded in a large wooden mortar till they are reduced to a paſte. This paſte is waſhed and drenched with water upon a frame made of bamboos in the form of a grate. When this operation is finiſhed, the leaves are ſpread out to dry in the ſun, and are glazed with a decoction of rice water. This paper is of a yellowiſh colour; but when it is well glazed, it does not imbibe the ink. The pens uſed by theſe iſlanders are made of the bamboo. Their ink is made from a decoction in boiling water of the bark of a tree, which they call *Arandrato.* It is not quite ſo black as ours, but more ſhining. The art of writing was doubtleſs brought into the iſland by the Arabs, who made a conqueſt of it about three hundred years ago. But the Abbé Rochon calls the Papyrus nilotica a tree! We cannot therefore tell what material this Madagaſcar paper is made of.

28. Size of the Sugar-cane. Sheaths large, one-leafed, alternate, deciduous, involving the flowering racemes. Native of Virginia and the Cape of Good Hope. Perennial[t].

29. Perennial. Culms a foot high. Leaves at the top crowded, enſiform, half a foot long, even, roughiſh at the edge. A ſmall ſubulate bracte from each axil. A filiform peduncle, four times ſhorter than the leaf, from the axil of each leaf, terminated by an ovate ſpike. A few pedicels ſpring from the baſe of the ſpike, bearing at top a ſimilar ſpike: and therefore no umbel[u].

Native of the iſland of Madagaſcar. It flowers in february and march; and was introduced in 1781, by Monſ. Thouin[x].

30. Culm two feet high, with one ſheath in the middle of it. Umbel compound, not much expanded. Univerſal involucre with the rays ſcarcely manifeſt, and indeed hardly any; partial none. Spikes oblong, purpliſh, with a green keel, ſpreading a little at top.

Native of the Cape of Good Hope[y].

31. Root tuberous. Culm two feet high, three-ſided, ſtriated, yellowiſh. Leaves alternate, lanceolate, keeled, reflex, glaucous, inveſting the lower half of the culm with their ſheaths. General involucre of ſeveral lanceolate unequal leaves, the largeſt of which are much longer than the umbel. Partial involucres two to four-leaved, linear or linear-briſtle-ſhaped, ſhorter than the umbellules. Central umbellule in the firſt and ſecond diviſion ſubſeſſile: rays of the firſt diviſion about ten, unequal, the largeſt a ſpan long, the leaſt ſcarcely an inch and half: rays of the ſecond diviſion about five, an inch and half and two inches long: rays of the third diviſion about three, lengthened out into peduncles having ſpikes their whole length, of which the middle one is longeſt, being almoſt two inches long, and ſometimes trifid. Spikes about ten, looſe, very ſlender, ſpreading out horizontally, almoſt an inch long: ſcales many (about twenty-eight), very ſmall, alternate, ſpreading, oblong, bluntiſh, ferruginous with a ſtriated green keel. It varies with much ſhorter ſpikes, and an umbel only twice divided, or even ſometimes ſimple[z].

Native of Malabar.

32. Root annual. The whole plant ſmooth and ſhining. Culms in a very thick tuft, from half an inch to ſix inches in length, leafleſs. Root-leaf ſheathing, much ſhorter than the culm, linear, channelled. Involucre of two, ſeldom of three leaves, unequal, longer than the ſpikelets; which are ovate-oblong, in a ſort of umbel, blunt, compreſſed, ſlightly incurved. Scales membranaceous, roundiſh, blunt, pale with green ſtreaks. Seeds pale bay, ſmooth[a].

Native of Hungary. Flowering in july and auguſt. Annual. Introduced 1781, by Abbé Pourret[b].

33. Native of Jamaica. Flowering from may to auguſt. Perennial. Introduced 1781, by Monſ. Thouin[c].

34. Root-leaves filiform, twice as long as the culm, which is ſtriated and ſcarcely an inch and

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[a] Bruce Abyſſ. vol. 5. p. 1, &c.

[t] Linn. ſpec.
[u] Linn. mant.
[x] Hort. kew.
[y] Linn. ſuppl.
[z] Rottboll.
[a] Jacquin.
[b] Hort. kew.
[c] Ibid.

half in height. Umbel with five or ſix umbellulate peduncles. Spicules of the umbellules four to ſix, lanceolate, compreſſed, pale, in the middle reddiſh brown, with keeled glumes, ending in a ſmall daggered point. Involucre four-leaved, three times as long as the umbel.

Native of the ſands of Tranquebar.

Is not this the ſame with C. ſquarroſus of Rottböll: and is not C. ſquarroſus of Linneus (n. 12.) a different plant?

35. Roots jointed, creeping, from which proceed bunches of leaves ſheathed at the baſe. Leaves filiform, naked, from three to ſix inches long, compreſſed, ſtriated, channelled on one ſide, yellowiſh green. Culm ſolitary from the bunch of leaves, ſtriated, and ſomewhat higher than the leaves. Head ſeſſile compoſed of ſpikelets from eight to twelve. Spikelets thick, compreſſed, diſtich, compoſed of broad-ovate, boat-ſhaped, ſtriated, brown ſcales edged with white. Involucre longer than the head, compreſſed; there is often another leaf ſhorter than the head.

Native of the Eaſt Indies in looſe ſand[d].—This ſeems to be the ſame with C. lævigatus, n. 7.

36. Culm four inches long, compreſſed, with a leaf or two at the baſe, and a bunch of leaves in the middle; thoſe at the baſe much broader, and a little higher than the culm. Head globular, compoſed of ſeſſile linear-oblong ſpikelets. Glumes imbricate, ſcarioſe, ending in a recurved daggered point ſomewhat awned.—Probably native of the Eaſt Indies[e].

37. Root bulbous. Leaves narrow, linear, complicate, a hand or half a foot in length. Culm a ſpan in height. The umbel has only one ſubſeſſile umbellule, and about three that are peduncled, having from three to five ſpikelets, which are red, and have imbricate glumes. Involucre one or two-leaved, the longer an inch and half in length, the ſhorter half an inch long. Beſides theſe there is another leaf or two ſtill ſhorter; they are all ſubulate and ſtriated.—Native of Tranquebar in the Eaſt Indies[f].

38. Culm two feet and an half high. Leaves long, unarmed, looſe. Peduncles of the umbellules flexuoſe. Involucre longer than the umbel. Scales in place of the partial involucre lanceolate, with a long filiform tip. Spikelets not filiform, but compreſſed, and linear.

Native of Tranquebar[g].

39. Root annual. Culms three feet high and more, ſolitary, leafy at the baſe, naked above. Leaves longer than the culm, near half an inch broad, plaited, with an unarmed keel; edge of the upper part rough. Leaves of the involucre plaited, with the keel unarmed; the outmoſt from one and an half to two feet in length, the reſt ſhorter, and the fifth only two inches long. Umbel formed of compound heads, three on compreſſed peduncles; five or more ſeſſile, with a ſubulate involucel under each. Heads ovate, compound, cinnamon-coloured. Spikelets heaped, compreſſed, diſtich, linear. Scales oblong, imbricate, obtuſe, the keel green; theſe are from ſix to nine in number[h].

40. This very much reſembles *Scirpus acicularis.* Culms in bunches three or four inches long, very ſlender. Leaves none. Glumes purpliſh. Style trifid. Seed whitiſh, turbinate, ſomewhat wrinkled; the angles riſe above the ſeed with a truncate dagger-point.—Frequent about Calcutta.

41. Culm two feet high and more. Leaves nearly as long as the culm, linear, with purpliſh ſheaths, the edge and keel unarmed, ſtriated. The longeſt leaf of the involucre a foot and half in length, the ſhorteſt three inches, all ſcabrous about the edge. Umbellules three or five-rayed. Involucels the number of the rays, ſhorter than the heads, ciliate. Heads compact of very ſpreading ſpikes, of a linear-ſubulate form, and ferruginous colour. Spikes ſeſſile, half an inch long, a line broad, ſeem twiſted, uſually ſix-flowered. Scales ſubulate with converging edges, ſtriated, purpliſh with a green keel. Stigmas three, villoſe.—Sent from China by Oſbeck[i].

42. Culms a foot high, with brown truncate ſheaths at the baſe. One or two root-leaves, ſhort and narrow. Head compoſed of a few ſeſſile ſpikes placed an inch and half from the end of the culm. Involucre ſcarcely longer than the ſpikes. Scales ovate, acute, convex, whitiſh.—Native of Viſagapatnam, in the Eaſt Indies[k]. Compare Rottb. 19. t. 8. f. 4.

43. Culm ſix feet high. Umbel terminating, four inches long. Involucre of many ſhort, acute leaves. Peduncles compreſſed. A lanceolate, whitiſh, involucel under each partial peduncle. Spikelets acute, pale, having about twelve flowers. Scales imbricate, ovate, acute, ſtriated. Styles three, with villoſe ſtigmas.—Eaſt Indies[l].

44. Root bulbous, oblong. Culms half a foot high. Leaves even, half the length of the culm. Head ſmall, ſnow-white. Spikes eight to twelve ſeſſile, broad-ovate. Scales linear, compreſſed, the loweſt long, the upper ones gradually ſhorter, obtuſe, ſtriated. Stigmas three villoſe. Seed long, linear, black.—Eaſt Indies[m].

45. Culm five feet high, ſtriated. Root-leaf near three feet long, flat, ſtriated, rough about the edge. Umbel more than a foot high, faſtigiate. Involucre many-leaved; the longeſt leaf two feet in length, the others decreaſing to an inch, all rough about the edge. Umbellules many-rayed, the rays unequally divided and compounded: involucels unequal in number, ſhort, filiform. Spikelets compreſſed, ferruginous on the ſides, having twenty flowers in them: there are two minute ſcales at the baſe of the pedicels. Scales compreſſed, acute, keeled. Seed white.——Tranquebar in the Eaſt Indies[n].

46. Culms a foot and half in height, ſtriated. Root-leaves few, ſhort, narrow; ſheath entire, with a ſhort, obtuſe ligule, oppoſite to the leaf. Umbel compoſed of ſnow-white ſpikes, uſually ſeſſile. Involucre reflex, longer than the head. Spikes half an inch in length, with thirty flowers in ſome. Glumes compreſſed, keeled, ſtriated. Seed black, like Buckwheat.—Eaſt Indies[o].

47. Umbel unequal, four inches long; ſome of the umbellules ſeſſile, others on peduncles of three inches and an half in length. No involucels. Spikelets convex on both ſides, compreſſed longitudinally in the middle, lanceolate, ſcarcely two inches long, having from twelve to twenty flowers, yellowiſh brown and pedicelled. Scales imbricate, broad-ovate, acute, with membranaceous edges. Stamen one. Stigma trifid.—Tranquebar, in the Eaſt Indies[p].

48. Culm four or five inches high, filiform. Leaf linear ſhorter than the culm. Spikelets from two to ten, lanceolate, ſanguineous-brown, two or three lines long. Involucre two-leaved, four times as long as the umbel. Scales imbricate, boat-ſhaped, bluntiſh. Stigmas three duſky purple. Seed convex on both ſides, dark purple, with a ſharp edge.—Tranquebar[q].

49. Culms many, an inch or two in height. Leaves two to four, linear, longer than the culm. Umbel glomerate; ſome of the ſpikes ſimple, others forming an almoſt ſeſſile umbellule. The longeſt leaf of the involucre an inch and half in length, the others gradually ſhorter. Spikelets linear, narrow, ſhining, whitiſh but longitudinally brown in the middle, with the ſcales diverging at top, and from ten to fourteen flowers. Scales ovate, compreſſed, keeled, ſtriated, hyalinous with a green keel, obtuſe with an acumen. Stamen one. Seed aſh-coloured. This approaches to *C. ſquarroſus*, but the ſpikelets are of a different colour, twice as broad with the tips of the ſcales ſhorter and leſs divaricated;

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[d] Retz. [e] Ibid. [f] Ibid. [g] Ibid. [h] Ibid.

[i] Retz. [k] Ibid. [l] Ibid. [m] Ibid. [n] Ibid. [o] Ibid. [p] Ibid. [q] Ibid.

nor are the partial umbels peduncled.——Tranquebar [r].

50. Culms half a foot in height, one-leafed. Root-leaves in bunches, ſhort, narrow. Some ſpikes of the umbel ſeſſile, others in umbellules. Involucre erect, three or four times as long as the umbel, linear. About twenty-ſix flowers in the ſpikes. Scales ſcarioſe, purpliſh on the ſides, ſeparate, narrow.—From Tranquebar [s].

Theſe were all ſent from the Eaſt Indies, by König, and are deſcribed by Retzius from the dried ſpecimens.

51, 52, 53. are natives of the Society iſles [t].]

PROPAGATION AND CULTURE.

9. 11. Cyperus longus and rotundus may both be propagated by dividing the roots in the ſpring. The firſt of theſe, if planted in a warm ſituation, will thrive in the open air. The ſecond being more tender, the roots ſhould be planted in pots, and ſheltered in winter. [Very few others have yet been introduced into cultivation here. Moſt of them are natives of the Eaſt or Weſt Indies, and therefore will require the protection of the bark ſtove.

Cyperus. See *Carex, Dorſtenia, Eriophorum, Schoenus, Scirpus, Spinifex.*

Cyphia. See *Lobelia.*

Cypress. See *Cupreſſus.*

————, Summer. See *Chenopodium.*]

CYPRIPEDIUM. (*From* Κυπρις, *Venus, and* ϖοδιον, *a ſhoe or ſlipper.*)

Engl. *Ladies-Slipper.*
Fr. *Sabot.*

Lin. gen. n. 1015. *Reich.* 1100. *Schreb.* 1376. *Juſſ.* 65. *Calceolus. Tourn.* 249.

Claſſ. 20. 1. Gynandria Diandria.

Nat. order of *Orchideæ.*

GENERIC CHARACTER.

Cal. *Spathes* vague. *Spadix* ſimple.
Perianth none.

Cor. *Petals* four or five, lanceolate-linear, very long, ſpreading, erect.
Nectary within the lower petal, ſlipper-form, inflated, obtuſe, hollow, ſhorter than the petals, broader: *upper lip* ovate, flat, inflex, ſmall.

Stam. *Filaments* two, very ſhort, ſeated on the piſtil. *Anthers* erect, covered by the upper lip of the nectary.

Pist. *Germ* long, twiſted, inferior: *Style* very ſhort, growing to the upper lip of the nectary: *Stigma* obſcure.

Per. *Capſule* obovate, obtuſely three-cornered: with three ſutures, under which it gapes in the corners, three-valved, one-celled.

Seeds numerous, very ſmall. *Receptacle* linear, growing lengthwiſe to each valve of the pericarp.

ESSENTIAL CHARACTER.

Nectary ventricoſe, inflated, hollow.

SPECIES.

1. Cypripedium Calceolus. *Common Ladies-Slipper.*
Lin. ſpec. 1346. *ſyſt.* 817. *Reich.* 4. 33. *fl. lapp.* 318. *ſuec. n.* 820. *Hudſ. angl.* 392. *With.* 1001. *Hall. helv. n.* 1300. (Calceolus). *Gmel. ſib.* 1. 2. *t.* 1. *Gron. virg.* 135. *Mill. fig. t.* 242. *Sowerb. engl. bot. t.* 1. *Villars dauph.* 2. 54. *Saliſb. Linn. tranſ.* 1. 76. *t.* 2. *f.* 1.
Calceolus marianus. *Dod. pempt.* 180. *f.* 1, 2. *Lob. ic.* 1. 312. 3. *Ger.* 359. *emac.* 443. 1, 2. *Raii ſyn.* 385. *Bauh. hiſt.* 3. 518. Damaſonium.) *Pet. herb. brit. t.* 70. *f.* 4. *Beſl. eyſt. vern.* 8. 6. *f.* 1.
Helleborine fl. rotundo, ſ. Calceolus. *Bauh. pin.* 187. *Raii hiſt.* 1232. *Mor. hiſt.* 3. *ſ.* 12. *t.* 11. *f.* 14.
Elleborine major ſ. Calceolus mariæ. *Park. theat.* 217. 3.
β. *Pluk. mant. t.* 418. *f.* 2. *Mor.* 3. 488. *ſ.* 12. *t.* 11. *f.* 15. Helleborine.
C. bulboſum. *Mill. dict. n.* 2.—parviflorum. *Saliſb. Linn. tranſ.* 1. 77.
γ. *Corn. canad.* 204. (Calceolus). *Mor. f.* 17. Helleborine. *Raii hiſt.* 1232. 13.
C. hirſutum. *Mill. dict. n.* 3.
δ. *Amm. ruth.* 133. *t.* 22. *Gmel. ſib.* 1. 5. Calceolus.
Roots fibrous, leaves ovate-lanceolate on the ſtem, petals acuminate.

[2. Cypripedium bulboſum. *Bulbous Ladies-Slipper.*
Lin. ſpec. 1347. *ſyſt.* 817. *Reich.* 4. 34. *Fl. lapp. n.* 319. *t.* 12. *f.* 5. *ſuec. n.* 821. *Gmel. ſib.* 1. 7. *t.* 2. *f.* 1. (Serapias). *Rudb. elyſ.* 2. 209. *f.* 10. *Smith. ſpicil. t.* 11.
Bulb roundiſh; leaf roundiſh at the root.

3. Cypripedium japonicum. *Japoneſe Ladies-Slipper.*
Lin. ſyſt. 817. *Thunb. jap.* 30.
Leaves on the ſtem roundiſh, nearly oppoſite, nerved.

4. Cypripedium album. *White Ladies-Slipper.*
Ait. hort. kew. 3. 303. *Curt. mag. t.* 216. *Pluk. mant. t.* 418. *f.* 3. (Helleborine).
C. hirſutum. *Mill. dict.*
C. ſpectabile. *Saliſb. Lin. tranſ.* I. 78. *t.* 3. *f.* 3.
Roots fibrous, leaves ovate-lanceolate on the ſtem, petals obtuſe.

5. Cypripedium acaule. *Two-leaved Ladies-Slipper.*
Ait. hort. kew. 3. 303. *Curt. magaz. t.* 192. *Pluk. mant. t.* 418. *f.* 1. *Cateſb. car. app.* 3.
C. humile. *Tranſact. Lin. ſoc.* 1. 79. *t.* 3. *f.* 4.
Roots fibrous, leaves oblong at the root.]

DESCRIPTIONS, *&c.*

1. Root compoſed of many fleſhy black fibres, ſpreading obliquely near the ſurface; the fleſhy part retaining the mark of the ſtalk produced the former year: a new root being annually formed on the ſide of the old one. Stalks two, three or more, in proportion to the ſtrength of the root, nine, ten or twelve inches high, and a little hairy. Leaves from three to near four inches long, and near two inches broad at their baſe, of a deep green, and ending in acute points. Four or five of theſe leaves are placed alternately along the ſtalk. In the boſom of the upper leaf is incloſed the flower-bud, ſupported by a ſlender peduncle, which generally turns a little on one ſide; and before the flower opens, advances above the ſheath. The corolla has four narrow petals, of a dark purple colour, placed in form of a croſs, and ſpreading wide open. In the centre is ſituated the nectary, ſhaped like a wooden ſhoe, of a pale yellow colour, with a few broken ſtreaks: the opening is covered with two ears; the upper one tender, white, and ſpotted with purple; the lower thick, and of an herbaceous colour [a].

[The lower leaves ſheath, the upper embrace the ſtem; they are marked with ſeven or nine principal parallel nerves, and very numerous intermediate ones, fringed with ſhort hairs on both ſides. Upper part of the ſtem and the germ downy. No bracte, unleſs the upper leaf, from the boſom of which the peduncle ariſes, be called ſo. The upper petal broad, the two middle ones narrow, the loweſt ſhorteſt, hanging over the opening of the lip, all longer than the lip, ſlightly downy, marked with parallel veins; lip very large, curved, rounded at the bottom, and the margins contracted, pale yellow within, marked with deep orange hairy lines. Seed-veſſel erect, about an inch long, ſomewhat priſm-ſhaped, with three flat ſides, and three ribbed angles [b].

Native of Lapland, Sweden, Switzerland, Savoy, Piedmont, Germany, Hungary, Poland, &c. In the north of England, in woods and thickets, but rare.—Parkinſon and Ray remarked it to grow in Helk's wood, Lancaſhire, near Ingleborough, Yorkſhire: but Mr. Woodward has ſearched for it there in vain; a gardener of Ingleton having eradicated every plant for ſale.] Mr. Miller found it in the park of Borough-hall, in Lancaſhire, the ſeat of the late Robert Fenwick, Eſq.—[About Clapham and Ingleton in Yorkſhire. In the neighbourhood of Kilnſay; and about Kilſey-Crag, Wharſdale, both in Yorkſhire; and Caſtle-Eden-dene in the county of Durham.—Gerarde had a plant of it in his garden, which he received from his very good friend Maſter Garret, an apothecary. It was not then known to grow wild in England.

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[r] Retz.
[s] Ibid.
[t] Forſter.
[a] Mill. dict. & fig.
[b] Woodw. Mſs.

Johnſon adds, that it was reported to grow in the north parts of this kingdom; and that he ſaw it in flower with Mr. Tradeſcant. Its old name in Engliſh was *Our Ladies ſhoe* or *ſlipper*, from the latin, *Calceolus D. Mariæ*, or *Marianus*. It is the ſame in the other European languages. In German, *Marienſchuh*. In French, *Sabot de la Vierge*, or *Soulier de Notre-Dame*. In Italian, *Pantoffala* or *ſcarpa della Madonna*, &c.]

It flowers the end of may, and the ſtalks decay to the root in autumn; new ones riſing the following ſpring.

β. The ſtalks riſe near a foot and half high; it has longer and ſmoother leaves than the European. The two ſide petals of the flower are long, narrow, terminate in acute points, and the ſides are waving. The nectarium is oblong and narrower, yellow, ſpotted with browniſh red. Native of Virginia, and other parts of North America.

γ. This riſes a foot and half high. The leaves are of an oblong oval form, and deeply veined. The flower is large, of a reddiſh brown colour, marked with a few purple veins. It flowers the end of may.

Native of America, where it is called Moccaſin flower. [Theſe are thought to be diſtinct ſpecies. This is probably the ſame with our fourth; but *bulboſum* of Miller does not correſpond with our ſecond.

2. Root a bulb, throwing out a few thick fibres from its lower part, and inveſted with a ſemi-tranſparent, acute, erect membrane, riſing far above its top. Leaf radical, ſolitary, petioled, oval, ſomewhat pointed, entire, ribbed, ſmooth, dark green, ſpotted with brown, very like the Dog's-tooth Violet. Stalk three inches high, erect, round, one-flowered, inveſted with two tubular, membranous ſheaths. Bracte ſolitary, not far from the flower, linear-lanceolate, acute, purpliſh. Flower a little inclined. Petals five, all pointing upwards, ſpreading, lanceolate, acute, three-nerved, purple, three on the outſide of the other two. Lower lip of the nectary as long as the petals, very large, pendulous, ſtreaked with purple, having a prominent cloven point in the fore-part beneath, gaping above, with a ſpreading, reflex, dependent margin, and bearded in the orifice with a little tuft of yellow hairs; the upper lip ſhorter than the petals, erect, broad-oval, entire, almoſt of the ſame ſubſtance and colour with the petals [c].

Native of Lapland, Ruſſia, Siberia, and Nova Scotia.

3. Stem round, erect, villoſe, a foot high. Leaves in the middle of the ſtem two, embracing, acute, ſinuate-waved, ſmooth, a hand broad. Below the flower a ſeſſile, ſolitary, oblong, acute, entire leaflet, ſcarcely an inch in length. Flower terminating, ſolitary, the ſize of that of the common ſpecies. Native of Japan, flowering in april and may [d].

4. This ſpecies derives its name from the whiteneſs of its petals. The large nectary is tinged with purple. It is the moſt magnificent of the genus; whence Mr. Saliſbury has called it *ſpectabile*: indeed there are few flowers which to ſuch ſingularity of ſtructure add ſuch elegance and beauty. It grows ſpontaneouſly in various parts of North America, chiefly in the woods. In the catalogue of the royal garden at Kew, it is ſaid to have been introduced there by Mr. William Young, about the year 1770, but it was known to Mr. Miller, and cultivated by him at Chelſea, long before that period [e]; if it be his *hirſutum*.

5. Has rarely more than two radical leaves, a very ſhort flowering ſtem compared with the others, a large nectary in proportion to the ſize of the plant, divided on its upper part, through its whole length, ſo as to deſtroy in a great degree that ſhoe or ſlipper-like form from which this genus has taken its name. It flowers with us in may [f].—Native of North America. Introduced in 1786, by William Hamilton, Eſq. [g].]

PROPAGATION AND CULTURE.

All theſe ſorts are with ſome difficulty preſerved in gardens; they muſt be planted in a loamy ſoil, and in a ſituation where they may have the morning ſun only. They muſt be procured from the places where they naturally grow, for they cannot be propagated in gardens. The roots ſhould be ſeldom removed, for tranſplanting them prevents their flowering.

[Our Engliſh ſort ſucceeds very well in a pot, ſet under a hedge, where it has the morning ſun only, and will laſt thus many years. The roots will ſpread ſo as to fill the pot, and the plant may be propagated by parting the roots, but it muſt be done with caution. The American ſorts require a little ſhelter in ſevere weather.

The gardeners (ſays Dr. Stokes) might make the botaniſts amends for rooting out theſe rare wild plants in their natural places of growth, and at the ſame time enrich themſelves, if they would prove by experiment that one at leaſt of the Orchis tribe may be raiſed from ſeed [h].

CYPRIPEDIUM. See *Arethuſa*, and *Ophrys*.

CYPRUS. See *Lawſonia*.

CYRILLA. (*So named by L'Heritier, in honour of Dominico Cyrillo, M. D. Profeſſor of Medicine at Naples, author of Plantæ rariores regni Neapolitani, &c.*)

L'Herit. ſt. nov. 6. 147. *t.* 71.

Claſſ. 14. 2. Didynamia Angioſpermia.

Nat. order of *Perſonatæ*.

GENERIC CHARACTER.

CAL. *Perianth* ſuperior, five-leaved, permanent: *leaflets* linear-lanceolate, acute, ſpreading.

COR. one-petalled, funnel-form: *tube* cylindric, ſubcompreſſed, inflated, declined-ſtraight, longer than the calyx: *border* almoſt equal, inclined, five-parted; parts rounded, revolute, ſpreading, the three lower more produced.

STAM. *Filaments* four, the two lower longer, filiform, then capillary incurved-converging, finally ſpiral, thickened at the baſe, inſerted into the lower margin of the corolla, ſhorter than the tube. *Anthers* ovate, two-celled, peltate, diſtinct before flowering time, but afterwards united into a ſquare, white.

PIST. *Germ* half emerging, conic at top, with a nectareous lid, below turbinate, villoſe. *Style* filiform, pubeſcent, becoming bent down, the length of the ſtamens. *Stigma* two-lobed.

PER. *Capſule?* turbinate, half-two-celled: *partitions* two, extending half way, each ending in a two-parted receptacle.

SEEDS numerous, ſmall.

ESSENTIAL CHARACTER.

Cal. ſuperior, five-leaved, linear-lanceolate. *Cor.* declined, funnel-form: tube cylindric, gibbous on its lower edge: throat tricallous: border inclined, five-parted; ſegments roundiſh, the three lower more produced. *Filaments* inſerted into the margin of the corolla, incurved, with a fifth barren. *Anth.* cohering. *Germ* inferior, half emerging, with a nectareous lid. *Style* bent down. *Stigma* two-lobed. *Capſ.* half-two-celled, with two-parted receptacles. *Seeds* numerous.

SPECIES.

1. Cyrilla pulchella.

L'Herit. ſtirp. nov. 6. 147. *t.* 71. *Brown. jam.* 271. *t.* 30. *f.* 1. (Achimenes).

DESCRIPTION, *&c.*

This is a handſome plant. Root branched, fibroſe, ſtoloniferous. The young ſhoots reſemble aments or catkins, are cylindric, and cloſely imbricate, with ovate pubeſcent ſcales, thickened at the baſe, emarginate and red. Stems ſeveral, almoſt upright, branched, round, extremely villoſe, duſky purple, herbaceous: branches ternate, ſpreading. Stem-leaves in threes, on the branches uſually oppoſite, petioled, ovate or ovate-lanceolate, ſharp at both ends, looſely ſerrate, entire at the baſe, with nerves prominent below, grooved above, villoſe on both ſides, bright green, beneath paler, and very frequently blood-red. Petioles round on one ſide, on the other flattiſh and ſlightly channelled, one third only of the length of the leaves. Flowers reſembling thoſe of *Ruellia*, axillary, ſolitary, peduncled, inclined, red. Peduncles ſpreading very much, round, villoſe, red, twice the length of the petioles. Calyx villoſe, ending in a turbinate germ, red at the baſe. Tube of the corolla pubeſcent: throat tricallous at bottom; with oblong tubercles, hollowed outwards, each oppoſite to each ſegment. Beſides the four fertile filaments, there is a fifth ſuperior to and ſhorter than the others, which has no anther. This plant is diſtinguiſhed from *Geſneria* by its funnel-form corolla, with a cylindric ſtraight tube, and a flat almoſt equal border.

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[c] Smith ſpicil.

[d] Thunberg.

[e] Curt. magaz.

[f] Curt. magaz.

[g] Hort. kew.

[h] With. Arr.

Native of Jamaica[a]. Browne obſerved it near Hope-river, in the lower mountains of Liguanea. It flowers here at the end of ſummer and the beginning of autumn.

PROPAGATION AND CULTURE.

It muſt be kept in the bark ſtove, and may be propagated by ſuckers. It never produces ſeed here. It deſerves to be cultivated in the Weſt-Indies for its beauty and elegance. There it thrives beſt in a cool moiſt gravel, mixed with rich mould[b].

Cyrilla racemiflora. See *Itea.*

CYRTANDRA. See *Beſleria.*

CYRTANTHUS. (*From* κυρτος *bent, and* ανθος *a flower.*)

Ait. hort. kew. 3. 510.

Claſſ. 6. 1. Hexandria Monogynia.

Nat. order of *Spathaceæ. Narciſſi.* Juſſ.

GENERIC CHARACTER.

CAL. none.

COR. one-petalled, club-ſhaped, bent, ſix-cleft at top: ſegments ovate-oblong; the three inner blunt, the three outer terminating in a little horn.

STAM. *Filaments* ſix, faſtened to the tube, filiform-ſubulate, a little ſhorter than the corolla. *Anthers* oblong, erect.

PIST. *Germ* inferior, ovate, obtuſely three-cornered. *Style* filiform, the length of the *corolla. Stigma* trifid.

ESSENTIAL CHARACTER.

Cor. tubular, club-ſhaped, crooked, ſix-cleft; ſegments ovate-oblong. *Filam.* inſerted into the tube, converging at top.

SPECIES.

1. Cyrtanthus anguſtifolius. *Narrow-leaved Cyrtanthus.*
Ait. hort. kew. 1. 414. *Curt. magaz.* 271.
Crinum anguſtifolium. *Linn. ſuppl.* 195.
Leaves obtuſely keeled, ſtraight, flowers drooping.

2. Cyrtanthus obliquus. *Oblique-leaved Cyrtanthus.*
Ait. hort. kew. 1. 414.
Crinum obliquum. *Linn. ſuppl.* 195.
Amaryllis Umbrella. *L'Herit. ſert. angl.* 15. *t.* 16.
Leaves flat, oblique, flowers pendulous.

DESCRIPTIONS, &c.

1. Flowers narrow, purple, with a bent tube[c]; from which latter circumſtance it takes the name. The ſmall glandular hook at the extremity of each alternate ſegment of the corolla is deſerving of notice[d].

2. This is ſingular for its long oblique leaves. Flowers purple[e]: tube turbinate, border bell-ſhaped, erect[f].

Theſe are both natives of the Cape of Good Hope, where they were found by Thunberg and Maſſon. They were introduced at Kew in 1774, and flower from may to july.

PROPAGATION AND CULTURE.

Theſe plants may be increaſed by off-ſets or ſeeds, and require the ſame treatment as other bulbs from the Cape[g]. See CRINUM and AMARYLLIS.

CYRTANTHUS Schreb. See *Ignatia.*]

CYSTICAPNOS. See *Fumaria.*

CYTINUS. (*Theophraſtus calls the flowers of the Pomgranate* Κυτινοι.)

Lin. gen. n. 1232. *Reich.* 1115. *Schreb.* 1384. *Juſſ.* 73. *Hypociſtis. Tourn. inſt.* 477. *Thirſine. Gleditſch. verm. abhandl. T.* 1. 226. *Tab.* 2.

Claſſ. 20. 7. Gynandria Octandria.

Nat. order of *Ariſtolochiæ.* Juſſieu.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, tubular-bell-form, permanent. *Tube* cylindric; *border* patulous, four-parted, ſomewhat obtuſe, coloured.

COR. none.

STAM. ſixteen. *Filaments* none. *Anthers* oblong, growing to the tip of the ſtyle under the ſtigma, oblong, two-valved.

PIST. *Germ* inferior, rounded. *Style* cylindric, length almoſt of the calyx. *Stigma* eight-cleft, gibbous, obtuſe.

PER. *Berry* crowned, roundiſh, coriaceous, eight-celled.

SEEDS numerous, minute, roundiſh.

ESSENTIAL CHARACTER.

Style one. *Cal.* four-cleft, ſuperior. *Cor.* none. *Anthers* ſixteen, ſeſſile. *Berry* eight-celled, with many ſeeds.

SPECIES.

1. Cytinus Hypociſtis. *Rape of Ciſtus.*
Lin. ſyſt. 826. *Reich.* 4. 65. *mat. med.* 197. *Allion. pedem. n.* 2070.
Aſarum Hypociſtis. *Lin. ſpec.* 633.
Hypociſtis. *Bauh. pin.* 465. *Cam. epit.* 96, 97. *Duham. arb.* 1. 170. *t.* 68. *Raii hiſt.* 1228. 9. (Orobanche). *Ger.* 1093. 2. *emac.* 1275. 2. *Park. theat.* 667.

DESCRIPTION, &c.

A paraſitical plant growing at the roots of the Ciſtus. Leaves ſeſſile, cloſely imbricate. Flowers terminating, heaped[h].

Below the flower are two oppoſite ſcales, becoming purple by age. The colour of the flower itſelf is dirty yellow. The number of anthers, and the diviſions of the ſtigma vary; the number of the anthers is double the diviſions of the ſtigma. Annual[i].

Native of the county of Nice, Spain, Portugal and Barbary.]

CYTISO-GENISTA. See *Spartium.*

CYTISUS. Κυτισος *of Hippocrates, Theophraſtus and Dioſcorides. Said by Pliny to have been firſt found in the iſle of Cythnus; whence it is ſuppoſed to have derived its name.*)

Lin. gen. n. 877. *Reich.* 951. *Schreb.* 1191. *Tourn.* 416. *Juſſ.* 354.

Claſſ. 17. 4. Diadelphia Decandria.

Nat. order of *Papilionaceæ,* or *Leguminoſæ.*

GENERIC CHARACTER.

CAL. *Perianth* one leafed, bell-form, ſhort, obtuſe at the baſe: *mouth* two-lipped; *upper* lip two-cleft, acuminate; *lower* three-toothed.

COR. Papilionaceous.
Standard ovate, riſing upwards, ſides reflex.
Wings the length of the ſtandard, ſtraight, obtuſe.
Keel ſomewhat bellied, acuminate.

STAM. *Filaments* diadelphous, (ſingle and nine-cleft) riſing upwards. *Anthers* ſimple.

PIST. *Germ* oblong. *Style* ſimple, riſing upwards. *Stigma* obtuſe.

PER. *Legume* oblong, obtuſe, attenuated at the baſe, ſtiff.

SEEDS a few, kidney-form, compreſſed.

OBS. C. Cajan *has the wings of the corolla flat horizontally, and an obtuſe keel.*
C. ſupinus *has a tubular calyx, which is bellied, and two-lipped.*

ESSENTIAL CHARACTER.

Cal. two-lipped; upper lip two-cleft, lower three-toothed. *Legume* attenuated at the baſe.

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[a] L'Heritier.
[b] Browne.
[c] Linn. ſuppl.
[d] Curtis.
[e] Linn. ſuppl.
[f] L'Heritier.
[g] Curtis.
[h] Juſſieu.
[i] Allioni.

SPECIES.

1. Cytiſus Laburnum. *Laburnum,* anciently *Bean-trefoil-tree.*

Lin. ſpec. 1041. *Reich.* 3. 481. *hort. cliff.* 354. *upſ.* 210. *Hall. helv. n.* 360. *Scop. carn. n.* 903. *Jacqu. auſtr.* 4. *t.* 306. *Villars dauph.* 3. 409. *Duham. arb.* 1. *t.* 85. *Curt. magaz. t.* 176.

Laburnum, &c. *Bauh. hiſt.* 1. 361. *Rivin. t.* 62.

Anagyris. *Ger.* 1239. *f.* 1. *emac.* 1427. 1.——non foetida major alpina. *Bauh. pin.* 391. *Raii hiſt.* 1721.——non foet. ſ. Laburnum majus. *Park. theat.* 245. *f.* 2. *parad.* 438.

α. *Common Laburnum.* Leaves underneath and legumes hoary.

β. C. alpinus. Long-ſpiked or narrow-leaved Laburnum. *Mill. dict. n.* 2.

With leaves and legumes ſmooth.

Racemes ſimple pendulous, leaflets ovate-oblong.

2. Cytiſus nigricans. *Black Cytiſus.*

Lin. ſpec. 1041. *ſyſt.* 666. *Reich.* 3. 481. *hort. cliff.* 354. *Hall. helv. n.* 361. *Scop. carn. n.* 904. *Jacqu. auſtr.* 4. *t.* 387. *Mill. fig. t.* 117. *f.* 1. *Krock. ſileſ. n.* 1181. *Rivin. t.* 70.

C. glaber nigricans. *Bauh. pin.* 390. *Raii hiſt.* 973. *n.* 11.

C. Geſneri, cui flores fere ſpicati. *Bauh. hiſt.* 1. 370. *f.* 2.

C. IV. *Cluſ. hiſt.* 1. 95.

Racemes terminating erect; calyxes hairy, with minute toothlets; leaflets elliptic hairy underneath.

[3. Cytiſus wolgaricus. *Winged-leaved Cytiſus.*

Lin. ſyſt. 666. *ſuppl.* 327.

C. pinnatus. *Pallaſ. fl. roſſ.* 1. 73. *t.* 47.

Hoary: racemes ſimple erect; flowers pointing the ſame way; leaves pinnate, leaflets roundiſh; ſtipules ſubulate.]

4. Cytiſus ſeſſilifolius. *Common Cytiſus.*

Lin. ſpec. 1041. *ſyſt.* 666. *Reich.* 3. 481. *vir. cliff.* 71. *hort. cliff.* 355. *Gouan monſp.* 375. *Duham. arb.* 1. *Villars dauph.* 3. 410. *Curt. magaz.* 255.

C. fol. glabris ſubrotundis, pediculis breviſſimis. *Bauh. pin.* 390.

C. vulgatior. *Park. parad.* 440.

C. glaber, ſiliqua lata. *Bauh. hiſt.* 1. 373. 2.

C. 2. *Ger.* 1121. *emac.* 1304.

Racemes erect; calyxes with a triple bracte; floral leaves ſeſſile.

5. Cytiſus Cajan. *Pigeon Cytiſus,* or *Pigeon Pea.*

Lin. ſpec. 1041. *ſyſt.* 666. *Reich.* 3. 482. *fl. zeyl. n.* 279. *hort. upſ.* 211. *cliff.* 354. *Burm. zeyl.* 86. *t.* 37. *Brown. jam.* 296. *Hughes barbad.* 199. *t.* 19. *Jacqu. obſ.* 1. *p.* 1. & *hort.* 2. *t.* 119. *Rheed. mal.* 6. *t.* 13. *Lour. cochinch.* 462.

C. fruteſcens. *Plum. ſpec.* 19. *ic.* 114. *f.* 2.

Laburnum humilius, &c. *Sloan. jam.* 2. 31.

Phaſeolus erectus, &c. *Pluk. alm. t.* 213. *f.* 3.

Phaſeolus Kayan. *Raii hiſt.* 1722. 6.

Racemes axillary erect; leaflets ſublanceolate tomentoſe, the middle one on a longer petiole.

6. Cytiſus hirſutus. *Hairy* or *Evergreen Cytiſus.*

Lin. ſpec. 1042. *ſyſt.* 666. *hort. upſ.* 211. *cliff.* 355. *Jacqu. obſ.* 4. *t.* 96. *Gmel. ſib.* 4. 17. *t.* 6. *f.* 2. *Krock. ſileſ. n.* 1184. *Villars dauph.* 3. 411.

C. hirſutus & proſtratus. *Scop. carn. n.* 907, 908.

Cytiſus. *Cluſ. hiſt.* 1. 94.—incanus, ſiliqua longiore—&, fol. ſubrufa lanugine hirſutis. *Bauh. pin.* 390.

Peduncles ſimple lateral; calyxes hirſute trifid obtuſe ventricoſe-oblong.

[7. Cytiſus capitatus. *Cluſter-flowered Cytiſus.*

Lin. ſyſt. 666. *Jacqu. auſtr.* 1. 22. *t.* 33. *Krock. ſileſ. n.* 1185. *Scop. carn. n.* 906.

C. ſupinus. *Lin. ſyſt. edit.* 13. *p.* 555.

Flowers in heads; branches erect ſtrict round villoſe; leaves ovate-elliptic villoſe; bracte linear beneath the calyx.]

8. Cytiſus auſtriacus. *Siberian Cytiſus.*

Lin. ſpec. 1042. *Reich.* 3. 484. *Jacqu. auſtr.* 1. 16. *t.* 21. *Mill. fig. t.* 117. *f.* 2. *Krock. ſileſ. n.* 1182.

C. V. *Cluſ. hiſt.* 1. 195.——incanus, fol. oblongo, auſtriacus. *Bauh. pin.* 390.

Flowers in umbels terminating; ſtem erect; leaflets lanceolate.

9. Cytiſus ſupinus. *Trailing Cytiſus.*

Lin. ſyſt. 667. *Jacqu. auſtr.* 1. 15. *t.* 20. *Krock. ſileſ. n.* 1183. *Villars dauph.* 3. 410.

C. ſupinus, fol. incana lanugine inferne pubeſcentibus. *Bauh. pin.* 390.

C. 7. ſpecies altera. *Cluſ. hiſt.* 96. *Raii hiſt.* 972. *n.* 7.

Flowers peduncled about two together; leaves villoſe; ſtem decumbent, becoming ſhrubby.

[10. Cytiſus proliferus. *Silky Cytiſus.*

Lin. ſyſt. 667. *ſuppl.* 328.

Flowers in lateral umbels; ſtems erect; leaves elliptic acute ſilky underneath; calyxes woolly.]

11. Cytiſus argenteus. *Silvery Cytiſus.*

Lin. ſpec. 1043. *ſyſt.* 667. *Ger. prov.* 484. *n.* 4. *Gouan hort.* 377. *Scop. carn. n.* 910. *Villars dauph.* 3. 411.

Lotus fruticoſus incanus ſiliquoſus. *Bauh. pin.* 332. *Lob. ic.* 2. 41.

Trifolium argentatum, flor. luteis. *Bauh. hiſt.* 2. 359.

Flowers generally two together ſubſeſſile; leaves tomentoſe; ſtems decumbent; ſtipules minute.

[12. Cytiſus purpureus.

Lin. ſyſt. 667. *Jacqu. auſtr.* 5. 54. *app. t.* 48. *Scop. carn. n.* 905. *t.* 43.

Flowers peduncled ſolitary; leaves ſmooth; ſtems decumbent, becoming ſhrubby; legumes ſickled above.

13. Cytiſus glaber.

Lin. ſyſt. 667. *ſuppl.* 328.—ſiliqua anguſta. *Bauh. hiſt.* 1, 2. 373. *f.* 1.

Flowers ſolitary lateral ſubſeſſile pendulous; leaves ternate.]

14. Cytiſus græcus.

Lin. ſpec. 1043. *Reich.* 3. 484.

Leaves ſimple lanceolate-linear, branches angular.

15. Cytiſus tener.

Lin. ſyſt. 667. *Jacqu. collect.* 1. 40. *icon. rar.* 1. 147.

Spartium virgatum. *Ait. hort. kew.* 3. 11.

Leaves ſimple lanceolate; branches round.

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16. Cytiſus folioloſus. *Leafy Cytiſus.*

Ait. hort. kew. 3. 49.

Racemes terminating erect; calyxes villoſe, ſegments ſickle-ſhaped; leaflets obovate-oblong.

17. Cytiſus divaricatus. *Clammy Cytiſus.*

L'Herit. ſtirp. nov. t. 91. *ined. Ait. hort. kew.* 3. 50.

Spartium complicatum. *Lin. ſpec.* 996.

Racemes terminating erect; calyxes and legumes ramentaceous-viſcid; leaflets oblong.

18. Cytiſus biflorus. *Smooth Cytiſus.*

L'Herit. ſtirp. nov. t. 92. *ined. Ait. hort. kew.* 3. 52.

Peduncles generally in pairs lateral; calyxes oblong villoſe two-lipped, upper lip bifid; leaflets oblong-elliptic.

DESCRIPTIONS, *&c.*

All the ſpecies of Cytiſus are ſhrubs without ſpines, moſt of them very fit for ornamental plantations. They are chiefly hardy; the leaves ternate; the flowers, except in the twelfth, yellow, and growing in bunches.

1. The common height of the Laburnum is from eight to fifteen feet; but in good ground and when planted thick it will run up much higher. Leaves ternate, on long petioles, commonly three together from one point: leaflets quite entire, ſmooth and pale green on the upper ſurface, glaucous and covered with ſhort appreſſed hairs on the lower, which has a ſtrong prominent nerve or midrib. The flowers come out from the ſame ſhort ſpurs with the leaves in naked, handſome, villoſe racemes, a ſpan in length; and beyond theſe young ſhoots are produced, which are white, and bear the ternate leaves ſingly. Each flower hangs from a long pedicel. Calyx yellowiſh, ſmall, two-lipped; the upper lip cloven, the lower having three minute teeth. Corolla

pale yellow; ſtandard broad, emarginate with duſky ſpots and dots within at the baſe; wings longer than the keel, hooked; keel in two parts; ſtaminiferous ſheath in one piece, the two upper filaments ſtanding croſſwiſe: germ ſmooth. Legume from an inch to near two inches in length, covered with white appreſſed hairs, containing from one or two to ſix or ſeven ripe ſeeds, which are black and ſhining; ſeveral at one or both ends are frequently abortive[a].

There are two varieties of Laburnum, which Mr. Miller regards as diſtinct ſorts.] The firſt broad-leaved, which was formerly more common in the Engliſh gardens than at preſent; and the ſecond, the narrow-leaved, which having much longer ſpikes of flowers makes a finer appearance, and has in a manner diſcarded the other from ornamental plantations: the firſt however grows to be the largeſt tree, and the wood of it is very hard, of a fine colour, and will poliſh very well; it approaches near to green Ebony, and is called by the French Ebony of the Alps, and is there uſed for many kinds of furniture; but in England there are few of theſe trees which have been ſuffered to ſtand long enough to arrive to any conſiderable ſize, for as they have been only conſidered as ornamental, the frequent alterations which moſt of the gardens in England have undergone, have occaſioned their being rooted out wherever they were growing; but in ſome of the old gardens in Scotland, where they have been permitted to ſtand, there are large trees of this kind, which are fit to cut down for the uſe of the timber. I have ſeen two old trees of it in gardens, which were more than a yard in girt, at ſix feet from the ground, and theſe had been broken and abuſed, otherwiſe might have been much larger: they grow very faſt, and are extremely hardy, and therefore may be well worth propagating upon poor ſhallow ſoils, and in expoſed ſituations. His Grace the Duke of Queenſberry ſowed a great quantity of the ſeeds of this tree, upon the ſide of the downs, at his ſeat near Ameſbury, in Wiltſhire, where the ſituation was very much expoſed, and the ſoil ſo ſhallow, that few trees would grow there; yet in this place the young trees were twelve feet high in four years growth, and became a ſhelter to the other plantations, for which purpoſe they were deſigned; but the hares and rabbits being great enemies to theſe trees, by barking them in winter, they ſhould be fenced from theſe animals.

[Hence it is ſuggeſted by Mr. Boutcher that the Laburnum is very proper to ſow in plantations infeſted with hares and rabbits, who will touch no other plant ſo long as a twig of Laburnum remains. Though eaten to the ground in winter it will ſpring again the next ſeaſon, and thus conſtantly ſupply theſe noxious animals: ſo that by expending five ſhillings in Laburnum ſeed a whole plantation may be ſecured.

But the Laburnum is not only uſeful in preſerving other more valuable trees. The wood is of great ſtrength, and is much uſed for pegs, wedges, muſical inſtruments, handles of knives, and a variety of furniture. Mr. Boutcher mentions, that he had ſeen a large table and a dozen chairs made of it, which judges of elegant furniture thought the fineſt they had ever ſeen. Pliny ſays its wood is the hardeſt of any next to Ebony. Matthiolus ſpeaks of its being uſed for making the beſt bows. It chars remarkably well: and if planted thick to run up tall, it would make durable hop-poles.] For this purpoſe it might be planted in large clumps in parks, where it would be alſo very ornamental; the branches being generally loaded with long ſtrings of flowers, hanging down from every part of them, in the month of may. [Haller obſerves, that it is very bitter, and that the ſeed both purges and vomits violently. He alſo remarks, that the Latin name *Laburnum* was evidently formed from the alpine name *L'Aubours*. Formerly it was called in Engliſh *Bean-Trefoil* and *Peaſcod-tree*, but the Latin name has prevailed over theſe. In German it is *Bohnenbaum*, and in French *Cytiſe des Alpes*, *Aubours*, and *Faux Ebenier*.

It is a native of Switzerland, Auſtria, Provence, *&c.* and was cultivated here by Gerarde in 1596[b]. Tradeſcant had both varieties in his garden[c].]

2. This ſhrub ſeldom riſes more than three or four feet high in England; it naturally puts out many lateral branches near the ground, which ſpread out on every ſide, ſo as to form a low ſhrubby buſh, which is with difficulty raiſed to a ſtem: the branches are very ſlender, and their ends are frequently killed in ſevere winters. The leaves grow by threes, are equal in ſize, and of a dark green colour. The branches grow erect, and are terminated by bunches of yellow flowers, about four or five inches in length, and making a fine appearance.

[The branches, calyx and legume, as well as the under ſurface of the leaves, are covered with a fine ſilvery pile[d]: the end leaflet is larger than the ſide ones[e]. In its native place of growth it is found from a foot and half to the height of a man, with erect, round, ſmooth, pliant ſtems[f]. The flowers are pendulous on ſhort peduncles, and have an agreeable odour. The upper lip of the calyx is entire; the three teeth of the lower are very ſmall. Standard of the corolla roundiſh, blunt, reflex; keel very large and wide; wings a little ſhorter; the whole flower has a ſhort and broad appearance[g].

Native of Sileſia, Auſtria, Hungary and Italy.—Cultivated in 1731, by Mr. Miller[h];] who ſays, that it was formerly in ſome of the curious gardens here, but had been long loſt, till he procured the ſeeds, which ſucceeded in the Chelſea garden. It flowers in july, after moſt of the other ſorts are paſt.

[3. This is a very handſome ſhrub, ſcarcely growing to two feet in height. The leaves have from three to nine, but uſually ſix or ſeven pairs of leaflets, terminated by an odd one; they are ſmooth above, ſilvery beneath, and moſtly orbiculate. The flowers are large, and of a deep yellow colour[i]; in axillary and terminating racemes, erect, on peduncles much longer than the leaves, about ten in number, generally oppoſite or nearly ſo in pairs, with a ſmall acuminate bracte to each pedicel. Calyx and pedicels lanuginoſe, and having reddiſh glutinoſe glands ſcattered over them. Calyx deeply five-cleft; the ſegments ſubulate, equal, the loweſt narrower than the reſt. Legumes cylindric, ſwelling at the end, ſomewhat toroſe, hirſute with glandular hairs. Seeds large, gray, teſtaceous-variegated[k].

Native of Siberia, in the deſerts between the Tanais and the Wolga: obſerved there by Pallas[l]. Introduced here in 1786, by William Pitcairn, M. D.[m]]

4. This riſes with a woody ſtalk, putting out many branches, covered with a browniſh bark. Leaflets obovate, ternate, on very ſhort petioles. Flowers in cloſe ſhort terminating racemes, of a bright yellow colour. Legumes ſhort and broad. This ſhrub riſes to the height of ſeven or eight feet, and becomes very buſhy. [The leaves are on long petioles, but on the flowering-branches ſeſſile. Filaments all connate at bottom. Legumes blackiſh[n]. This ſhrub is eaſily known by its ſmoothneſs, the uprightneſs of the ſtalks and racemes, and particularly by the triple bracte immediately below the flower.

Native of the South of Europe. Cultivated here in 1713[o].] Mr. Miller ſays it has been long cultivated in the nurſery gardens as an ornamental ſhrub, by the title of Cytiſus ſecundus Cluſii. [If it be C. vulgatior of Parkinſon, it was common among us in 1629. According to Johnſon, it grew in the garden of Mr. John Tradeſcant.

Ruminating animals greedily devour the leaves and young branches of this ſort, whilſt the goat only touches the Laburnum[p].]

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[a] Haller, Scopoli, Jacquin.

[b] Hort. kew. [c] Johnſon in Ger. emac. [d] Haller.
[e] Linn. ſyſt. [f] Jacquin. [g] Haller. [h] Hort. kew.
[i] Linn. ſuppl. [k] Pallas. [l] Linn. ſuppl. [m] Hort. kew.
[n] Linn. ſyſt. and Crantz. [o] Hort. kew. [p] Villars.

5. This riſes with a weak ſhrubby ſtalk eight or ten feet high, ſending out many ſide branches, which grow erect. The flowers come out from the ſide of the branches, ſingle or in cluſters; they are of a deep yellow colour, and about the ſize of thoſe of the common Laburnum. Legumes hairy, about three inches long, ſickle-ſhaped, ending in a long ſharp point, ſwelling where each ſeed is lodged. Seeds roundiſh, a little inclined to kidney-ſhape. [The leaves are very ſoft, in ſome views white. Calyx ſubpubeſcent. Standard of the corolla erect, wings horizontally flat, keel blunt. Stamens truly diadelphous. Legume intercepted by obliquely tranſverſe ſtreaks[q].

The Pigeon Pea is frequently planted in the Weſt India iſlands, chiefly in rows as a fence to the ſugar plantations, and will thrive on barren land. The ſeed is much eaten by poor people and negroes, and is eſteemed a wholeſome pulſe; in the iſland of Martinico even the better ſort of people hold it in eſtimation, and prefer it to the European Pea. The chief uſe of it in Jamaica is for feeding Pigeons, whence its name. The branches with the ripe ſeed and leaves are given to feed hogs, horſes, and other cattle, which grow very fat on them[r].

Native of both Indies and Africa, whence they are ſuppoſed to have been originally brought to the Weſt Indies, where they are called *Angola Peas* and *Pois d'Angola*.—It was cultivated in 1694, by the Dutcheſs of Beaufort[s]; and by Doody in 1687[t].]

6. This has a ſoft ſhrubby ſtalk, dividing into many branches, which grow erect, and frequently riſe to the height of eight or ten feet; the ſtalks, branches, and leaves are very hairy; the leaves are ternate, ovate, and placed cloſely on the branches; the flowers come out from the ſide of the ſtalk, in ſhort racemes, they are of a pale yellow, appear in june, and are ſucceeded by long, narrow, hairy legumes, which ripen in ſeptember.

[The branches are decumbent, the calyxes extremely hirſute, the ſtamens all connate at bottom, the legumes black, the ſeeds ovate, ſix, ſeven or eight, pedicelled, with two ſmall bractes embracing the pedicel[u].

Native of the South of Europe and Siberia. Cultivated in 1739 by Mr. Miller,] who ſays that it is common in the nurſery gardens near London, under the name of Evergreen Cytiſus of Naples.

[7. Stem and petioles pubeſcent. Leaves ſmoothiſh Calyx tubular, bellying, pubeſcent[x]. It differs from the preceding in having moſt of the flowers terminating, and in a genuine head; the leaves more obtuſe, and hairy on both ſides; the ſtems ſcarcely ever a cubit in height, and extremely hirſute[y].

Native of Auſtria, Carniola, and Sileſia. Introduced in 1774, by Joſ. Nich. de Jacquin, M. D.[z]]

8. This has a ſhrubby ſtalk, which riſes near four feet high, dividing into many branches, which when young are covered with a green bark; the flowers are produced in cloſe heads at the ends of the branches, having a cluſter of leaves under them; they are of a bright yellow colour, appear in the beginning of may, and are ſometimes ſucceeded by ſhort woolly legumes, containing three or four ſmall ſeeds.

[This reſembles *C. ſupinus*, but the ſtems are erect, very branching and panicled. The leaflets are lanceolate not ovate[a], ſmoothiſh but covered on both ſides with a ſhining aſh-coloured ſhort pile, quite entire, terminated by a ſhining toothlet; petiole long, hoary, hairy. Flowers in each umbel from five to ten, ſupported by one or two toothletted bractes, and without any ſide flowers. Calyx yellowiſh, woolly. Standard of the corolla villoſe at the back, emarginate, wide, with the edges fringed as it were and curled; wings longer than the keel, with waving edges; keel cloven, ſpreading, villoſe. Filaments all connate. Legumes hirſute, erect[b].

Native of Auſtria, Hungary, Sileſia, Italy, and Siberia. It was cultivated in 1756, by Mr. Miller[c];] who ſays, that the ſeeds were ſent to the Imperial garden at Peterſburg, and thence by Profeſſor Amman to England.

9. [The ſtems of this are almoſt wholly procumbent, round, duſky, little divided: the ends are cloſely beſet with leaves and flowers, which come out together from ſpreading buds, formed of a few ſubovate ſimple bractes; the longer ſtems are frequently decorated with flowers for a foot in length; two flowers uſually proceed from each bud, but ſometimes only one, and rarely three or more, on ſhort peduncles. The younger branches, the petioles, peduncles, and leaves, eſpecially underneath, are covered with ſoft whitiſh hairs, which are frequently ſhort and ſcarcely viſible. Calyx pale and hirſute; lower lip quite entire, upper ſhortly bifid. Standard of the corolla roundiſh, wide, emarginate, longer than the wings. All the filaments connate. Flowers erect, deep yellow, but before they decay becoming reddiſh. Legume oblong, much compreſſed, brown, ſtraight, hairy. Seeds ſeveral, ſhining, brown. In the garden it becomes more pubeſcent, and by age more ſhrubby, branched and diffuſed, riſing to four feet in height, with long recurved branches loaded with flowers[d].

Native of the South of Europe and Siberia. Cultivated in 1759, by Mr. Miller[e].

10. This reſembles the next ſpecies. The ſtems, but eſpecially the ſmall branches are almoſt tomentoſe. Leaves alternate, petioled. Peduncles axillary, (four to eight) equal, one-flowered, a little longer than the petiole, filiform, villoſe, with two oppoſite filiform bractes near the flower. Corollas large, white. When the flowering is paſt, a branch grows out in the centre of the peduncles.

Found in the mountain woods of Teneriffe by Francis Maſſon[f]. Introduced in 1779. It flowers in april and may[g].]

11. This has herbaceous ſtalks. The flowers are produced either ſingle, or two, three or more together, at the ends of the branches.

[It is a hoary ſhining plant; the branches towards the root become ſhrubby, but above they are herbaceous. Bractes two or three, growing to the baſe of the calyx. The ſegments of the calyx are longer than in the other ſpecies. Legumes hirſute[h].

Scopoli obſerves, that the ſtems are ſlender and branched, the flowers ſolitary, the calyx villoſe, the petals yellow, the ſtandard villoſe, the wings ſmooth, and the germ very hairy.

Native of the South of France and Iſtria. Cultivated in 1739, by Mr. Miller[i].

12. This is ſuffruticoſe. Stems the thickneſs of a gooſe quill, naked, ſmooth, browniſh, pliant, proſtrate; from theſe ſpring ſlender, ſoft, aſcending, branched twigs, at firſt ſlightly pubeſcent, but afterwards ſmooth. Leaves ſcattered, alternate, petioled; leaflets ſeſſile, ovate, ſharpiſh, dark green, quite entire. Flowers axillary, ſolitary, erect on a ſhort pedicel. Calyx tinged with purple; upper lip ſhorter, two-toothed; lower a little longer, ovate, acute, entire. Corolla large, bright red: ſtandard obcordate, broad, villoſe-ciliate on the ſides at bottom; wings oblong-oval, entire, converging; keel blunt, both that and the wings villoſe-ciliate at the baſe. Filaments all connate. Anthers orange-coloured. Legume much narrower at the baſe, ſubpeduncled, linear, compreſſed, ſickle-ſhaped, black when ripe, and commonly ſmooth.

Firſt found by Profeſſor Jacquin in Carniola, in 1761; flowering in april and may[k].

13. Leaves petioled; leaflets equal, lanceolate-elliptic, whitiſh about the edge, ſmall, acute, ſcarce perceptibly hairy underneath. Stipules none. Peduncles ſhorter than the flowers. Calyx oblong,

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[q] Linn. ſyſt.
[r] Sloane and Jacqu. obſ.
[s] Hort. kew.
[t] Ray.
[u] Linn. Crantz, Krock.
[x] Linn. ſyſt.
[y] Krock. and Scop.
[z] Hort. kew.
[a] Linn. ſpec.
[b] Krocker.

[c] Hort. kew.
[d] Jacquin.
[e] Hort. kew.
[f] Linn. ſuppl.
[g] Hort. kew.
[h] Linn. ſpec. and ſyſt.
[i] Hort. kew.
[k] Jacquin.

ſomewhat bellying, trifid. Corolla yellow, rather large.

Native of Auſtria[l].]

14. This riſes with a woody ſtalk ſix or ſeven feet high, ſending out many angular lateral branches. The flowers are produced in ſhort bunches from the ſides of the branches; they are ſmall, yellow, and appear in july and auguſt, but are not ſucceeded by ſeeds in England. It grows naturally in the iſlands of the Archipelago.

[15. This is an erect ſhrub, branching very much, three feet high, with a trunk the thickneſs of a finger, round and upright. Leaves quite entire, ſubpetioled, pale beneath, ſomewhat villoſe on both ſides, ſcarcely half an inch in length. Flowers few in terminating racemes, on ſhort pedicels, ſmelling ſweet. Legumes hirſute. Seed few[m].

Found in the iſland of Madeira by Maſſon. Introduced here in 1777[n].

16. Found in the Canary iſlands by Maſſon. Introduced in 1779. It flowers in july and auguſt[o].

17. Leaves ternate, with ovate-oblong leaflets, (Linneus ſays, lanceolate, never unfolding,) on very ſhort petioles. Racemes ſimple. Flowers peduncled, ſolitary, ſupported by one or two ſubulate bractes. Before the corolla opens the whole is tawny, but when open, the ſtandard about the middle only is of that colour; the reſt is then yellow: the calyx is alſo tawny. Linneus obſerves, that the ſtamens have large and ſmall anthers alternate.

Native of the South of France, Spain, and Madeira. Cultivated in 1763, by Mr. James Gordon. It flowers in july and auguſt[p].

18. Cultivated in 1760, by Mr. James Gordon. It flowers in may and june[q].]

PROPAGATION AND CULTURE.

1. The Laburnum is eaſily propagated by ſeeds, which the trees produce in great plenty. If theſe are ſown upon a common bed in march, the plants will appear by the middle or end of april, and will require no other care but to be kept clean from weeds during the following ſummer; and if the plants are too cloſe together, they may be tranſplanted the autumn following, either into a nurſery, where they may grow a year or two to get ſtrength, or into the places where they are deſigned to remain: where people would cultivate them for their wood, it will be the beſt way to ſow the ſeeds upon the ſpot where they are intended to grow, becauſe theſe trees ſend out long, thick, fleſhy roots to a great diſtance, which will penetrate gravel or rocks; and if theſe roots are cut or broken, it greatly retards their growth; therefore when they are not ſown upon the intended ſpot, they ſhould be tranſplanted thither young, otherwiſe they will not grow to near the ſize; though where they are only deſigned for ornament, the removing the plants twice will ſtop their growth, and cauſe them to be more productive of flowers; but all trees intended for timber, are much better ſown on the ground where they are deſigned to ſtand, than if they are tranſplanted.

If the ſeeds of theſe trees are permitted to ſcatter in winter, the plants will riſe in great plenty the following ſpring, ſo that a few trees will ſoon ſupply any perſon with a ſufficient number of the plants.

There is a variety with variegated leaves, which can only be continued by cuttings or layers: the cuttings ſhould be planted in autumn, when the leaves begin to fall; and the plants muſt have a poor ſoil, for in good ground they are apt to become plain.

The Laburnum will thrive upon many different ſoils, and in ſuch ſituations as few other trees will make any progreſs. [It will grow in a poor hungry ſoil, but where there is any depth it will make great progreſs.

Mr. Boutcher recommends the ſeedling plants to be removed to the nurſery in february or march, ſhortening their roots, which are not injured by cutting them freely when young; and planting them two feet and a half diſtant from row to row, and a foot aſunder in the rows, there to remain two ſeaſons. Hence they may be removed either in october or february, ſtill reducing the downright roots, and ſmoothing the extremities of the ſpreading ones; pruning off all ill-placed ſide branches, but leaving ſome of the ſmalleſt at proper diſtances. The rows may now be five feet apart; the plants two feet aſunder; and here they may remain three or four years.

Theſe directions are more adapted to raiſing trees for ornamental plantations than for uſe.

If they are deſigned for poles, they ſhould be kept to ſmaller diſtances. The autumn after they are ſowed, they may be pricked out three or four inches apart, and the following ſpring to the diſtance of nine inches or a foot, there to remain three or four years, according to their growth, when they may be removed, being fourteen or ſixteen feet high, to the places where they are deſigned to remain, only ſhortening the lateral roots, and juſt topping the tap root. Thus they will run up with few lateral branches and ſmall heads, to the height of from twenty to forty feet.]

2, 3, 7, 9, 11, 12, 13, 17. Theſe may be propagated by ſeeds, which ſhould be ſown upon a bed of light earth in march, covering them about one third of an inch with fine ſcreened mould; in the beginning of may the plants will appear, when they muſt be carefully weeded, and during the following ſummer they muſt conſtantly be kept clean, which is all the culture they require till autumn, when it will be very proper to arch the bed over with hoops, that in froſty weather the plants may be covered with mats, to prevent their tender ſhoots from being killed; for as theſe young plants are apt to continue growing later in the autumn than thoſe which are become woody, they are much more ſuſceptible of cold; therefore where there is not ſome care taken to cover them, if the winter ſhould prove ſevere, many of them may be entirely deſtroyed, and the others killed to the ground. The ſpring following, after the danger of hard froſt is over, the plants ſhould be carefully taken up, and planted out at the diſtance of one foot, row from row, and ſix inches aſunder in the rows; this ſhould be in a ſheltered ſituation, and as theſe plants do not ſhoot till late in the ſpring, they need not be tranſplanted before the end of march, or the beginning of april; and if the ſeaſon ſhould then prove warm and dry, it will be proper to give the plants ſome water to ſettle the earth to their roots: and if the drought continue, and the waterings are three times repeated at a week's interval from each, it will be of ſervice to the plants. After they have taken new root, they will require no farther care, but to keep them conſtantly clean from weeds; in this nurſery the plants may remain two years, in which time they will have acquired ſtrength enough to be tranſplanted where they are to remain.

4. This being very hardy, will thrive in any ſituation, and almoſt on any ſoil that is not too wet. It is propagated by ſeeds, which may be ſown upon a common bed of light earth in the ſpring; in autumn the plants may be removed into a nurſery in rows, one foot apart, and at ſix inches diſtance in the rows, where they may remain two years to acquire ſtrength, and ſhould then be removed to the places where they are deſigned to grow.

5. This plant grows only in hot countries, and cannot be preſerved in England, but in the barkſtove. It riſes eaſily from ſeeds in a hot-bed, and will grow three or four feet high the firſt year, provided it have a proper heat; and the ſecond year the plants will produce flowers and ſeeds. They muſt be treated in the ſame manner as other tender plants from the ſame countries; ſhould have little water in winter; and in ſummer ſhould have a

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[l] Linn. ſuppl.
[m] Jacquin.
[n] Hort. kew.
[o] Hort. kew.
[p] Ibid.
[q] Ibid.

large ſhare of air admitted to them in warm weather.

6. The Evergreen Cytiſus may be propagated in the ſame manner as has been directed for the ſecond ſort; but as it is ſometimes killed in ſevere froſts, it ſhould be planted only on a dry ſoil, and in a warm ſituation: it is alſo very difficult to remove, when grown to any ſize, becauſe it ſhoots long roots deep into the ground, and when theſe are broken or cut, the plant ſeldom ſurvives it.

8. This alſo is propagated by ſeeds, which ſhould be ſown early in april, on a border of ſtrong ground expoſed to the eaſt; for if they are ſown where they have full ſun, the plants will not thrive. This requires a cold ſituation and a ſtrong ſoil.

14. This is propagated by cuttings, which if planted on a bed of light earth the beginning of july, and cloſely covered with a bell or hand-glaſs ſhaded from the ſun in the middle of the day, will put out roots by the middle or end of ſeptember; when they ſhould be carefully taken up, planting each in a ſeparate ſmall pot, carefully watering and ſhading them until they have taken new root, after which they may be expoſed in a ſheltered ſituation until the end of october, when they muſt be removed into ſhelter, for they are too tender to live in the open air in England.

[10, 15, 16, 17. Will not bear the open air of our climate, but require the protection of a green-houſe or dry ſtove.

CYTISUS. See *Anthyllis*, *Aſpalathus*, *Crotalaria*, *Ebenus*, *Geniſta*, *Hedyſarum*, *Indigofera*, *Liparia*, *Medicago*, *Ononis*, *Robinia*, *Spartium*.

D.

DABOECIA. See *Andromeda*.

DACTYLIS. (Δακτυλις, *digitalis*, *having ſpikes long and ſlender, like the finger.*

Lin. gen. n. 86. *Reich.* 92. *Schreb.* 117. *Juſſ.* 31.
Claſſ. 3. 2. Triandria Digynia.
Nat. order of *Graſſes*.

GENERIC CHARACTER.

CAL. *Glume* many-flowered, two-valved, collecting the floſcules into an ovate-oblong ſpicule: *valves* concave, keeled, on one ſide convex broader half-ovate, on the other narrow; the inner largeſt.

COR. Two-valved: the *lower valve* larger concave acute, mucronate or awned; the *inner* lanceolate, acutely bifid, ſcarcely ſhorter than the lower.—*Nectaries* two lanceolate, acuminate, gibbous at the baſe.

STAM. *Filaments* three, capillary, longer than the corolla. *Anthers* oblong, two-forked.

PIST. *Germ* ovate. *Styles* two, ſpreading. *Stigmas* feathered.

PER. none. Corolla including the ſeed, and dropping it.

SEED ſingle, oblong, grooved on one ſide.

ESSENTIAL CHARACTER.

Cal. two-valved, compreſſed; one valve larger, keeled—(valves keeled, the inner largeſt. *Sch.*)

SPECIES.

1. Dactylis cynoſuroides. *American Cock's-foot Graſs.*
Lin. ſpec. 104. *Reich.* 196. *faſc.* 1. *t.* 9. *Gron. virg.* 134, 135.
Spikes ſcattered numerous, flowers cloſely imbricate and pointing one way; culm erect.

2. Dactylis glomerata. *Rough Cock's-foot Graſs.*
Lin. ſpec. 105. *ſyſt.* 116. *Reich.* 197. *fl. ſuec. n.* 87. *Hudſ. angl.* 43. *With.* 94. *Relh. cantabr. n.* 74. *Pollich pal. n.* 98. *Neck. gallob.* 58. *Leers herb. n.* 57. *t.* 3. *f.* 3. *Krock. ſileſ. n.* 148. *Schreb. gram.* 72. *t.* 8. *f.* 2. *Fl. dan. t.* 743. *Barr. ic.* 26. *f.* 1, 2. *Fl. ruſt. t.* 14. *Muſ. ruſt.* 5. *t.* 5.
Bromus. *Hall. helv.* 1512.
B. glomeratus. *Scop. carn. n.* 111.
Gramen ſpicatum. fol. aſpero. *Bauh. pin.* 3. *prodr.* 9. *f.* 1. *theat.* 45. 1. *Scheuch. gram.* 299. *t.* 6. *f.* 15.
G. aſperum. *Bauh. hiſt.* 2. 467. 1. *Raii hiſt.* 1287. *ſyn.* 400.
G. panic. toroſa pratenſe aſperum. *Mor. hiſt. ſ.* 8. *t.* 6. *f.* 38.
Panicle turned to one ſide, glomerate.

3. Dactylis ciliaris.
Lin. ſyſt. 116. *Reich.* 197. *mant.* 185.
Spike in a head turned to one ſide, calyxes three-flowered, ſtem creeping.

4. Dactylis lagopoides.
Lin. ſyſt. 116. *Reich.* 197. *mant.* 33. 557. *Burm. ind. t.* 10. *f.* 1.
Spikes roundiſh pubeſcent, culm proſtrate branched.

5. Dactylis capitata.
Lin. ſyſt. 116. *ſuppl.* 110.
Spikes in a head even, culm proſtrate branched.

6. Dactylis ſtricta. *Sea Cock's-foot Graſs.*
Ait. hort. kew. 104.
D. cynoſuroides. *Loeſl. itin.* 115. *Hudſ. angl.* 43. *With.* 93.
Spartum eſſexianum, ſpica gemina clauſa. *Petiv. conc. gram.* 35. *Raii hiſt* 3. *app.* 248. *ſyn.* 393.
Spikes terminating uſually twin, flowers remote preſſed cloſe, culms and leaves ſtrict.

7. Dactylis patens. *Spreading Cock's-foot Graſs.*
Ait. hort. kew. 104.
Spikes ſcattered, turned one way, few; flowers cloſely imbricate; culm decumbent, leaves ſpreading very much.

DESCRIPTIONS, &c.

1. Culm two feet high, reedy. Leaves on the culm ſix, broad, longer than the culm, very gloſſy, ſcabrous about the edge, bent in, more glaucous on their inner ſurface. Spikes ſix or more, diverging, chaffy: floſcules ſcabrous behind: calyxes one-flowered, ſcabrous on the keel, mucronate, longer than the floſcule ſeſſile, turned one way: piſtils villoſe, very long.—Native of Virginia and Canada. Perennial [a].

2. *Root* perennial. *Culms* from two to three feet high, ancipital, naked and rugged at top, having four or five ſmooth, purpliſh knots or joints, and three leaves, with ancipital villoſe or rugged ſheaths, ſharply keeled. *Leaves* ſix inches or more in length, and three or four lines broad, ſpreading, ſomewhat glaucous, very rugged on both ſides with extremely minute ſpinules. Ligule white, oblong, obtuſe, cloven. *Panicle* cloſe, often coloured: peduncles ſolitary, alternate, angular, ſtiff, rugged, with a callous tumour at the baſe, twice and thrice cloven; the loweſt (ſometimes two) more remote, longer, ſpreading, at length becoming horizontal and even ſomewhat reflex. Spikelets all turned the ſame way, ſubſeſſile, twin-glomerate, oblong, very obtuſe, having two, three, and ſometimes four flowers, preſſed cloſe, and during floreſcence diverging. Calyx pubeſcent, frequently ciliate, rugged, having a ſhort awn; inner valve twice as large as the outer, awned, equal to the florets if there be only two, but ſhorter if there be more. Florets rugged, edged with white, obtuſe, with a ſhort awn at the end, in the laſt floret this is very ſhort, and ſometimes there is none: inner valve ſcarcely ſhorter than the outer, with the end ſharply cloven: nectaries two lanceolate-acuminate: filaments twice the length of the corolla; anthers yellow or purple, and afterwards white. Seed dropping [b].

There is ſome difference of opinion reſpecting the genus of this graſs. Scopoli at firſt made it a *Poa*, but afterwards, following Haller, he ranged it among the *Bromi*. He ſays it is not a *Poa*, becauſe it has one awned petal; not a *Cynoſurus*, becauſe the calyx is many-flowered, and it has no bractes; not a *Dactylis*, becauſe the calyx is very acute.

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[a] Linn. ſpec.

[b] Leers.

Pollich mentions a viviparous variety; and Mr. Woodward has obſerved it to be ſo in rainy ſeaſons. This is uſual in other graſſes on lofty ſituations, where they are frequently drenched by the clouds.

No. graſs is more common than this; from its flouriſhing particularly under the ſhade of trees, whence it has been called *Orchard-graſs*. It flowers from june to auguſt.

It is a rough coarſe graſs, and hence has the names of *Rough-graſs* and *Hard-graſs*, but it is extremely hardy and productive; Mr. Curtis adds that it is rather early. Its flouriſhing under the drip of trees may be a recommendation, but the head is ſo large that in heavy rains it is apt to be laid. It ſhould always be cut whilſt young and tender either for hay or fodder.

3. Root filiform, creeping with long white fibres. Culms a palm high, aſcending, very ſimple, even, with one joint. Root-leaves involute, filiform, even, the length of the culm; ſtem-leaf one, even, the length of the head; ſheath ſomewhat bellying. Head terminating, ovate, with many ſeſſile flowers. Glume of the calyx three-flowered, compreſſed, mucronate, the length of the corolla, having ſcattered hairs on the back under the tip. Outer glume of the corolla ovate, ſtriated, bearded below with white hairs.

Native of the Cape of Good Hope[c].

4. Root perennial, fibrous. Culms a palm high, ſeveral, covered on every ſide with the ſheaths of leaves. Leaves ſpreading, ſubulate like ſpines, contracted at the baſe, narrower than their ſheaths. Spike glomerate, ovate, pubeſcent. Flowers ſeſſile, many together, pointing nearly one way: calyx eight-flowered, but often only four-flowered, nearly equal; valves acute, ſtiff, ſtriated: outer valve of the corolla ſtiff, ſtriated, acute; inner involute, coloured.

Native of the fields of Malabar[d].

5. Root perennial. Leaves even, three on the culm, which is of the thickneſs of a fowl's quill, a foot and half in height, and even. Panicle in form of a ſpike, as it were conglomerate, narrower at top, a palm in length, the colour of chaff. Flowers always twin, depreſſed. Calyx nearly the length of the flower, containing about five flowers, the outer valve much attenuated: corolla oblong, awnleſs.

Found at the Cape by Sparrmann[e].

6. The calyx contains one floret only, which has but one ſtyle, which is longer than the ſtamens. The ſtructure of the piſtil marks an affinity with *Nardus*, which is confirmed by its habit[f].

Marſhes in Eſſex, and other parts of the ſea-coaſt, very common; alſo in Portugal.

It is perennial, and flowers from july to ſeptember.—This was confounded with the firſt ſpecies, but is certainly diſtinct from it.

7. Native of North America. Introduced 1781, by Mr. William Curtis. It is perennial, and flowers in july and auguſt[g].

PROPAGATION AND CULTURE.

See Grass.]

Dactylis. See *Phalaris* and *Phoenix*.

Dactylon. See *Panicum*.

Daffodil. See *Narciſſus*.

——— Sea. See *Pancratium*.

Dahlbergia. See *Dalbergia*.

[DAIS. (Δαις, *epulum*, *pugna*, *tæda*.)

Lin. gen. n. 540. *Reich.* 588. *Schreb.* 740. *Gærtn. t.* 39. *Juſſ.* 77. Authore Dav. Royeno.

Claſſ. 10. 1. Decandria Monogynia.

Nat. order of *Veprecula*.—Thymelææ *Juſſ.*

GENERIC CHARACTER.

Cal. *Involucre* four-leaved, ſeſſile - many - flowered: ~~*leaflets*~~ ſcarioſe, erect. *Perianth* none.

Cor. one-petalled, funnel-form, longer than the involucre. *Tube* filiform, rude. *Border* five-cleft: *diviſions* lanceolate, obtuſe.

Stam. *Filaments* ten, inſerted into the throat, ſhorter than the border: the alternate ones ſhorter. *Anthers* ſimple.

Pist. *Germ* ſomewhat oblong, growing on the baſe of the corolla. *Style* filiform, length of the tube. *Stigma* globoſe, aſcending.

Per. *Berry* ovate, one-celled.

Seed ſingle, ovate.

Obs. *In* D. octandra *a fifth part of the number is wanting.*

ESSENTIAL CHARACTER.

Invol. four-leaved. *Cor.* four or five-cleft. *Berry* one-ſeeded. (*Nut* ſuperior, one-celled, *G.*)

SPECIES.

1. Dais cotinifolia: *Cotinus-leaved Dais.*
Lin. ſpec. 556. *Reich.* 2. 284. *Jacqu. ic. collect.* 1. 146. *Gærtn. fruct.* 187. *Curtis magaz.* 147.
Flowers five-cleft ten-ſtamened.

2. Dais octandra.
Lin. ſyſt. 403. *Reich.* 2. 284. *mant.* 69. *Burm. ind. t.* 33. *f.* 2.
Flowers four-cleft eight-ſtamened.

3. Dais diſperma.
Forſt. flor. auſtr. n. 192.
Flowers eight and ten-ſtamened; leaves ovate-lanceolate, acuminate, nerveleſs.

DESCRIPTIONS, &c.

1. Leaves oppoſite, obovate, quite entire, ſmooth, petioled. Flowers in a bunch aggregate, terminating, pubeſcent; with a gemmaceous, four-valved involucre. It is allied to Paſſerina[h]. The fruit is a ſmall nut of an ovate-acuminate form, with a thin bark over it, and cloathed with the permanent corolla: the epidermis is membranaceous, pale, diaphanous, thickening on each ſide into a prominent, whitiſh edge, eaſily ſeparating: ſhell bony, thin, brittle, livid-white on the outſide, black within; one-celled and valveleſs[i].

Native of the Cape of Good Hope.—Introduced 1776, by Mr. James Gordon[k]; but has long been in the Dutch gardens.

2. Leaves oppoſite, elliptic-oblong, acuminate, petioled, even. Involucre one or two, terminating, peduncled, ſhorter than the flowers, which are ſmooth. Stamens placed upon the tube, and longer than the corolla.—Native of India[l].

3. Native of Tongatabu[m].

PROPAGATION AND CULTURE.

1. This ornamental green-houſe ſhrub of the deciduous kind, not having yet produced any perfect ſeeds with us, as it does in Holland, and no other way having been yet diſcovered of increaſing it freely, it keeps up a very high price among the nurſery-men[n].]

Daisy. See *Bellis*.

[——, Great or Ox-eye. See *Chryſanthemum*.

——— Blue. See *Globularia*.

DALBERGIA.

Lin. gen. Schreb. n. 1158. *Suppl.* 52. *Juſſ.* 362. Ecaſtaphyllum. *Brown. jam.* 299. *t.* 32. *f.* 1. *Berg. act. holm.* 1769. *t.* 3.

Claſſ. 17. 4. Diadelphia Decandria.

Nat. order of *Papilionaceæ* or *Leguminoſæ*.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, bell-ſhaped, five-toothed: *teeth* bluntiſh.

Cor. papilionaceous. *Standard* large, aſcending, cordate-ovate, emarginate-retuſe, with a linear claw. *Wings* oblong, ſtraight, obtuſe, with a reverſed tooth above. *Keel* ſcarcely ſhorter than the wings, two-parted at the baſe, ſtraight, obtuſe.

Stam. *Filaments* ten, united in two equal lateral bodies, free at top, aſcending. *Anthers* roundiſh.

Pist. *Germ* oblong-compreſſed, pedicelled. *Style* ſubulate, aſcending or reflex. *Stigma* ſimple.

Per. *Legume* oblong, compreſſed-flat, pedicelled, not gaping, one-celled?

Seed ſingle or few, remote, kidney-form, compreſſed.

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[c] Linn. mant.
[d] Ibid.
[e] Linn. ſuppl.
[f] Stokes in With.
[g] Hort. kew.
[h] Linn. ſpec.
[i] Gærtner.
[k] Hort. kew.
[l] Linn. mant.
[m] Forſter.
[n] Curtis.

Obs. *The eſſence of the genus conſiſts in having the filaments united in two equal vertical bodies, ſeparated at top and bottom.*

ESSENTIAL CHARACTER.

Filaments two four-cleft at top. *Fruit* pedicelled, not opening, leguminoſe, membranaceous-compreſſed.

SPECIES.

1. Dalbergia Lanceolaria.
Lin. ſyſt. 641. *ſuppl.* 316.
Noel-valli. *Rheede malab.* 6. 39. *t.* 22.
Leaves pinnate; leaflets elliptic hairy underneath; fruits lanceolate.

2. Dalbergia Monetaria.
Lin. ſyſt. 641. *ſuppl.* 317.
Leaves ternate, leaflets ſmooth, ovate; fruits oval veinleſs.

DESCRIPTIONS, &c.

1. This is a tree, with wand-like pendulous hairy branchlets. Leaves alternate, unequally pinnate; leaflets elliptic, alternate, remote, from ten to ſixteen, quite entire, waved, ſmooth underneath, hirſute above, veinleſs, ſmall: petioles hairy. Racemes axillary, hairy, branched. Flowers ferruginous. Calyx rough with hairs; the teeth almoſt equal. Corolla larger than in the ſecond ſort: ſtandard more dilated. Filaments two, lateral, four-cleft at the end, with the rudiment of a fifth on each ſide, but without any looſe or ſingle filament, ſuch as the other ſpecies has. Style bent upwards. The fruit is a membrane, exactly the figure of a little lance, attenuated at the baſe, not opening, not diviſible into two ſkins by a knife, the length of a finger or leſs. In the middle of this membrane a ſingle compreſſed oval ſeed is immerſed; if there are two ſeeds, they are placed at a diſtance from each other longitudinally.

Native of Malabar and Ceylon, and obſerved there by Koenig.

2. This is a ſhrub. Leaflets petioled, quite entire, veined, acuminate, alternate. Peduncles ſeveral, axillary, ſpiked, directed one way, toothed at bottom where the flowers have fallen. Flowers extremely minute, white. Calyx blunt, with five ſmall equal teeth. Filaments two, lateral, equal, four-cleft at top, with a third which is ſingle below the germ; hence there are nine filaments: anthers nine, globular, twin. Style filiform, erect: ſtigma headed. The fruit is of an oval form, like a piece of coin, compreſſed, cartilaginous within, one-celled, deciduous, not opening. Seed ſingle, compreſſed, kidney-form. The root when cut yields a purple juice. The wood is red. It yields a reſin that reſembles Dragon's-blood.—Native of Surinam, in wet places[a].

Dalea. See *Eupatorium, Lippia,* and *Pſoralea.*]

DALECHAMPIA. (*Given by Plumier, in honour of Jacobus Dalechampius, a phyſician of Lyons; a commentator on Dioſcorides and Pliny; author of Hiſtoria Plantarum,* 1587.)
Lin. gen. n. 1081. *Reich.* 1179. *Schreb.* 1460. *Plum.* 38. *Jacqu. amer.* 252. *Juſſ.* 392.
Claſſ. 21. 9. Monoecia Monadelphia.
Nat. order of *Tricoccæ.—Euphorbiæ.* Juſſ.

GENERIC CHARACTER.

Involucre common exterior ſmaller: *leaflets* four, lanceolate, ſpreading.
Interior very large: *leaflets* two, heart-ſhaped, three-cleft, converging.
* For the *male* flowers a footſtalked *umbel,* ſimple, ten-flowered, ſhorter than the interior involucre.
Cal. *Involucel* two-leaved, erect, blunt: *leaflets* ſomewhat three-lobed.
Scales numerous, obovate, preſſed in an imbricate manner to the exterior ſide of the involucel, and of the ſame length with it.
Perianth proper, five-leaved, footſtalked; leaflets ovate, acute; deciduous.
Cor. none.
Stam. *Filaments* very many, growing together into a column longer than the calyx. *Anthers* roundiſh.
* In the *females* three florets within the ſame common *involucre,* approximate to the inferior ſide.
Cal. *Involucel* three-leaved; *leaflets* emarginate, ſmall.
Perianth proper, inferior: *leaflets* eleven, linear, toothed, acute, converging, permanent.
Cor. none.
Pist. *Germ* roundiſh, ſhorter than the perianth. *Style* filiform, aſcending, length of the males. *Stigma* ſomewhat headed, perforated.
Per. *Capſule* roundiſh, three-berried, three-celled; cells two-valved.
Seed ſolitary, globoſe.

ESSENTIAL CHARACTER.

Outer common *involucre* with four leaflets; inner with two trifid leaves.
Male. *Umbellule* ten-flowered: *involucel* two-leaved; with numerous chaffs. *Proper perianth* five-leaved. *Cor.* none. *Filaments* very many, connate.
Fem. *Floſcules* three. *Involucel* three-leaved. *Proper perianth* with eleven leaflets. *Cor.* none. *Style* filiform. *Capſ.* tricoccous.

SPECIES.

1. Dalechampia colorata. *Coloured Dalechampia.*
Lin. ſyſt. 862. *ſuppl.* 421.
Leaves quite entire.

2. Dalechampia ſcandens. *Climbing Delechampia.*
Lin. ſpec. 1423. *ſyſt.* 862. *Reich.* 4. 181. *ſuppl.* 421. *mant.* 496. *hort. cliff.* 485. *Jacqu. amer.* 252. *t.* 160. *pict.* 123. *t.* 239. *Plum. gen.* 17. *amer.* 89. *t.* 101. (Lupulus).
Leaves trifid ſerrate.

DESCRIPTIONS, &c.

[1. This reſembles the ſecond ſpecies, and the leaves are three-lobed, but leſs deeply cut and not ſerrate. The involucre is more oblong, reſembling a petal, or coloured, not cordate at the baſe or green.

Found in New Granada, by Mutis[b].

2. Stem branched, hairy, the hairs ſtanding out. Leaves alternate, petioled, remote, cordate-three-parted, much veined, wrinkled, ſerrate, pubeſcent, lobes lanceolate: petioles round, ſlightly channelled, the length of the leaf: the genuine ſtipules ſemicordate, reflex, ſhort; beſides theſe there are two ſpurious ſtipules from the ſinus at the baſe of the leaf, which are ſubulate, erect and ſmall. Peduncle axillary, ſolitary, very ſhort[c].

Native of the Weſt Indies. Introduced 1785 by Mr. Alexander Anderſon. It flowers in june and july[d].

Mr. Miller has a plant under the name of Dalechampia ſcandens,] a native of Jamaica, whence Dr. Houſtoun ſent him the ſeeds, which ſucceeded, flowered, and perfected ſeeds in the Chelſea garden. It ſeems to be different from the ſpecies here ſet down; having a ſmooth fruit, with a hiſpid calyx (or involucre). Mr. Miller deſcribes it as having a root compoſed of many fibres, and extending to a great diſtance; from which ariſe ſeveral weak twining ſtalks, that faſten themſelves to neighbouring plants, and mount up to a conſiderable height. At each joint is one ſmooth three-lobed leaf, reſembling that of the Hop; the two ſide lobes are oblique to the midrib, but the middle one is equal. The flowers are produced from the ſide of the ſtalks, three or four growing upon each peduncle: they are of an herbaceous colour and ſmall; with a double involucre, made up of two rows of leaves, which are narrow, and armed with ſmall briſtly ſtinging hairs.

PROPAGATION AND CULTURE.

Theſe plants are propagated by ſeeds ſown early in the ſpring on a hot-bed, tranſplanted into ſmall pots when three inches high, plunged into a bark-bed, and frequently watered. They ſhould be afterward removed into larger pots, and placed at the back of the bark-ſtove, where they may have an eſpalier or trellis to run up. They ſeldom continue more than two years.]

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[a] Linn. ſuppl.

[b] Linn. ſuppl.

[c] Linn.

[d] Hort. kew.

[Dalibarda. See *Rubus*.

DAMASONIUM.

Lin. gen. Schreb. n. 624.

Claſſ. 6. 5. Hexandria Hexagynia.

GENERIC CHARACTER.

Cal. *Spathe* one-leafed, oblong, five-winged: wings waved: two running down into the petiole: *mouth* five-toothed: *teeth* ſharp, membranaceous at the edge.

Perianth one-leafed, three-parted, ſuperior: *leaflets* lanceolate, blunt, ſurrounded by a membranaceous edge, ſpreading.

Cor. *Petals* three, roundiſh, waved, ſpreading, longer than the perianth.

Stam. *Filaments* ſix, very ſhort. *Anthers* linear, erect, blunt, emarginate at the baſe, ſhorter than the corolla.

Pist. *Germ* oblong, inferior. *Styles* ſix, linear, emarginate, erect, longer than the ſtamens. *Stigmas* villoſe hairs on the ſide of the ſtyles?

Per. *Berry* oblong, ten-celled-crowned by the calyx?

Seeds very many, oblong, ſmall,

Obs. *The character wants to be ſupplied and confirmed or corrected from the living plant.*

ESSENTIAL CHARACTER.

Spathe one-leafed. *Perianth* one-leafed, three-parted. *Petals* three. *Berry* ten-celled, inferior.

SPECIES.

1. Damaſonium Aliſmoides.

Stratiotes Aliſmoides. *Lin. ſyſt.* 506. *Reich.* 2. 623. *fl. zeyl. n.* 223. *Forſk. ægypt.* 4. 101.

Ottel-ambel. *Rheed. mal.* 11. 95. *t.* 46.

DESCRIPTION, *&c.*

Leaves heart-ſhaped, nerved, floating, unarmed. Scape naked, quadrangular, one-flowered. There are only ſix ſtamens in the flower, with ſix bifid ſtyles.—Native of the Eaſt Indies; Malabar, Ceylon, *&c.*[c]

Damasonium. See *Aliſma* and *Serapias*.

Dame's Violet. See *Heſperis*.]

Dandelion. See *Leontodon*.

[Danewort. See *Sambucus*.

Dantia. See *Iſnardia*.]

DAPHNE. (Δαφνη *of Theophraſtus, and Dioſcorides; one of the poetical names, from the nymph Daphne, whoſe fabled metamorphoſis is well known.)*

Lin. gen. n. 485. *Reich.* 526. *Schreb.* 664. *Juſſ.* 77. Thymelæa. *Tourn.* 366. *Gærtn. t.* 39.

Claſſ. 8. 1. Octandria Mongynia.

Nat. order of *Veprecul*æ.—Thymelææ *Juſſ.*

GENERIC CHARACTER.

Cal. none.

Cor. one-petalled, funnel-form, withering, including the ſtamens.

Tube cylindric, imperforate, longer than the border. *Border* four-cleft; *diviſions* ovate, acute, flat, ſpreading.

Stam. *Filaments* eight, ſhort, inſerted into the tube: the *alternate* ones lower. *Anthers* roundiſh, erect, two-celled.

Pist. *Germ* ovate. *Style* very ſhort. *Stigma* headed, depreſſed-flat.

Per. *Berry* roundiſh, one-celled. (Drupe berried, ſuperior. G.)

Seed ſingle, roundiſh, fleſhy.

Obs. *Some of the ſpecies are dioecous.*

ESSENTIAL CHARACTER.

Cal. none. *Cor.* four-cleft, corollaceous, withering, including the ſtamens. *Berry* one-ſeeded.

SPECIES.

* *Flowers lateral.*

1. Daphne Mezereum. *Mezereon.*

Lin. ſpec. 509. *Reich.* 2. 190. *mat. med.* 103. *fl. lapp.* 140. *ſuec.* 338. *hort. cliff.* 147. *Hudſ. angl.* 167. *With.* 402. *Pollich pal. n.* 379. *Krock. ſileſ. n.* 600. *Pallas roſſ.* 54. *Villars dauph.* 3. 515. *Fl. dan. t.* 268. *Jungh. offic. cent.* 1. *f.* 1. *Woodv. med. bot.* 68. *t.* 23. *Blackw. t.* 582. *Plenck, ic. t.* 302.

Thymelæa. *Hall. helv. n.* 1024.—Mezereum. *Scop. carn. n.* 462. *Gærtn. fruct.* 188. *Allion. pedem. n.* 482.

Laureola fol. deciduo. *Bauh. hiſt.* 1. 566.—fl. purpureo, officinis L. femina. *Bauh. pin.* 462.

Daphnoides. *Cam. epit.* 937.

Chamelæa germanica. *Dod. purg.* 130. *pempt.* 364. 2. *Ger.* 1216. *emac.* 1402. 2. *Park. theat.* 202. 3. *Raii hiſt.* 1587.

β. D. Mezereum album. *White-flowered Mezereum. Ait. hort. kew.* 2. 25.

Thymelæa Lauri fol. deciduo, fl. albido, fructu flaveſcente. *Duham. arb.* 2. 325. *n.* 4.

Flowers ſeſſile in threes on the ſtem; leaves lanceolate deciduous.

2. Daphne Thymelæa.

Lin. ſpec. 509. *Reich.* 2. 190. *Vahl ſymb.* 1. 28. *Ger. prov. t.* 17. *f.* 2. *Pluk. alm. t.* 229. *f.* 2. (Thymelæa).

Thymelæa Sanamunda. *Allion. pedem. n.* 485.

Thymelæ fol. polygalæ glabris. *Bauh. pin.* 463. *Raii hiſt.* 1588.

Sanamunda glabra. *Bauh. hiſt.* 1. 593. *Bauh. prodr.* 160.

Flowers ſeſſile axillary, leaves lanceolate, ſtems very ſimple.

[3. Daphne pubeſcens.

Lin. ſyſt. 371. *Reich.* 2. 191. *mant.* 66.

Flowers ſeſſile aggregate, leaves lanceolate-linear, ſtem pubeſcent.

4. Daphne villoſa.

Lin. ſpec. 510. *Reich.* 2. 191.

Flowers ſeſſile ſolitary, leaves lanceolate flat ciliate hairy crowded.]

5. Daphne Tartonraira. *Silvery-leaved Daphne* or *Tartonraira.*

Lin. ſpec. 510. *Reich.* 2. 191. *Vahl. ſymb.* 3. 53. *Gron. orient.* 125. *Bauh. pin.* 463. 6. (Thymelæa). *Lob. ic.* 371. (Tarton-Raire). *Bauh. hiſt.* 1. 593. *f.* 2. *Raii hiſt.* 1588. 5.

Flowers ſeſſile aggregate lateral imbricate with ſcales at the baſe, leaves obovate, nerved, ſilky.

6. Daphne alpina. *Alpine Daphne.*

Lin. ſpec. 510. *ſyſt.* 371. *Reich.* 2. 191. *Gouan illuſt.* 27. *Hall. helv. n.* 1026. (Thymelæa).

Thymelæa alpina. *Allion. pedem. n.* 483.

C. hirſuta. *Bauh. hiſt.* 1. 569, 570. *f.* 1.

β. Chamelæa ſabaudica, fol. utrinque incano, fl. albo. *Raii hiſt.* 1588.

Thymelæa incana, &c. *Pluk. alm. t.* 229. *f.* 3.

Flowers ſeſſile aggregate, leaves lanceolate obtuſiſh, tomentoſe underneath.

7. Daphne Laureola. *Spurge Laurel.*

Lin. ſpec. 510. *ſyſt.* 371. *Reich.* 2. 192. *mat. med.* 104. *hort. cliff.* 147. *upſ.* 94. *Hudſ. angl.* 167. *With.* 403. *Lightf. ſcot.* 205. *Sowerby engl. bot. t.* 119. *Jacqu. auſtr.* 2. *t.* 183. *Plenck, ic. t.* 303. *Villars dauph.* 3. 517.

Thymelæa. *Hall. helv. n.* 1025. *Duham. arb.* 1.

——— Laureola. *Scop. carn. n.* 463. *Allion. pedem. n.* 484.

Laureola. *Dod. pempt.* 365. *Ger.* 1219. 1, 2. *emac.* 1404. 1, 2. *Park. theat.* 205. 1. *Blackw. t.* 62. *Raii hiſt.* 1587. *ſyn.* 465.

L. ſempervirens, fl. luteolo. *Bauh. hiſt.* 1. 564.—fl. viridi, quibuſdam L. maſ. *Bauh. pin.* 462.

Racemes axillary, five-flowered; leaves lanceolate ſmooth.

[8. Daphne pontica.

Lin. ſpec. 511. *Reich.* 2. 193. *Pallas roſſ.* 1. 54.

Thymelæa pontica, citrei foliis. *Tourn. itin.* 2. *t.* 180.—3. 19. edit. oct.

Peduncles two-flowered, leaves lanceolate-ovate.

9. Daphne dioica.

Lin. ſyſt. 371. *ſuppl.* 223. *Gouan illuſtr.* 27. *t.* 17. *f.* 1. *Bauh. pin.* 463. 4. (Thymelæa).

Sanamunda prima. *Cluſ. hiſt.* 88.

Flowers axillary twin, leaves linear-lanceolate.

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[c] Linn. zeyl. and Forſk.

** *Flowers terminating.*

10. Daphne indica. *Chineſe Daphne.*
Lin. ſpec. 511. *Reich.* 2. 193. *Lour. cochinch.* 137. *Burm. ind.* 88. *Oſb. itin.* 216. *engl. edit.* 2. *p.* 6.
Head peduncled, leaves oppoſite oblong-ovate ſmooth.]

11. Daphne Cneorum. *Trailing Daphne.*
Lin. ſpec. 511. *ſyſt.* 371. *Reich.* 2. 193. *Pollich pal. n.* 380. *t.* 1. *f.* 4. *Gouan illuſtr.* 27. *Jacqu. auſtr.* 5. *t.* 426. *Duham. arb.* 2. *t.* 94. *Villars dauph.* 3. 518.
Thymelæa. *Hall. helv. n.* 1027. *Geſn. faſc.* 5. *t.* 3. *f.* 6.—minor. *Cord. hiſt.* 189.
T. Cneorum. *Scop. carn. n.* 464. *Allion. pedem. n.* 487.
Thymelææ affinis facie externa. *Bauh. pin.* 463. *Raii hiſt.* 1589.
Cneorum. *Matth. hiſt.* 46. *Cluſ. hiſt.* 89. *Bauh. hiſt.* 1. 520.
Flowers in bunches ſeſſile; leaves lanceolate naked mucronate.

12. Daphne Gnidium. *Flax-leaved Daphne.*
Lin. ſpec. 511. *ſyſt.* 372. *Reich.* 2. 194. *Plenck, ic. t.* 304.
Thymelæa, *Cluſ. hiſt.* 1. 87. *Cam. epit.* 974. *Park. theat.* 201. 1. *Raii hiſt.* 1588.—ramoſa. *Ger.* 1217. *f.* 2. *emac.* 1403.
T. fol. lini. *Bauh. pin.* 463.
T. Gnidium. *Allion. pedem. n.* 488.
Panicle terminating; leaves linear-lanceolate acuminate.

13. Daphne ſquarroſa.
Lin. ſpec. 511. *Reich.* 2. 194. *Burm. afr.* 134. *t.* 49. *f.* 1.
Flowers peduncled; leaves ſcattered linear ſpreading mucronate.

[14. Daphne oleoides.
Lin. ſyſt. 372. *Reich.* 2. 194. *mant.* 66. *Schreb. dec.* 13. *t.* 7.
Flowers twin ſeſſile; leaves elliptic-lanceolate ſmooth.

15. Daphne foetida.
Lin. ſyſt. 372. *ſuppl.* 223.
Smooth; flowers heaped ſeſſile; leaves oppoſite petioled ovate-oblong acute.

16. Daphne rotundifolia.
Lin. ſyſt. 372. *ſuppl.* 223.
Hirſute; flowers heaped ſeſſile; leaves oppoſite elliptic ſubpetioled obtuſe ſmooth.

17. Daphne odora. *Sweet-ſmelling Daphne.*
Lin. ſyſt. 372. *Kæmpf. ic. t.* 16. *Thunb. jap.* 159. *L'Herit. ſtirp. nov.* 2. *t.* 7. *Ait. hort. kew.* 2. 26. *Lour. cochinch.* 237.
Head ſubſeſſile many-flowered; leaves ſcattered oblong-lanceolate ſmooth.

18. Daphne pendula.
Smith ic. ined. faſc. 2. *t.* 34.
Scopolia compoſita. *Lin. ſuppl.* 409.
Heads lateral peduncled involucred nodding; leaves lanceolate-elliptic alternate ſmooth.

19. Daphne altaica.
Pallas roſſ. 1. 1. 53. *t.* 35.
Flowers in bundles terminating ſeſſile, leaves oblong-ovate ſmooth.

20. Daphne triflora.
Lour. cochinch. 236.
Flowers ſeſſile axillary heaped, calyxes three-flowered, leaves lanceolate ſcattered.

21. Daphne cannabina.
Lour. cochinch. 236.
Umbels terminating, leaves lanceolate oppoſite.

22. Daphne collina. *Neapolitan Mezereon.*
Smith ſpicil. 16. *t.* 18. *Geſn. faſc.* 6. *t.* 3. *f.* 7.
Chamelæa alpina, fol. inferne incano. *Bauh. pin.* 462. *Lob. ic.* 370.—incana & lanuginoſa. *Bauh. hiſt.* 1. 586.
Thymelæa ſaxatilis oleæ folio. *Tournef. inſt.* 594.
Flowers in bundles terminating, ſeſſile, leaves obovate obtuſe, very ſmooth on the upper ſurface, villoſe on the lower.

23. Daphne Lagetto. *Lace-bark Daphne.*
Swartz prodr. 63. *Brown. jam.* 371. *n.* 16. *t.* 31. *f.* 5. *Sloan. jam.* 2. 22. *t.* 168. *f.* 1, 2, 3. & 169. *f.* 1. *Nicols. doming.* 172. *t.* 1. *f.* 1—5.
Spikes panicled terminating, leaves ovate acute.

24. Daphne tinifolia.
Swartz. prodr. 63.
Laurus americana. *Mill. dict. n.* 10.
Racemes compound erect, flowers terminating crowded, leaves oblong.

25. Daphne occidentalis.
Swartz. prodr. 63.
Peduncles axillary, flowers terminating, in umbellets, dioecous, leaves alternate lanceolate ſmooth.

26. Daphne vermiculata.
Vahl ſymb. 1. 28. *Barrel. ic.* 231. (Sanamunda).
Flowers ſeſſile lateral ſolitary ſmooth, leaves linear-lanceolate villoſe.

27. Daphne ſericea.
Vahl ſymb. 1. 28.
Thymelæa cretica oleæ folio ſubtus villoſo. *Tourn. cor.* 41.
Flowers aggregate terminating ſeſſile, leaves lanceolate villoſe underneath; ſegments of the corolla obtuſe.

28. Daphne buxifolia.
Vahl ſymb. 1. 29.
Thymelæa orientalis buxifolia ſubtus villoſa, flore albo. *Tournef. cor.* 41.
Flowers aggregate ſeſſile terminating, leaves oblong very blunt villoſe underneath.

DESCRIPTIONS, *&c.*

The ſpecies of this genus are ſhrubs of no great height. The flowers axillary in ſome, at the ends of the branches in others; in ſome ſolitary, in others glomerate. The genus is very nearly allied to *Paſſerina*, and they are ſcarcely diſtinguiſhable from the flower; only the ſtyle is filiform and as long as the tube of the corolla in the *Paſſerina*, whereas in the *Daphne* there is little or no ſtyle.

The flowers are not always three together, but ſometimes two, four or five[a]. The terminating buds produce leaves, and the lateral buds flowers[b].]

1. The Mezereon is a ſhrub, growing (in gardens) to the height of five or ſix feet, with a ſtrong woody ſtalk, putting out many woody branches on every ſide, ſo as to form a regular head. The flowers come out very early in the ſpring, before the leaves, in cluſters all round the ſhoots of the former year. The leaves are ſmooth, about two inches long, and three quarters of an inch broad in the middle, placed without order.

[This ſhrub is ſeldom more than three or four feet high even in gardens, but in its wild ſtate it is from one to two feet in height: the branches then are not numerous; they are very flexible; the leaves are entire and of a pale green.

The fruit is a ſuperior berried drupe, firſt green, then red, of an ovate-globular form; with a thin ſucculent pulp, and a cruſtaceous, thin, brittle, black ſhining ſhell. It is however commonly called a berry[c].

Native of Lapland, Sweden, Denmark, Germany, Switzerland, France, Carniola, Savoy, Piedmont, Great Britain. Mr. Miller is the firſt who mentions that it is a native of our iſland, namely near Andover in Hampſhire. Since that it has been found by Mr. Woodward at Laxfield in Suffolk; by Mr. White in Selborne-hanger, Hants; and it has been frequently obſerved in the beech woods of Buckinghamſhire. As it has eſcaped all our old herbariſts, and even the indefatigable Ray and his immediate ſucceſſors; and birds are remarkably fond of the berries; I ſhould ſuſpect that they may have diſſeminated this beautiful ſhrub: unleſs we may ſuppoſe that it remained unnoticed on account of its early flowering, before herbariſts ſallied forth on their vernal excurſions.

Gerarde ſays that he had plenty thereof for his garden from Elbing in Poland. He calls it Germaine Olive Spurge or Spurge Olive, Spurge Flax, and Dwarf Bay, and ſays that the Dutch call it Mezereon. Parkinſon calls it Dwarf Bay or flowering Spurge. In German it is *Kellerhals*, *Kellerbere*, *Kellerkraut*, &c. In Dutch, *Peperboompje*. In Daniſh, *Kielderhals*. In Swediſh, *Kiællerhals*. In French, *Laureole gentille* or *femelle*, *Bois gentil*, *Bois joli*. In Italian, *Laureola femina*, *Dafnoide*, *Camelea*, *Calmolea*, *Biondella*. In Spaniſh, *Laureola hembra*. In Portugueſe, *Loireolea femea*, or *Mezereo major*. In Ruſſian, *Woltschje luko*.

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[a] Reich. and Juſſ.
[b] Linn. ſuec.
[c] Gærtner.

The branches make a good yellow dye.

The whole of this vegetable is extremely acrid, eſpecially when freſh, and if retained in the mouth excites great heat and inflammation, particularly of the throat and fauces. The berries when ſwallowed prove a powerful poiſon not only to man but to many quadrupeds. Both the bark and the berries of Mezereon, in different forms, have been long uſed externally in caſes of obſtinate ulcers and ill-conditioned ſores. In France the bark is uſed as an application to the ſkin, which under certain management, produces a ſerous diſcharge without bliſtering: and is thus rendered uſeful in chronic caſes of a local nature, anſwering the purpoſe of what is called a perpetual bliſter, while it occaſions leſs pain and inconvenience. In our own country the Mezereon has been principally employed in ſyphilitic caſes, and in this way Dr. Donald Monro was the firſt who gave teſtimony of its efficacy in the ſucceſsful uſe of the Liſbon diet-drink. Afterwards ſeveral caſes were publiſhed by Dr. Ruſſel, then phyſician to St. Thomas's hoſpital, fully eſtabliſhing the utility of the bark of Mezereon in venereal nodes. In the above caſes the decoction of the root was made uſe of; but in ſome caſes it has been found neceſſary to join with it a ſolution of ſublimate. Dr. Cullen ſays that Dr. Home has not only found the decoction of Mezereon to cure ſchirrous tumours which remain after the lues venerea, and after the uſe of mercury, but that it has alſo healed ſchirrous tumours from other cauſes. The conſiderable and long-continued heat and irritation that is produced in the throat when Mezereon is chewed, induced Dr. Withering to give it in a caſe of difficulty of ſwallowing, ſeemingly occaſioned by a paralytic affection: the patient was directed to chew a ſlice of the root as often as ſhe could bear it, and in about a month ſhe recovered her power of ſwallowing: ſhe had ſuffered the above complaint upwards of three years, and was greatly reduced, being totally unable to ſwallow ſolids, and liquids but very imperfectly[d].]

There are two principal varieties of the Mezereon; one with a white flower ſucceeded by yellow berries; the other with peach-coloured flowers and red fruit: the latter has ſometimes flowers of a much deeper red.

There is alſo a variety with variegated leaves. The flowers appear in february or march, in mild ſeaſons in january. The berries ripen in june, [if they are not eaten by birds.—Monſ. Villars mentions another variety, with the leaves a little villoſe, or having ſmall hairs at their baſe, and the flowers four together. He remarks, that the parts of fructification are ſo perfectly formed, the year before the flowers unfold themſelves, that the character may eaſily be determined by the naked eye.]

2. This riſes to the height of three or four feet, with a ſingle ſtalk, covered with a light-coloured bark. The flowers come out in cluſters on the ſides of the ſtalk, and being of an herbaceous colour make but little appearance: they appear early in the ſpring, and are ſucceeded by ſmall berries which are yellowiſh when ripe.

[According to Vahl, it is a low little ſhrub, branching only at bottom: the branches are erect, quite ſimple, ſmooth and even. Leaves very ſmooth, erect, glaucous. Flowers ſolitary, ſometimes two or even three together, ſhorter than the leaf, dioecous, four-ſtamened. D. dioica (n. 9.) has a very branching ſtem, the branches warted, the leaves more crowded together and ſhorter, broader towards the top, and not narrowing to both ends.

D. Thymelæa is native of Spain, Italy, and the South of France. Vahl found it in great abundance on the confines of New Caſtille towards Navarre.

3. Stems ſimple. Leaves alternate, remote, almoſt naked, annual, ſubmucronate. Flowers axillary, narrow, five or fewer, with a filiform pubeſcent tube, ſhorter than the leaves. It ſeems to be different from the preceding ſpecies, and was found in Auſtria by Jacquin[e].

4. This is a ſhrub with alternate branches. Leaves like thoſe of Knot-graſs, ſcarcely petioled, with white remote hairs on both ſides, fewer on the upper ſurface, and more towards the edges. In the axils are very many rudiments of branchlets, whence it is as it were verticilled. Flowers narrow, ſmall, ſhorter than the leaves. Obſerved in Spain and Portugal by Alſtroemer[f].]

5. This is a low ſhrubby plant, which ſends out ſeveral weak ſtalks from the root, about a foot long, and ſpreading about irregularly; theſe ſeldom become woody in England, but are tough and ſtringy, covered with a light bark: the leaves are ſmall, very ſoft, white and ſhining like ſattin, and ſit pretty cloſe to the ſtalks: between theſe white flowers come out in thick cluſters. [They are commonly two or three together, very ſeldom ſolitary, bell-ſhaped, ſilky on the outſide, but yellowiſh within, imbricated at the baſe with four or more ovate keeled ſcales[g].

Native of the South of France. Cultivated by Mr. Miller in 1739[h].

Vahl has another ſpecies (ſymb. 3. 53.) which he names *Daphne nitida*, and which he found on the calcareous mountains of Tunis. It has the appearance of the Tartonraira, but the leaves are only one-ſixth of the ſize, and nerveleſs; there are no ſcales at the baſe of the calyx; and the branches are rough, but not ſquarroſe with the permanent floral ſcales.]

6. This riſes about three feet high. The flowers come out in cluſters from the ſides of the branches early in the ſpring, and are ſucceeded by ſmall roundiſh berries, which turn red when ripe.

[The root fixes itſelf deeply in the crevices of the rocks. The little ſtems are ſhrubby and upright, ſcarcely a palm in height, as it were brachiate, leafy and flowering at the top. Leaves lanceolate or obovate, uſually emarginate, hoary with hairs when viewed with a glaſs, as are alſo the calyxes and fruits. The younger leaves appear hirſute to the naked eye, but afterwards appear bald unleſs to the magnifier[i].

Native of the South of France, the mountains near Geneva, Auſtria, and Italy. Cultivated in 1759, by Mr. Miller[k].]

7. This is a low evergreen ſhrub, riſing with ſeveral ſtalks to the height of two or three feet, dividing at top into ſeveral branches. The leaves come out irregularly on every ſide, ſit pretty cloſe to the branches, are thick, ſmooth and of a lucid green. Among theſe, towards the upper part of the ſtalks, come out the flowers in ſmall cluſters; they are of a yellowiſh green, and appear ſoon after chriſtmas, if the ſeaſon be not very ſevere. They are ſucceeded by oval berries, which are green till june, when they ripen and turn black, ſoon after which they fall off.

[The whole plant is flexible. The leaves are crowded at the ends of the branches, they are green all the winter, and are renewed in ſpring, after flowering time[l]. The racemes are nodding, with concave alternate bractes, not having any flowers in their axils. Flowers five terminating, heaped into an umbellet. The flowers are of a dull colour, their ſcent is unpleaſant, and they appear at a gloomy ſeaſon[m].

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[d] Woodville.

[e] Linn. mant.
[f] Linn. ſpec.
[g] Vahl.
[h] Hort. kew. from Mill. dict.
[i] Gouan.
[k] Hort. kew.
[l] Lightf. and Villars.
[m] Linn. ſyſt.

Native of Britain, France, Switzerland, Auſtria, and Carniola. Gerarde did not know that it grows wild in England, although it is common enough with us in woods and hedges.

Notwithſtanding Linneus's cenſure, the Spurge Laurel is a ſhrub of ſome value, on account of the lucid green of the leaves,] which continuing all the year, render it ornamental in winter; but particularly becauſe it flouriſhes under trees, and is therefore very proper to fill up ſpaces in plantations.

[Very happy effects are ſaid to have been ſometimes experienced from this plant in rheumatic fevers: it operates as a briſk and rather ſevere purgative: it is an efficacious medicine in worm caſes; but on account of its acrimonious nature, it ſhould be uſed by ſkilful practitioners. The whole plant has the ſame qualities, but the bark of the root is the ſtrongeſt. Dr. Alſton fixes the outſide doſe at ten grains [n].

Some other ſpecies of this genus are poſſeſſed of nearly ſimilar powers with the Mezereon and the Spurge Laurel, and are uſed in ſimilar caſes, but, like the former, require caution in their uſe, and ſhould not be truſted to inexperienced hands.

8. Stem about two feet high, branched ſometimes from the very bottom, about three lines in thickneſs, very pliable, covered with a gray bark. Leaves towards the top without order, of the figure and conſiſtence of thoſe of the Lemon, the largeſt four inches long and two wide, pointed at each end, ſmooth, bright green and ſhining, having a thick midrib underneath. At the end of april young ſhoots terminated by new leaves puſh from the extremities of the ſtems and branches, among which ſpring the flowers commonly in pairs on a peduncle nine or ten lines in length. The corolla is of a greeniſh yellow inclining to lemon colour; it has a ſweetiſh ſmell which is ſoon loſt [o].

Native of Pontus, firſt obſerved there by Tournefort: alſo in Siberia, by Guldenſtadt, flowering in autumn [p].

9. This is a ſhrub a foot in height, ſtiff and branched, with a corky bark. Branches alternate, erect, ſtiff, roughened by the ſcars of fallen leaves. Leaves crowded ſo as almoſt to be imbricate, very ſmooth, reſembling thoſe of Myrtle, four lines long, and hardly a line broad, not ciliate. Flowers ſeſſile, always two together, one flowering later than the other, dioecous: corolla yellowiſh white or pale-ſulphur colour, with a bellying tube.

Native of the Pyrenees, where it was firſt obſerved by Dr. Peck, a phyſician of Narbonne; and in 1768 by Gouan [q].

10. This is a ſmall ſhrub, a ſpan's length, according to Oſbeck, or three feet high, with aſcending branches, according to Loureiro. Leaves commonly acute, quite entire, petioled. Peduncle very ſhort, with from ſix to eight ſeſſile flowers at top [r]. Oſbeck ſays, that the eight filiform ſtamens are as long as the corolla or piſtil; whereas according to Loureiro, they are uſually ten in number, concealed within the tube, placed in two rows, in the upper ſix, in the lower four.

Native of China, about Canton, but probably from Nankin, ſince it is commonly called the Nankin ſhrub [s].]

11. This is a very humble ſhrub, ſeldom more than one foot high. Stems branched. Leaves narrow lanceolate, placed without order. The branches are terminated by ſmall cluſters of purple flowers, which ſtand erect. The tube of the corolla is longer and narrower than in the Mezereon. The flowers emit a pleaſant odour, and appear early in the ſpring.

[The leaves are ſometimes acute, ſometimes obtuſe and emarginate [t]. It varies with white flowers [u].

Native of France, Germany, Switzerland, Auſtria, monte Baldo, the Pyrenees, and Hungary. Cultivated in 1739 [x].]

12. This riſes with a ſhrubby ſtalk about two feet high, dividing into ſmall branches, terminated by panicles of flowers, which are much ſmaller than thoſe of the Mezereon, having ſwelling tubes contracted at the mouth; they appear in june.

[The ſtems ſpread on the ground; the leaves are annual and ſmooth; the flowers heaped, ſurrounded with leaves, ſweet-ſmelling, red above [y].

Native of the South of France, Spain and Italy, flowering twice in the year.—Cultivated in 1597, by Gerarde [z]: by whom it is called Spurge Flax or Mountain Widow Wayle: by Parkinſon Spurge Olive.]

13. This riſes to the height of five or ſix feet, dividing at top into ſeveral erect branches, covered with a white bark, and terminated by woolly heads, out of which the flowers come in ſmall cluſters: they are white, have oblong tubes, and the ſegments of the border are obtuſe and ſpreading.

Native of the Cape of Good Hope.

[14. Stem ſhrubbyiſh, compound.—Native of the Levant [a].

15. Native of the Society iſles [b]. It is not certain whether it be diſtinct from D. indica [c].

16. Branches tomentoſe, hoary.—Native of Tonga Tabu [d], or Namoka [e], in the South Seas.

17. Stem becoming ſhrubby, dichotomous, ſmooth, naked, erect. Branches like the ſtem, from divaricate erect. Leaves at the top of the laſt branchlets, approximating, ſeſſile, acute, quite entire, ſpreading, bent back at the tip; deep green on the upper ſurface, with a groove along the middle; paler underneath; unequal, thick, evergreen, an inch in length. Flowers about eleven. Bractes between the leaves and the umbel, lanceolate, about ten, entire, concave, green, ſmooth, only half the length of the calyx. Corolla ſmooth; tube purple, a line in length, diviſions of the border ſubcordate-ovate, obtuſe, on the outſide purple and ſomewhat wrinkled, on the inſide ſcarlet, ſpreading, alternately incumbent. Filaments inſerted below the mouth: anthers oblong, four included, and four ſtanding out. Germ ſmooth: ſtyle none: ſtigma ſimple, ſeſſile, globular, retuſe with a tranſverſe groove, whitiſh. Seed ovate, ſmooth.—It differs from the *Paſſerinas* in having no ſtyle; from *D. indica* in having a ſeſſile head, and alternate leaves.

Native of Japan, flowering there in february [f]; alſo of China, where it is cultivated on account of the grateful odour of the flowers.—Introduced 1771, by Benjamin Torin, Eſq. and flowers here from december to march [g].

18. A tree or ſhrub with alternate round branches, leafy at the end; covered with a ſmooth brown outer bark, and a very filamentoſe, ſilky, white inner bark, as in moſt of the other ſpecies. *Leaves* on ſhort petioles, acute, quite entire, veined, paler underneath, deciduous; the primordial ones minute, like ſtipules, ſilky on the back, and abortive. There are no proper ſtipules. *Flowers* in ſolitary heads, from the axils of the leaves of the former year. A pair of ſmall, erect, linear, obtuſe bractes, hairy on the outſide, at the baſe of the peduncles; which are an inch long, round, ſmooth, growing gradually thicker to the end. Involucre two-leaved, many-flowered; leaflets obovate, obtuſe, concave, quite entire, a little longer than the flowers, pubeſcent on the outſide, obſcurely nerved. Calyx ſubcylindric, white, very hirſute on the outſide, divided into four acutiſh, ſmall ſegments; the two inner ſmaller and ſmooth. Germ ſmooth at the ſides, but terminated by numerous briſtles, the length of the ſtyle. Stigma rather large, ſmooth.—On account of the involucre, it ſhould ſeem as if it might be placed in the genus *Dais*; but ſince it agrees with the Daphnes in the ſtructure of the flower, and number of the parts; and ſince the involucre itſelf, reſembles more the bractes in ſome ſpecies of Daphne, than the invo-

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[n] Withering. [o] Tournefort. [p] Pallas. [q] Gouan illuſtr.
[r] Linn. ſpec. Oſb. Lour. [s] Loureiro. [t] Gouan.
[u] Cluſius. [x] Hort. kew. from Mill. dict.

[y] Linn. ſyſt. [z] Hort. kew. [a] Linn. mant. [b] Forſter.
[c] Linn. ſuppl. [d] Ibid. [e] Forſter. [f] Thunberg.
[g] Hort. kew.

lucre of Dais, it ſeems better to refer it to this genus[h].

Thunberg gathered it in the iſland of Java.

19. This ſhrub ſeems to have the habit of Mezereum. The ſtems are ſtraight, ſlender, covered with an even teſtaceous bark; the lower branches are ſhort, flowering, hairy next the flowers; the upper ones which continue the growth of the ſhrub, are ſmooth. Leaves alternate, quite entire, drawn to a point at the baſe, ſeſſile; on the flowering twigs oblong-ovate, ſmaller, growing up to the flowers; on the barren branches more oblong, very like the leaves of Mezereon, and emulating their conſiſtence. Flowers moſtly five together, collected into a head, without any bractes or ſtipules. Corolla white, with a longiſh tube, ſwelling at the baſe, pubeſcent with many hairs, and a ſpreading border, with lanceolate ſmooth ſegments: anthers in a double row in the tube on very ſhort filaments: germ ſubgloBular, with an obtuſe ſtigma.

This elegant ſhrub was diſcovered by Patrin in the Altaic alps.

Pallas has another ſpecies allied to this and the Cneorum, which he calls *Daphne caucaſica.* It was obſerved by Guldenſtadt by the river Cſani near Achalgory, flowering with the Cherry and Pear at the end of april, and no where elſe on mount Caucaſus. It is a ſhrub two or three feet high and more, with wand-like branches, diffuſed, and covered with a brown bark. Leaves crowded, ſeſſile, oblong-lanceolate, ſomewhat waved, glaucous, quite entire, blunt at the end, and terminated by a little thorn. The flowers are in terminating, ſeſſile, naked umbels, about twenty together; they are white, ſucculent, the ſize of Lilac flowers, with the ſmell of the Hyacinth: tube long, green: ſtamens incloſed within the tube, in two rows, four at the throat, and four in the middle of the tube, on very ſhort filaments[i].

20. Stem three feet high, ſimple, with aſcending branches. Leaves quite entire, ſmooth, on ſhort petioles. Flowers yellowiſh. Common calyx three-leaved, three-flowered. Corolla tubular, four or five-cleft.

Native of China, in the ſuburbs of Canton.

21. This is a tree, ten feet high, with aſcending branches, and a very tough bark like that of Hemp. Leaves ovate-lanceolate, quite entire, ſmooth. Flowers yellow, in ſubterminating umbels. Corolla ſalver-ſhaped, with a long tube, and a ſmall border, with ovate ſegments. Filaments in two rows within the tube, with oblong anthers. Berry ovate, red, ſmall.—Native of the woods of Cochinchina.

An excellent writing paper is made from the bark, prepared like Hemp. Shapeleſs, heavy, brown, reſinous, woody fragments, reſembling the wood of Aloe, and having ſomewhat of its ſmell in the fire, are frequently found within the trunk of this tree near the root. The bark and root may be uſed medicinally in the Aſcites, *&c.* without any of that danger to which the other ſpecies are liable[k].

22. Stems three feet high, much branched, the branches often forked: bark tough, wrinkled, void of down or hair, except on the younger branches. Leaves evergreen, alternate, on ſhort foot-ſtalks, entire, a little revolute on the edge, having a ſilky down underneath. Bractes obovate, obtuſe, externally downy. Calyx red, with a ſilky down on the outſide; its diviſions ſpreading, a little obtuſe. Germ clothed with upright briſtles, as in D. pendula, and there are nectariferous glands at the baſe.

Native of low hills in the South of Italy: it covers the hills and fields on the banks of the Vulturnus, as furze does our commons in England; and ſince it thrives with us like the Myrtle, it is a valuable addition to our ſhrubs. Dr. Smith gathered it in march 1787 near Caſerta, in company with Mr. Græffer[l].

23. This is a tree, the wood of which is white. Leaves about four inches long, and two and a half broad near the baſe where broadeſt, having one middle and ſeveral tranſverſe ribs, of a yellowiſh green colour, ſhining, thick and ſmooth. The outer bark is ſmooth, light brown or gray and ſtriated; the inner is ſolid and white, of a very fine texture, tough and diviſible into ſeveral coats or layers, which may be drawn out into thin webs reſembling lace, and have been actually worn as ſuch. King Charles the Second had a cravat made of it, which was preſented to him by Sir Thomas Lynch then governor of Jamaica. It is there principally uſed for ropes, but would undoubtedly make fine paper, if properly prepared[m].

Native of Jamaica, where it is called Lagetto or Lace-bark tree; and of Hiſpaniola, where it is known by the name of Bois Dentelle. Its place is between the 10th and 11th ſpecies.]

24. This riſes with a woody ſtalk to the height of twenty feet, dividing into many branches, which are covered with a gray rough bark; at the extremity of the branches are produced the peduncles, which are unequal in length, and divide into ſeveral ſmaller, each ſuſtaining a cluſter of ſmall white flowers, which are collected into a head or ſmall umbel, having one general involucre; they are male and hermaphrodite on different trees. The latter are ſucceeded by oval berries, not quite ſo large as thoſe of the common Bay. The leaves of this tree are about two inches long, and one inch broad, rounded at the top and entire, on very ſhort foot-ſtalks. It was diſcovered at La Vera Cruz by Dr. Houſtoun, [and is alſo a native of Jamaica. It was cultivated by Mr. Miller before 1733.

25. Native of Jamaica[n].

The place of this and the foregoing is between the 11th and 12th ſpecies.

26. This is an humble, ſtiff and very branching ſhrub. Branches purple, warted, villoſe at top. Leaves ſeſſile, crowded, thick, obtuſe. Flowers axillary, oppoſite, ſhorter than the leaf. Scales in pairs, oppoſite, minute, at the baſe of the calyx. Segments of the corolla ovate. Gathered by Vahl in the kingdom of Arragon.

Its proper place is between the third and fourth ſpecies.

27. This is a very branching ſhrub. Branches round, brown, villoſe at top. Leaves towards the ends of the branchlets, crowded, ſeſſile, lanceolate-elliptic, veinleſs, quite entire, acute, ſmooth above, villoſe underneath. Flowers purple, five. Tube of the corolla villoſe-ſilky, enlarged at the baſe; the ſegments of the border oblong, obtuſe, ſmooth within, ſhorter by half than the tube. Fruit ſubovate. It differs from D. oleoides in having the leaves villoſe underneath, in the number of flowers, and in the ſegments of the border being oblong. Native of Candia and Naples.

The proper place of this and the next is between the 14th and 15th ſpecies.

28. This is a ſhrub with round, villoſe, naked branches. Leaves towards the ends of the branchlets, approximating, ſeſſile, a little narrower at the baſe, rounded at the end, the younger ones villoſe on both ſides, the reſt only underneath, veinleſs. Flowers ſix. Tube of the corolla villoſe-ſilky on the outſide, gibboſe at the baſe; ſegments oblong, obtuſe. It differs from the foregoing in the form of the leaves, and the whiteneſs of the corolla.—Native of the Levant[o].]

PROPAGATION AND CULTURE.

1. This is propagated by ſeeds, which ſhould be ſown on a border expoſed to the eaſt, ſoon after the berries are ripe; for if they are not ſown till the ſpring following they often miſcarry, and always remain a year in the ground before the plants appear; whereas thoſe which are ſown in auguſt, will grow the following ſpring, ſo that a year is ſaved, and theſe never fail. When the plants come up, they will require no other care but to keep them clean

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[h] Smith.
[i] Pallas.
[k] Loureiro.
[l] Smith.
[m] Sloane and Browne.
[n] Swartz.
[o] Vahl.

from weeds, and if the plants are not too cloſe together, they may continue in the ſeed-bed, to have the growth of two ſummers, eſpecially if they do not make great progreſs the firſt year; then at michaelmas, when the leaves are ſhedding, they ſhould be carefully taken up ſo as not to break or tear their roots, and planted into a nurſery at about ſixteen inches row from row, and eight or nine inches aſunder in the rows; in this nurſery they may remain two years, by which time they will be fit to remove to the places where they are deſigned to remain for good: the beſt ſeaſon to tranſplant theſe trees is in autumn, for as theſe plants begin to vegetate very early in the ſpring, it is not proper to tranſplant them at that ſeaſon. Theſe plants grow beſt in a light ſandy earth which is dry, for in cold wet land they become moſſy, and make little progreſs; ſo that upon ſuch ſoils they never grow to any ſize, and produce few flowers.

Although the berries of this tree are ſo very acrid, as to burn the mouth and throat of thoſe who may incautiouſly taſte them, yet the birds greedily devour them, as ſoon as they begin to ripen: ſo that unleſs the ſhrubs are covered with nets to preſerve the berries, they will all be deſtroyed before they are fit to gather.

The Mezereon is a very ornamental ſhrub in gardens, very early in the ſpring, before others flower: and where there are plenty of them growing together, they perfume the air to a conſiderable diſtance.

7. Spurge-Laurel may alſo be propagated by ſeeds, layers or cuttings. The plants may be eaſily obtained from the woods.

The ſecond, fifth, and twelfth ſorts are hardy, and will live through the winters in England in the open air, provided they are in a dry ſoil and a warm ſituation. The ſixth and eleventh ſorts are as hardy as the common Mezereon, ſo are not in danger of being hurt by froſt in England; but they are all very difficult to keep in gardens, becauſe they will not bear to be tranſplanted. I have ſeveral times raiſed the plants from ſeeds, which have ſucceeded well in the places where they were ſown, but whenever they were removed, they certainly died, though performed at different ſeaſons, and with the greateſt care, and the ſame has happened to every other perſon who has raiſed any of theſe plants; and ſome of my correſpondents have aſſured me, they have frequently attempted to remove theſe plants from their natural places of growth, into their gardens, and have choſen plants of all ſizes, from the youngeſt ſeedlings to the oldeſt plants, yet have never ſucceeded in it; though they have uſed their utmoſt care, and have performed it at different ſeaſons. Therefore thoſe who are deſirous to have theſe plants in their gardens, muſt procure their ſeeds from the countries where they naturally grow; and when they arrive, they ſhould be immediately ſown where they are deſigned to remain, which for the ſecond, fifth, and twelfth ſorts, ſhould be on a very warm dry border, where, if there is a foundation of lime, rubbiſh, or chalk, under the upper ſurface of the ground, the plants will thrive better and continue much longer, than in better ground; and all the culture they require, is to keep the place clean from weeds, for the leſs the ground is ſtirred near the roots, the better the plants will thrive; for they naturally grow on poor ſhallow land, and out of crevices in rocks; ſo the nearer the ſoil approaches to this, the more likely the plants will be to ſucceed.

The ſixth and eleventh ſorts may have a cooler ſituation; if theſe are ſown where they may have only the morning ſun, they will thrive better than in a warmer ſituation, and the ground near the roots of theſe ſhould not be diſturbed; therefore in the choice of the ſituation, there ſhould be regard had to this, not to ſow them near other plants, which may require tranſplanting, or to have the ground dug and looſened. The ſeeds of theſe plants coming from diſtant countries, rarely arrive here time enough to ſow in autumn, ſo that when they are ſown in the ſpring, the plants do not appear till the ſucceeding ſpring; and I have ſometimes had the ſeeds remain till the ſecond ſpring in the ground, before the plants have appeared; but as this may be too long for many people to leave the ground undiſturbed, they had better put the ſeeds into ſmall pots of earth, and bury them in the ground the firſt ſummer, and in autumn take them up, and ſow them where they are to ſtand; by this method, the ſeeds will be forwarded to vegetate the following ſpring.

The ſixth ſort is a beautiful ſweet ſhrub, and deſerves a place in gardens, as much as any of thoſe we cultivate for ornament.

The thirteenth ſort grows naturally at the Cape of Good Hope, and requires a good green-houſe to preſerve it. This plant is very difficult to keep or propagate in gardens.

The 14th, 15th, 16th, 17th alſo require the protection of a green-houſe.

18, 23, 24, 25. are ſtove plants, and muſt be managed in the ſame manner with Coffee.

[Daphne americana. See *Strumpfia.*

Daphnoides. See *Daphne.*

Darea. See *Trichomanes.*

Darnel-grass. See *Lolium.*

Dasystephana. See *Gentiana.*

Date-Plum. See *Dioſpyros.*

Date-Tree. See *Phoenix.*]

DATISCA.

Lin. gen. n. 1132. *Reich.* 1237. *Schreb.* 1543. *Gærtn. t.* 30. *Juſſ.* 445. Cannabina. *Tourn. cor.* 52.

Claſſ. 22. 10. Dioecia Dodecandria.

Miſcellaneæ α. *Lin. ord. nat.*

GENERIC CHARACTER.

* *Male.*

Cal. *Perianth* five-leaved: *leaflets* linear, acute, equal.

Cor. none.

Stam. *Filaments* ſcarce any. *Anthers* about fifteen, oblong, many times longer than the calyx, obtuſe.

* *Female.*

Cal. *Perianth* two-toothed, the third tooth wanting, erect, very ſmall, ſuperior, permanent.

Cor. none.

Pist. *Germ* oblong, inferior; longer than the calyx. *Styles* three, two-parted, ſhort. *Stigmas* ſimple, oblong, ſhaggy, length of the germ.

Per. *Capſule* oblong, triangular, three-valved, three-horned, one-celled.

Seeds numerous, ſmall, adhering longitudinally in three (from three to five, *G.*) directions to the capſule.

ESSENTIAL CHARACTER.

Male. *Cal.* five-leaved. *Cor.* none. *Anthers* ſeſſile, long, fifteen.

Fem. *Cal.* two-toothed. *Cor.* none. *Styles* three. *Capſ.* triangular, three-horned, one-celled, pervious, many-ſeeded, inferior.

SPECIES.

1. Datiſca cannabina. *Smooth-ſtalked Baſtard Hemp.* *Lin. ſpec.* 1469. *Reich.* 4. 271. *hort. cliff.* 457. (Cannabis.) *Gærtn. fruct.* 147.
Cannabis lutea fertilis. *Alp. exot.* 300. *t.* 298. *Mor. hiſt.* 3. 433. *ſ.* 11. *t.* 25. *f.* 3, 4.
C. lutea cretica—& ſterilis. *Alp. exot.* 296. *t.* 295 & 301. *t.* 300.
Luteola herba ſterilis—& fol. cannabinæ. *Bauh. pin.* 100.
Stem even.

2. Datiſca hirta. *Rough-ſtalked Baſtard Hemp.* *Lin. ſpec.* 1469. *Reich.* 4. 271.
Stem hirſute.

DESCRIPTIONS, &c.

[Theſe are tall, upright herbs, with alternate unequally-pinnate leaves. The flowers are in ſpiked racemes, axillary, with one bracte. The capſule is like that of Reſeda, but inferior; and the flower is apetalous. They have the air of Hemp, but the fruit is inferior, and contains many ſeeds[a].]

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[a] Juſſieu.

1. This has a perennial root, from which ariſe ſeveral herbaceous ſtalks, about four feet high, with pinnate leaves placed alternately, each compoſed of three pairs of leaflets, terminated by an odd one; theſe are two inches long, and half an inch broad, ending in acute points, deeply ſerrate, and of a light green. The flowers come out in long looſe ſpikes from the upper part of the ſtalks at the axils, but having no petals make a poor appearance: the anthers of the male flowers being pretty long, and of a bright yellow colour are moſt viſible at any diſtance.

[Capſule inferior, ovate-oblong, crowned with the two ſubulate teeth of the calyx and the three bifid ſtyles, membranaceous, thin, with three or five rounded angles, having no valves, but opening at top with a large round hole [b].

Native of Candia or Crete. Cultivated in 1739, by Mr. Miller [c].

It flowers in june or july, and the ſeeds ripen in ſeptember.

2. Larger. The ſtem rough on every ſide with hairs that ſtand out. Leaflets larger, more alternate, more decurrent and confluent at the baſe [d].

Found in Penſylvania, by Kalm.]

PROPAGATION AND CULTURE.

Theſe plants may be propagated by parting the roots, which ſhould be performed in autumn when the ſtalks decay, but they muſt not be parted too ſmall; they may be planted in any open beds, where they are not under the drip of trees, and will require no other culture but to keep them clean from weeds.

They may alſo be propagated by ſeeds, but theſe ſhould be taken from ſuch plants as grow in the neighbourhood of male plants, otherwiſe they will not ſucceed; and if the ſeeds are not ſown in autumn, they ſeldom grow the firſt year. The ſeedling plants when they riſe, will require no other care but to keep them clean from weeds till autumn, when they may be tranſplanted where they are to grow.

The ſecond ſort is equally hardy with the firſt, but ſhould have a more ſhady ſituation, and a moiſter ſoil.

DATŪRA.

Engl. *Thorn-apple.*

Lin. gen. n. 246. *Reich.* 263. *Schreb.* 332. *Juſſ.* 125. Stramoniam. *Tourn.* 43. 44. *Pont.* 3. 1.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Luridæ.*—Solaneœ. Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, oblong, tubular, bellied, five-cornered, five-toothed, horizontally deciduous near the baſe, the remaining circular part permanent.

COR. one-petalled, funnel-form. *Tube* cylindric, almoſt longer than the calyx. *Border* erect-expanding, five-cornered, five-plaited, almoſt entire, with five acuminate teeth.

STAM. *Filaments* five, ſubulate, length of the calyx. *Anthers* oblong, compreſſed, obtuſe.

PIST. *Germ* ovate. *Style* filiform, ſtraight. *Stigma* thickiſh, obtuſe, two-plated.

PER. *Capſule* ſomewhat ovate, two-celled, four-valved, ſeated on the baſe of the calyx. *Receptacles* convex, large, dotted, affixed to the diſſepiment.

SEEDS numerous kidney-form.

OBS. *The ſmoothneſs as well as the prickly roughneſs of the capſule in this genus varies.*

ESSENTIAL CHARACTER.

Cor. funnel-form, plaited. *Cal.* tubular, angular, deciduous. *Capſ.* four-valved.

SPECIES.

1. Datura ferox. *Rough Thorn-apple.*
Lin. ſpec. 255. *Reich.* 1. 497. *amœn.* 3. 403. *Zanon. hiſt.* 1. 76.
Stramonium ferox. *Bocc. ſic.* 50. *Herm. lugdb.* 583. *Mor. ſ.* 15. *t.* 2. *f.* 4. *Raii hiſt.* 748. *n.* 5.
S. longioribus aculeis: *Bar. rar.* 109. *t.* 1112.
Pericarps thorny erect ovate, the upper thorns very large and convergent.

2. Datura Stramonium. *Common Thorn-apple.*
Lin. ſpec. 255. *Reich.* 1. 497. *hort. cliff.* 55. *upſ.* 43. *fl. ſuec. n.* 198. *Hudſ. angl.* 92. *With.* 230. *Curtis lond. n.* 61. *Gron. virg.* 23. *Pollich pal. n.* 224. *Krock. ſileſ. n.* 339. *Fl. dan. t.* 436. *Blackw. t.* 313. *Sabb. hort.* 1. *t.* 92. *Woodv. med. bot.* 338. *t.* 124. *Stoerck ſtram. Plenck, ic. t.* 96.
Stramonium. *Hall. helv. n.* 586.—foetidum. *Scop. carn. n.* 252.—ſpinoſum. *Ger. emac.* 348. *f.* 2.
Solanum fœtidum pomo ſpinoſo oblongo. *Bauh. pin.* 168.
S. maniacum. *Col. phyt.* 47.
S. pomo ſpinoſo oblongo, &c. *Raii ſyn.* 266.
S. majus album. *Park. parad.* 360. *Raii hiſt.* 748.
Pericarps thorny erect ovate, leaves ovate ſmooth.

3. Datura Tatula. *Blue Thorn-apple.*
Lin. ſpec. 256. *Reich.* 1. 498.
Stramonium majus purpureum. *Park. parad.* 360. *Raii hiſt.* 748.
Pericarps thorny erect ovate, leaves cordate ſmooth toothed.

4. Datura faſtuoſa. *Purple Thorn-apple.*
Lin. ſpec. 256. *ſyſt.* 220. *Reich.* 1. 498. *Rumph. amb.* 5. *t.* 243. *f.* 2. *Sabb. hort.* 1. *t.* 93.
S. fœt., pomo ſpinoſo rotundo, ſemine pallido. *Bauh. pin.* 168. *Raii hiſt.* 748. 2.
Pericarps tubercled nodding globular, leaves ovate angular.

5. Datura Metel. *Hairy Thorn-apple.*
Lin. ſpec. 256. *ſyſt.* 220. *Reich.* 1. 498. *hort. cliff.* 55. *upſ.* 44. *fl. zeyl. n.* 86. *mat. med.* 64. *Rumph. amb.* 5. 242. *t.* 87. *Rheed. mal.* 2. 47. *t.* 28. *Lour. cochinch.* 110.
S. pomo ſpin. rot., longo fl. *Bauh. pin.* 168. *Raii hiſt.* 747.
Pericarps thorny nodding globular, leaves cordate almoſt entire pubeſcent.

6. Datura arborea. *Tree Thorn-apple.*
Lin. ſpec. 256. *Reich.* 1. 498.
Stramonioides. *Feuill. peruv.* 2. 761. *t.* 46.
Pericarps ſmooth unarmed nodding, ſtem arboreous.

[7. Datura laevis. *Smooth-capſuled Thorn-apple.*
Lin. ſyſt. 220. *ſuppl.* 146. *Weig. in act. ſoc. phyſ. t.* 1.
D. inermis. *Jacqu. hort.* 3. 44. *t.* 82.
Pericarps ſmooth unarmed erect, leaves ſmooth, ſtem fiſtular herbaceous.]

8. Datura innoxia.
Mill. dict. n. 5.
Stramonium fol. hyoſcyami, fl. toto candido, fr. propendente rotundo, ſpinis innoxiis ornato. *Boerh. lugdb.* 1. 262.
Pericarps ovate nodding ſet with harmleſs ſpines, leaves cordate pubeſcent.

DESCRIPTIONS, *&c.*

[The ſpecies of this genus have a ſtrong narcotic ſmell; they are all herbs and annual, except the ſixth. The flowers and branches ſolitary.]

1. This ſort ſeldom riſes more than a foot and half high, ſpreading out into many branches. Leaves ſomewhat like thoſe of the common or ſecond ſort, but ſmaller, and ſtanding upon longer foot-ſtalks; the flowers are alſo ſmaller; the fruit is round, and armed with very ſtrong ſharp thorns; the ſeeds are black when ripe.

[This is leſs ſmooth than the common ſort (n. 2.) and the four uppermoſt ſpines of the capſule are very large and erect. It is annual and a native of China [e].

It flowers from july to ſeptember, and was cultivated in 1731, by Mr. Miller [f].

2. *Stem* from one to ſix feet in height, according to the ſoil, but ſeldom more than two feet, round, ſmooth; dividing into many ſtrong, irregular branches, which are hollow, covered with a fine down. *Leaves* from the forking of the ſtem and

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[b] Gærtner.

[c] Hort. kew.

[d] Linn. ſpec.

[e] Linn. ſpec.

[f] Hort. kew.

branches, ſingle, ſcarcely ſix inches long, petioled, pointed, deep green on the upper ſurface, paler beneath and on the edges, with ſtrong ribs or nerves, unequally ſinuated and toothed about the edge, extending farther down the petiole on one ſide than on the other. Petioles round, downy, ſhorter than the leaves, above faintly channelled. *Flowers* ſingle from the axils, on ſhort peduncles, upright, (firſt from the forks of the branches, and afterwards near the extremities). Calyx pale green: corolla white; tube greeniſh, ſhorter than the calyx: lower part of the filaments attached to the tube of the corolla; anthers upright, ſeſſile, of a browniſh yellow colour. Nectary a circular notched gland at the baſe of the germ, which is ſuperior, ſomewhat conical and hiſpid; ſtyle the length of the ſtamens, growing a little thicker towards the top. Seeds blackiſh [g].

Gerarde (1597) informs us, that the Thorne apple was brought in ſeed from Conſtantinople by Lord Edward Zouch.] Mr. Miller ſays, it was probably firſt introduced from Italy or Spain, but it is now become ſo common about London and other great towns, as to appear like a native plant, there being few gardens or dunghills without it in ſummer.

[That it is a native of America however we have the moſt undoubted proofs; for in the earth brought with plants from various parts of that extenſive country, we are ſure to have the Thorn-apple come up. Kalm ſays, that it grows about all the villages, and that this and the Phytolacca are the worſt weeds there [h]. Our old writers call it Thorny-apples of Peru.

At night the leaves, particularly the upper ones, riſe up and incloſe the flowers [i]: which appear from july to ſeptember.

Gerarde ſays he firſt diſperſed the ſeeds through this land, and that he made great uſe of it in chirurgerie, as well in burnings and ſcaldings, as alſo in virulent and maligne ulcers, apoſtemes, and ſuch like.

An ointment prepared from the leaves gives eaſe in external inflammations and hæmorrhoids. The Edinburgh college direct an extract from them; which has been given with great advantage in convulſions and epilepſies; the doſe from two to ſixteen grains a day. Theſe and the ſeeds given internally bring on delirium, tremors, ſwelling, itching, eruption, and inflammation on the ſkin [k].

3. This reſembles the common ſort, but is twice the ſize. Stem purpliſh with white dots, divided at an acute angle, ſmooth and even. Corollas pale blue. Leaves more finely toothed, and, if they be flatted, cordate [l].

Cultivated 1686, by Mr. Ray [m], in his garden at Cambridge.]

4. This riſes with a fine poliſhed purple ſtalk four feet high, dividing into ſeveral branches. Leaves large, ſmooth, ſinuated, on pretty long foot-ſtalks. The flowers are produced at the diviſions of the branches; they have large ſwelling tubes, which ſpread very broad at the top, their brims having ten angles, each ending in a long ſlender point. The flowers are of a beautiful purple on their outſide, and a ſattiny white within; ſome of them are ſingle, others have two or three flowers ſtanding one within another, and ſome are double, having four or five petals within each other of equal length, ſo as to appear a full flower at the brim; they have an agreeable odour at firſt, but if long ſmelt to, become leſs agreeable, and are narcotic. The ſeed-veſſel is thick and fleſhy, as are alſo the partitions of the cells: the outſide is covered with blunt protuberancies; and the ſeeds are of a bright brown colour when ripe.

[Stem rufous with white dots or lines [m].

Native of the Eaſt Indies and of Egypt. Cultivated 1731, by Mr. Miller [n].]

5. This has a ſtrong ſtem three feet high, dividing into many woolly branches: the leaves have only two or three ſlight indentures on their edges: the flowers have long tubes, which extend beyond the bifid calyx, then they ſpread out very broad where the brim is divided into ten obtuſe angles; they are of a pure white above, but the tubes have a tincture of green within: they are ſucceeded by roundiſh fruit, cloſely covered with thorns: the ſeeds are of a light brown colour when ripe.

[The calyx is not angular but columnar, only ſwelling a little [o].

Native of Aſia, Africa, and the Canary iſlands. Cultivated 1759, by Mr. Miller [p].]

6. This riſes with a woody ſtalk to the height of twelve or fourteen feet, dividing into ſeveral branches. Leaves oblique, ſix inches long, two inches and a half broad in their wideſt part, growing narrower at each end, downy, on long footſtalks, which ſtand nearer to one ſide than the other. The flowers come out at the diviſions of the branches; they have a looſe tubular calyx near four inches long, which opens at the top on one ſide like a ſpathe: the tube of the flower is narrow; but above, it ſwells very large near ſix inches in length, then ſpreads open at the brim, where it is divided into five angles, which terminate in very long points; they are white, with ſome longitudinal ſtripes, of a pale yellow on their outſide, and are ſucceeded by round ſmooth capſules, filled with kidney-ſhaped ſeeds.

Native of South America; and one of the greateſt ornaments to the gardens in Chili, where the inhabitants propagate it with great care. When the flowers are fully blown, they make a fine appearance, and a ſingle tree will perfume the air of a large garden.

[Introduced 1783, by Monſ. Thouin [q]. It had however been cultivated before, both in the Chelſea garden, and by Lord Petre, from ſeeds ſent over by Dr. Houſtoun.

7. In appearance and ſtature this is like the other annual ſpecies. The leaves reſemble thoſe of *D. Stramonium* or *Tatula*; they are ovate and toothed. The corollas are white [r].

Native of Africa. Introduced 1780, by Monſ. Thouin. It flowers from july to ſeptember [s].]

8. This riſes with a purpliſh ſtem three or four feet high, dividing into ſeveral ſtrong branches. Leaves oblong heart-ſhaped. Stems, branches and leaves covered with ſoft hairs. The flowers come out at the diviſions of the ſtalk and branches, ſtanding erect; they are large, white; and are ſucceeded by oval fruit, covered with long, ſoft, innocuous ſpines, and opening within in four cells, full of brown ſeeds. It grows naturally at La Vera Cruz, whence Mr. Miller received the ſeeds.

PROPAGATION AND CULTURE.

Moſt of the ſpecies, coming from hot countries, require the protection of a ſtove or glaſs-caſe. The ſecond and third only are hardy, and if permitted to ſeed, will furniſh a ſupply of plants for ſeveral years to come; for the ſeeds will be long in the ground, and when turned up to the air will vegetate.

The firſt, fourth, and fifth may be raiſed, by ſowing the ſeeds upon a gentle hot-bed in the ſpring, and afterwards treating the plants in the ſame manner as the Marvel of Peru and other hardier kinds of annuals; tranſplanting them into the full ground the latter end of may. They will flower in july; and if ſome of the plants be placed in a glaſs-caſe, they will produce ripe ſeeds in autumn.

The ſixth and ſeventh require to be kept in a ſtove, being more tender than the reſt.

The eighth, in a favourable ſeaſon, will riſe in the ſpring from ſcattered ſeeds; and, if the ſummer prove warm, it will flower, and even perfect its ſeeds.

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[g] Curtis. [h] Ibid. [i] Withering. [k] Ibid. [l] Linn. ſpec. [m] Hort. kew. [m] Linn. ſyſt. [n] Hort. kew.

[o] Linn. ſyſt. [p] Hort. kew. [q] Ibid. [r] Linn. ſuppl. [s] Hort. kew.

DAUCUS. (Δαυκος *Dioſcor.* Daucus, *Plin. from* δαιω, *as ſome think: on account of its hot taſte.*)

Eng. *Carrot.* Fr. *Carotte.*

Lin. gen. n. 333. *Reich.* 364. *Schreb.* 466. *Gærtn. t.* 20. *Juſſ.* 224. *Tourn.* 161.

Claſſ. 5. 2. Pentandria Digynia.

Nat. order of *Umbellatæ* or *Umbelliferæ.*

GENERIC CHARACTER.

Cal. *Umbel univerſal* manifold, flowering flat, fruiting concave-converging. *Partial* manifold, ſimilar.

Involucre univerſal many-leaved, length of the umbel: *leaflets* linear, pinnatifid. *Partial* more ſimple, length of the umbellule.

Perianth proper ſcarce manifeſt.

Cor. *univerſal* difform, ſomewhat rayed; *floſcules of the diſk* abortive. *Proper* of five petals, inflex-hearted, the exterior ones larger.

Stam. *Filaments* five, capillary. *Anthers* ſimple.

Pist. *Germ* inferior, ſmall. *Styles* two, reflex. *Stigmas* obtuſe.

Per. none. *Fruit* ovate, often hiſpid on every ſide with ſtiff hairs, bipartile.

Seeds two, ſomewhat ovate, on one ſide convex, hiſpid, on the other flat.

ESSENTIAL CHARACTER.

Cor. ſubradiate, all hermaphrodite. *Fruit* hiſpid with hairs: (muricate with prickles forming longitudinal creſts, *G.*)

SPECIES.

1. Daucus Carota. *Wild Carrot* or *Bird's-neſt.*

Lin. ſpec. 348. *Reich.* 1. 667. *hort. cliff.* 89. *upſ.* 59. *fl. ſuec. n.* 237. *mat. med.* 77. *Plenck. ic. t.* 176. *Woodv. med. bot.* 443. *t.* 161. *With.* 274. *Lightf. ſcot.* 156. *Relh. cantabr. n.* 216. *Hall. helv. n.* 746. *Pollich pal. n.* 273. *Scop. carn. n.* 307. *Krock. ſileſ. n.* 406. *Fl. dan. t.* 723. *Sabb. hort.* 4. *t.* 74. *Allion. pedem. n.* 1380. *Villars dauph.* 2. 652. *Gærtn. fruct.* 1. 79. *Fl. ruſt. t.* 82.

Caucalis Carota. *Hudſ. angl.* 114.

Daucus vulgaris. *Cluſ. hiſt.* 2. 198. *Neck. gallob.* 139.

D. ſylveſtris. *Mill. dict. n.* 1.

Paſtinaca ſylveſtris. *Camer. epit.* 508. *Bauh. hiſt.* 3. 62. *Raii hiſt.* 465. 2. *Mor. hiſt. ſ.* 9. *t.* 13. *f.* 2.

P. tenuifolia ſylv. *Bauh. pin.* 151. *Ger.* 873. *emac.* 1028. *Park. theat.* 902. 2.

Staphylinus. *Riv. pent. t.* 28.

β. P. tenuif. ſativa, radice lutea. *Bauh. pin.* 151. *Blackw. t.* 546. *Mor. hiſt. ſ.* 9. *t.* 13. *f.* 1. *umb. t.* 2. c, f, g. *Raii hiſt.* 465. 1. *Ger.* 872. *emac.* 1027. 1. *Park.* 902. 1. *parad.* 508.

γ. P. tenuif. ſat., rad. atrorubente. *Bauh. pin.* 151. *Ger. emac.* 1027. 2. *Mor. ſ. med. ord.* 1. *Park.* 901.

Daucus Carota. *Mill. dict. n.* 2.

Seeds hiſpid, petioles nerved underneath.

2. Daucus mauritanicus. *Fine-leaved Carrot.*

Lin. ſpec. 348. *ſyſt.* 277. *Reich.* 1. 668. *mant.* 391. *Allion. pedem. n.* 1381. *t.* 61. *f.* 1.

Paſtinaca tenuifolia, radice & umbella lutea. *Mor. hiſt.* 3. 306. *ſ.* 9. *t.* 13. *f.* 5.—& P. tenuif. ſicula hirſuta criſpa. 305. *f.* 3.

Seeds hiſpid, central floſcule barren, fleſhy, common receptacle hemiſphæric.

3. Daucus Viſnaga. *Spaniſh Carrot* or *Pick-tooth.*

Lin. ſpec. 348. *ſyſt.* 277. *Reich.* 1. 668. *mant.* 352. *hort. cliff.* 89. *Jacqu. hort.* 3. *t.* 26. *Gron. orient.* 83.

Viſnaga. *Bauh. hiſt.* 3. 31. *Raii hiſt.* 456.——V. Gingidium. *Park.* 890. *f.* 1.

Gingidium umbella oblonga. *Bauh. pin.* 151.

G. alterum. *Dod. pempt.* 792.—hiſpanicum. *Ger.* 885. *f.* 2. *emac.* 1042. 2. *Park.* 891. *n.* 2.

Seeds gloſſy, univerſal umbel coaleſcent at the baſe.

4. Daucus Gingidium. *Shining-leaved Carrot.*

Lin. ſpec. 348. *Reich.* 668.

D. montanus lucidus. *Tourn. inſt.* 307.

Gingidium. *Matth. comm.* 372. *t.* 373.—fol. chærefolii. *Bauh. pin.* 151.

Paſtinaca fol. oenanthes. *Bocc. ſic.* 74. *ic.* 40. *Mor. ſ.* 9. *t.* 13. *f.* 10.

Rays of the involucre flat: diviſions recurved.

5. Daucus muricatus. *Prickly-ſeeded Carrot.*

Lin. ſpec. 349. *ſyſt.* 277. *Reich.* 669. *mant.* 352. *Gærtn. fruct.* 80.

Artedia muricata. *Lin. ſpec. edit.* 1. 242. *hort. cliff.* 89.

Caucalis daucoides tingitana. *Mor. hiſt.* 308. *ſ.* 9. *t.* 14. *f.* 4. *Raii hiſt.* 468. *Herm. par. t.* 111.

C. monſpeliaca, echinato magno fructu. *Bauh. pin.* 153.

Echinophora tingitana. *Riv. pent.* 27.

E. altera aſperior platycarpos. *Col. ecphr.* 1. 95. *t.* 94.

β. D. maritimus.

Lin. ſpec. 349. *Krock. ſileſ. n.* 407. *Gærtn. fruct.* 80.

Caucalis umbella bifida, umbellulis diſpermis, involucris ſemine brevioribus linearibus. *Gouan hort.* 135.

C. inv. univerſali diphyllo, partialibus pentaphyllis. *Ger. prov.* 237. *t.* 10. (good).

C. pumila maritima. *Bauh. pin.* 153. *Mor. t.* 14. *f.* 7.

Lappula canaria ſ. C. marit. *Bauh. hiſt.* 3. 81.

Seeds with three-barbed prickles.

[6. Daucus lucidus.

Lin. ſyſt. 277. *ſuppl.* 179.

Leaves lucid, ſtem hairy, petioles even.

7. Daucus hiſpanicus.

Allion. pedem. n. 1382. *Gouan illuſt.* 9.

D. lucidus gummifer. *Bocc. muſ. t.* 20.

Seeds prickly, without any central barren flower, ſtem ſhining.

DESCRIPTIONS, &c.

1. The common Carrot, in its wild ſtate, has a ſlender, hard, whitiſh or browniſh fuſiform root. Stem upright, grooved, hiſpid, two feet high, with alternate branches, which are long (commonly from ſix or ſeven to nine or ten inches), have one leaf on them, except the primary or terminating one, which is naked, and have a ſingle umbel of flowers at top. Bottom and principal leaves ſheathing, tripinnate, the laſt pinnule toothed, and terminated by ſpinules, the nerves hiſpid. Univerſal involucre of the umbel pinnate, compoſed uſually of five, ſometimes only three long, linear leaflets; they are almoſt as long as the umbel, eight or ten in number and permanent: partial involucre, the outer trifid, longer than the umbellet, the inner ones ſimple. The univerſal umbel has ſometimes from thirty to forty unequal rays, the middle rays being very ſhort, the outer ones above an inch long: the partial umbel has fewer rays, but they alſo amount ſometimes to more than thirty, and are more equal than the others. The flowers are white, thoſe in the middle ſometimes tinged with purple; theſe are fertile, but thoſe in the circumference, which are irregular and larger than the others, are frequently either neuter or have piſtils only. The fruit is ſpheroidal, compoſed of two plano-convex ſeeds, on the back of which are four membranaceous narrow creſts, pectinated with linear-ſetaceous, innocuous, flexible teeth; and between theſe, three raiſed nerves, having very minute prickles on them along each ſide, bowing outwards: the belly is flat, or ſlightly concave, marked with obſcure longitudinal ſtreaks[u].

The wild Carrot is common in paſtures, on balks and headlands. It is a biennial plant, flowering from june to auguſt.

The umbel is at firſt a little convex, but becomes gradually flat, and then as the flowers are going off, more and more concave, till it forms a perfect baſin, in its ſeeding ſtate reſembling a bird's-neſt. It is then eaſily diſtinguiſhed from other umbellate plants, and has derived its common Engliſh name from this circumſtance. Others, it is ſaid, call it *Bee's-neſt*, and that name is recorded by Johnſon, in his edition of Gerarde's herbal.

Carrot ſeeds have been recommended as a powerful diuretic, and an infuſion of them has been found to give relief in fits of the gravel and ſtone.]

[u] Gærtner.

Mr. Miller informs us, that the ſhops are ſupplied with old ſeeds of the garden Carrot, inſtead of freſh ſeeds of the wild plant. [This is one of the many ways by which efficacious medicines are brought into diſrepute; but if wild Carrot ſeeds be really valuable in calculous caſes, they may eaſily be gathered freſh by every one for himſelf.

Moles are ſo fond of the roots, that they are a proper bait to take theſe animals; but garden Carrots anſwer beſt for this purpoſe, as well as for deſtroying crickets, being made into a paſte with powdered Arſenic and Wheat meal; and for poultices to mitigate the pain, and abate the ſtench of foul and cancerous ulcers [b].

The ladies of this poliſhed age will ſmile at the ſimplicity of ancient times, when they are told, that the autumnal beauty of Carrot leaves allured many gentlewomen formerly, oftentimes to ſtick them in their hats or heads, or pin them on their arms inſtead of feathers [c].

Mr. Ray obſerved a variety of the wild Carrot on the ſea ſhore near Dover, with leaves of a dark green and gloſſy colour [d]. Dr. Stokes adds, that in a ſpecimen from the coaſt of Cornwall the leaflets are remarkably broad, and but ſlightly cut [e].

β, γ. The Garden Carrot is three feet high in its flowering ſtate; it differs however little from the wild one, except in the largeneſs and ſucculency of the plant, and particularly of the root, which with its ſuperior ſize uſually takes a tincture of yellow in different ſhades to deep orange, and becomes of a ſofter texture, without any of that acrimony and aromatic flavour which are found in the wild root. In Japan, where it is much cultivated, the root is of a colour very little inclined to yellow [f].]

Mr. Miller informs us, that he cultivated the wild carrot for many years, but could never get the ſeeds which were ſown in the ſpring to grow, but that part of the ſeeds which he ſowed in autumn came up well: theſe plants he treated in the ſame manner as the Garden Carrot, but could not improve the roots in the leaſt, for they continued to be ſmall, ſticky, and of a hot biting taſte. [In this and the like caſes he concludes, that the plants are ſpecifically different. This concluſion, however, is not to be admitted; for the improvement has probably been the effect of accident, or of time and care in a warmer climate; and the cultivated plants, if left to themſelves in a dry undunged ſoil, would probably relapſe into their primitive ſtate.]

Of Garden Carrots there are ſeveral varieties differing in the colour of their roots, as white, yellow, orange, and dark red or purple. Theſe variations may be continued, by taking care not to mix them together in the ſame garden. The Orange Carrot is generally moſt eſteemed in London. Mr. Miller takes the red or purple Carrot to be a diſtinct ſort: it is much more tender than the others, inſomuch that the roots were all deſtroyed by the firſt froſts in autumn. The ſeeds were ſent him from Aleppo. The roots were not ſo large as common Carrots, and were of a purple colour, very like that of a deep-coloured Radiſh; they were very tender and ſweet; the leaves were finer cut than thoſe of the common Carrot, and leſs hairy.

2. This has a channelled ſtalk near three feet high, terminated by large umbels. The ſegments of the lower leaves are cut into other obtuſe ſegments, and are of a deep green colour.

[It much reſembles the common Carrot. The whole ſtem is hiſpid. The involucre is ſhorter than the umbel, and quinquifid-pinnate: the involucels are three-toothed. The corolla is ſubradiate, with white petals, bent in and cloven [g]. In the centre there is a ſmall barren flower. The ſeeds are hiſpid [h].

It is a biennial plant; native of Italy, Spain, and Barbary; and was cultivated in 1768, by Mr. Miller. It flowers in june and july [i].]

3. This is an annual plant, with an upright, ſmooth, channelled ſtalk, three feet high. Leaves ſmooth, divided into many fine narrow ſegments, like thoſe of Fennel. The ſtalks branch towards the top, and each branch is terminated by a large umbel, compoſed of a great number of ſmall ones. The involucre is ſhorter than the umbel, and each of the leaves which compoſe it is trifid.

[The baſe of the umbel is a ſolid, roundiſh, common receptacle. Involucre, as it were one-leafed at the baſe, is, however, many-leaved, united with the receptacle, and has trifid leaflets. Involucels many-leaved, ſimple. Umbellules very numerous. Flowers equal, perfect. Petals bent in, two-lobed, white. Anthers purpliſh. Proper receptacles purpliſh-brown. Fruit tranſverſely compreſſed, oblong, ſtriated, even [k].]

The rays which ſuſtain the umbellules being long and ſtiff, are uſed by the Spaniards, &c. for picking their teeth. [When they have ſerved this purpoſe, they are chewed, and thus are ſuppoſed to be of ſervice in cleanſing and faſtening the gums; however this may be, they leave a pleaſant aromatic taſte in the mouth [l].

Native of the South of Europe, Barbary, and mount Libanus. It was cultivated in 1597 by Gerarde, and flowers from june to auguſt [m].]

4. This is an annual plant, with ſmoother ſtalks than the common Carrot; the ſegments of the leaves are broader, and of a lucid green; the umbels are larger, and not ſo regular.

[Native of the South of France. Cultivated in 1722, in the Chelſea garden. It flowers in june and july [n].]

5. This riſes with an upright ſtalk above two feet high. Leaves bipinnate, hairy. The ſtalk branches at top into ſeveral diviſions, each terminated by an umbel of white flowers: [they are radiated, and the ray is ſmall. Involucre with pinnate leaves: involucels with undivided leaves. Fruits five or ſeven. Seeds with compreſſed prickles in a triple row, and barbed at the end. Native of Barbary [o]. Cultivated here in 1699 [p].

β. The maritime variety is low and hirſute, with the ſtems almoſt leafleſs, and the germs hirſute [q].

Linneus, thinking that perhaps theſe differences might ariſe from ſoil and ſituation, has given it only as a variety. Gouan, however, has ſhown it to be very different; and Krocker deſcribes it as very much reſembling the common Carrot, but ſmaller in the ſtem, leaves and involucres. The umbel is alſo ſmaller, and contracts as it advances to ripeneſs: the florets are not radiated, three or four of them are fertile, and the reſt are barren, and white in one umbel: the ſeeds have four longitudinal creſts, very much toothed; before they are ripe they are beſet with red barbs. He doubts, however, whether it may not be a variety of the common Carrot. It is annual, and flowers in july and auguſt.

Gærtner has no doubt but that it ought to be removed from this genus into that of Caucalis.

Native of the South of France, on the coaſt of the Mediterranean.

6. This has the ſtature of common Carrot; but the ſtem has ſtiffer ſtrigas on it, and is not merely rugged. The leaves are groſſer, even and ſhining, as are alſo the petioles. It is biennial, and a native of Barbary [r].

7. The whole ſtem is rough with hairs. Leaves from a green ſheath not emarginate. Branches rough. Stem three feet high, with alternate branches, and an umbel terminating it. Leaves lucid, flat above, roughiſh underneath: leaflets pinnatifid, with two or three pairs of awned ſegments. Umbellets equal. Leaves of the univerſal involucre

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[b] Withering.
[c] Park. parad. 508.
[d] Ray ſyn. 218. n. 3.
[e] Withering.
[f] Thunb. trav. vol. 4.
[g] Linn. mant.
[h] Poiret.

[i] Hort. kew.
[k] Linn. mant.
[l] Poiret.
[m] Hort. kew.
[n] Ibid.
[o] Linn. mant.
[p] Hort. kew. from Mor.
[q] Linn. mant.
[r] Linn. ſuppl.

twice trifid, with a flat membranaceous petiole; partial deeply trifid. Seeds as in the common ſort, but larger. It is a biennial plant, and a native of the county of Nice[*].]

PROPAGATION AND CULTURE.

In the Garden.

1. The Carrot is commonly cultivated in gardens for the kitchen, and the different varieties of it are, in ſome places, eſteemed, though in London, the Orange Carrot is preferred to all the other.

They are propagated at two or three different ſeaſons, or ſometimes oftener, where people are fond of young Carrots. The firſt ſeaſon for ſowing the ſeeds is ſoon after Chriſtmas, if the weather be open; this ſhould be in warm borders, near walls, pales, or hedges, but they ſhould not be ſown immediately cloſe thereto; but a border of Lettuce, or other young ſallad herbs, of about a foot wide, ſhould be next the wall, &c.; for if the Carrots were ſown cloſe to the wall, they would draw up weak, without making any tolerable roots.

Theſe delight in a warm ſandy ſoil, which is light, and ſhould be dug pretty deep, that the roots may the better run down; for if they meet with any obſtruction, they are very apt to grow forked, and ſhoot out lateral roots, eſpecially where the ground is too much dunged the ſame year that the ſeeds are ſown, which will alſo occaſion their being worm-eaten; it is therefore the better method to dung the ground intended for Carrots the year before they are ſown, that it may be conſumed, and mixed with the earth; but in ſuch places where there has not been ground ſo prepared the year before, and there may be a neceſſity for dunging it the ſame year as the Carrots are ſown, the dung ſhould be well rotted which is laid upon it, and ſhould be thinly ſpread over the ground; and in the digging of it into the ground, great care ſhould be taken to diſperſe it all through the ground, and not to bury it in heaps, for that will ſtop the roots of the Carrots in their downright growth, and cauſe them to be ſhort and forky. Where the ground is inclinable to bind, there cannot be too much care taken to break and divide the parts; therefore in digging the land for Carrots, there ſhould never be large ſpits taken, but they muſt be very thin, and the clods well broken; which, if not attended to by the maſter, is ſeldom properly performed by workmen, who are too apt to hurry over their work, if they are not well obſerved.

The ground when dug ſhould be laid level and even, otherwiſe when the ſeeds are ſown and the ground is raked over, part of the ſeeds will be buried too deep, and others will be in danger of being drawn up into heaps; ſo the plants will come up in bunches, and other parts of the ground be naked, which ſhould always be carefully avoided.

The ſeeds have a great quantity of ſmall forked hairs upon their borders, by which they cloſely adhere, ſo that they are difficult to ſow even, ſo as not to come up in patches; they ſhould therefore be rubbed well through both hands, whereby the ſeed will be ſeparated before it is ſown; then a calm day ſhould be choſen to ſow it in; for if the wind blows, it will be impoſſible to ſow it equal, for the ſeeds being very light, will be blown into heaps. When the ſeed is ſown, the ground ſhould be trod pretty cloſe with the feet, that it may be buried, and then the ground muſt be raked level.

When the plants are come up, and have got four leaves, the ground ſhould be hoed with a ſmall hoe about three inches wide, cutting down all young weeds, and ſeparating the plants to four inches diſtance each way, that they may get ſtrength; and in about a month or five weeks after, when the weeds begin to grow again, the ground ſhould be hoed over a ſecond time, in which you ſhould be careful not to leave two Carrots cloſe to each other, as alſo to ſeparate them to a greater diſtance, cutting down all weeds, and ſlightly ſtirring the ſurface of the ground in every place, the better to prevent young weeds from ſpringing, as alſo to facilitate the growth of the young Carrots.

In about a month or five weeks after, they muſt be hoed a third time, when you muſt clear the weeds as before; and now the Carrots ſhould be cut out to the diſtance they are to remain, which muſt be proportioned to the ſize you intend to have them grow. If they are to be drawn while young, five or ſix inches aſunder will be ſufficient, but if they are to grow large before they are pulled up, they ſhould be left eight or ten inches diſtant every way; you muſt alſo keep them clear from weeds, which, if ſuffered to grow amongſt the Carrots, will greatly prejudice them.

The ſecond ſeaſon for ſowing theſe ſeeds is in february, on warm banks, ſituated near the ſhelter of a wall, pale, or hedge; but thoſe which are intended for the open large quarters, ſhould not be ſown before the beginning of march, nor ſhould you ſow any later than the end of the ſame month; for thoſe which are ſown in april or may, will run up to ſeed before their roots have any bulk, eſpecially if the weather ſhould prove hot and dry.

In july you may ſow again for an autumnal crop; and at the end of auguſt you may ſow ſome to ſtand the winter; by which method you will have early Carrots in march, before the ſpring ſowing will be fit to draw; but theſe are ſeldom ſo well taſted, and are often very tough and ſticky. However, as young Carrots are generally expected early in the ſpring, moſt people ſow ſome at this ſeaſon; but theſe ſhould be ſown upon warm borders and dry land, otherwiſe they are ſeldom good. If the winter ſhould prove very ſevere, it will be proper to cover the young Carrots with Peaſe-haulm, the haulm of Aſparagus, or ſome ſuch light covering, to prevent the froſt from penetrating into the ground, which often deſtroys the Carrots, where this care is wanting: but if in very hard winters the Carrots ſhould be all deſtroyed which were ſown in autumn, there ſhould be a hot-bed made early in the ſpring to ſow ſome, which will be fit for uſe long before any that are ſown in the full ground; but theſe beds ſhould be earthed fifteen or ſixteen inches deep, that the roots may have a proper depth of ſoil to run down. If theſe beds are lined with hot dung twice, at ſuch times when the heat of the beds decline, it will greatly forward the growth of the Carrots, but there ſhould be great care taken not to draw the plants up too weak; theſe may be allowed to grow cloſer together than thoſe ſown in the full ground, becauſe they will be drawn for uſe very young. Many people mix ſeveral other ſorts of ſeeds, as Leek, Onion, Parſnep, Radiſh, &c. amongſt their Carrots; and others plant Beans, &c. but, in my opinion, neither of theſe methods are good; for, if there is a full crop of any one of theſe plants, there can be no room for any thing elſe amongſt them, ſo that what is got by one is loſt by another; and beſides, it is not only more ſightly, but better, for the plants of each kind to be ſown ſeparate; and alſo by this means your ground will be clear, when the crop is gone, to ſow or plant any thing elſe; but when three or four kinds are mixed together, the ground is ſeldom at liberty before the ſucceeding ſpring: beſides, where Beans, or any other tall-growing plants are planted amongſt the Carrots, they are apt to make them grow more in top than root; ſo that they will not be half ſo large as if ſown ſingly, without any other plants amongſt them.

The covetouſneſs of ſome gardeners will not permit them to cut out their Carrots to a proper diſtance when they hoe them, ſo that by leaving them cloſe, they draw each other up weak: and if they are drawn while young, they never recover their ſtrength afterward ſo perfectly, as to grow near the ſize of thoſe which are properly thinned at the firſt hoeing; therefore where the Carrots are deſigned to have large roots, they muſt never ſtand too cloſe, nor ſhould they have any other crop mixed with them.

[*] Allioni.

In the Field.

This root has been long cultivated in gardens for the table, but has not till of late years been cultivated in the fields for cattle, nor has it been practiſed as yet but in few parts of England; it is greatly to be wiſhed, that the culture of it was extended to every part of England, where the ſoil is proper for the purpoſe; for there is ſcarce any root yet known, which more deſerves it, being a very hearty good food for moſt ſorts of animals. One acre of Carrots, if well planted, will fatten a greater number of ſheep or bullocks, than three acres of Turneps, and the fleſh of theſe animals will be firmer and better taſted. Horſes are extremely fond of theſe roots, and for hogs there is not any better food. I have alſo known theſe roots cultivated for feeding of deer in parks, which has proved of excellent uſe in hard winters, when there has been a ſcarcity of other food; at which times great numbers of deer have periſhed for want, and thoſe which have eſcaped, have been ſo much reduced, as not to recover their fleſh the following ſummer; whereas, thoſe fed with Carrots have been kept in good condition all the winter, and upon the growth of the graſs in the ſpring, have been fat early in the ſeaſon, which is an advantage, where the graſs is generally backward in its growth.

There is alſo an advantage in the cultivation of this root beyond that of the Turnep, becauſe the crop is not ſo liable to fail; for as the Carrots are ſown in the ſpring, the plants generally come up well, and unleſs the months of june and july prove very bad, there is no danger of the crop ſucceeding; whereas Turneps are frequently deſtroyed by the flies at their firſt coming up, and in dry autumns they are attacked by caterpillars, which in a ſhort time devour whole fields, but Carrots are not attacked by theſe vermin: therefore every farmer who has a ſtock of cattle or ſheep, ſhould always have a ſupply of theſe roots, if he has land proper for the purpoſe, which muſt be light, and of a proper depth to admit of the roots running down.

In preparing the land for Carrots, if it has not been in tillage before, it ſhould be ploughed early in autumn, and then ploughed acroſs again before winter, laying it up in high ridges to mellow by the froſt; and if the ground is poor, there ſhould be ſome rotten dung ſpread over it in winter, which ſhould be ploughed in about the beginning of february; then in march, the ground ſhould be ploughed again to receive the ſeeds; in the doing of which, ſome farmers have two ploughs, one following the other in the ſame furrow, ſo that the ground is looſened a foot and a half deep. Others have men with ſpades following the plough in the furrows, turning up a ſpit of earth from the bottom, which they lay upon the top, levelling it ſmooth, and breaking the clods; the latter method is attended with a little more expence, but is much to be preferred to the firſt, becauſe in this way the clods are more broken, and the ſurface of the ground is laid much evener.

If the land has been in tillage before, it will require but three ploughings; the firſt juſt before winter, when it ſhould be laid in high ridges for the reaſons before given; the ſecond croſs ploughing ſhould be in february, after which, if it is well harrowed to break the clods, it will be of great ſervice; the laſt time muſt be in march to receive the ſeeds; this ſhould be performed in the manner before mentioned. After this third ploughing, if there remain great clods of earth unbroken, it will be proper to harrow it well before the ſeeds are ſown. One pound and a half of ſeeds will be ſufficient for an acre of land; but as they are apt to adhere together, it renders them more difficult to ſow even than moſt other ſorts; therefore ſome mix a quantity of dry ſand with their ſeeds, rubbing them well together, ſo as to ſeparate the Carrot ſeeds from each other, which is a good method. After the ſeeds are ſown, they muſt be gently harrowed in to bury them; and when the plants come up, they ſhould be hoed in the manner before directed.

In order to preſerve Carrots for uſe all the winter and ſpring, they ſhould be dug up about the beginning of november, when the green leaves are decayed, and laid in ſand in a dry place, where the froſt cannot come to them.

If any are to be ſaved for ſeed, reſerve ſome of the longeſt and ſtraighteſt roots; plant them the middle of february in a light ſoil, about a foot aſunder each way; and about the middle of auguſt, when the ſeeds are ripe, cut off the ſtalks, expoſe them to the ſun and air for ſeveral days in a dry place, beat out the ſeeds, put it up in bags, and keep it in a dry place until you uſe it. This ſeed is ſeldom eſteemed good after the firſt or ſecond year at moſt; but new ſeed is always preferred, nor will it grow when it is more than two years old.

[The field culture of Carrots is beſt carried on in a tract of Suffolk, called from the nature of its ſoil the *Sandlings*; it is a triangle with Woodbridge, Bawdſey cliff and Orford at the three angles. They ſow five pounds of ſeed to the acre on a double furrow about fourteen inches deep. The time of ſowing is about Lady-day; and they begin to hoe at Whitſuntide. They give three hoeings in all, which coſt from fifteen to eighteen ſhillings an acre, ſometimes more. Ten loads, of forty buſhels each, topped clean, on an acre, in good land, is reckoned to be a middling crop. They feed with them from before Chriſtmas, and continue ſometimes till Whitſuntide: taking them up and houſing them in the latter part of the ſeaſon, to have the land clear for barley ſowing [t].

The time of ſowing among the Sandy field gardeners is the firſt week in march; others ſow in the middle, and others again at the end of march: but the time muſt be regulated in ſome meaſure by the ſeaſon, and the convenience of the farmer. The time of ſowing is by ſome extended from the beginning of february to the end of april, but this is too wide a range, if it can be avoided. New ſeed will come up a week ſooner than that which is old; and the crop depends very much upon having good ſeed. Mr. Miller recommends only a pound and half of ſeed to be ſown on an acre; but this is certainly too little. On the Sandlings we have ſeen that they have ſown five pounds; others ſow eight, ten, and even twelve pounds, which is in general waſting ſeed.

The common rule for the firſt hoeing is ſeven weeks after the ſeed is ſown, or in general the beginning or middle of may; the ſecond the middle of june; ſomewhat ſooner or later, according to the ſtate of the crop.

The uſual produce on poor lands is 200, and on good land 400 buſhels. We have had accounts of 250, 300, 312, 326, 340, 352, 368, 400, 460, 482, and even 640 and 700 buſhels produced from an acre; but let the huſbandman always beware of calculating on great crops, which are commonly produced on a ſmall ſcale, or on very rich land, or by extraordinary tillage and manuring, or by ſome unforeſeen fortunate circumſtances.

For preſerving Carrots during winter ſeveral methods are preſcribed. Soon after michaelmas, in dry weather, they may be taken up with a common dung-fork, and piled up or ſtacked in a corner of the field, in the following manner. Lay a platform of earth ſix inches above the level, two feet and a half wide, and of a length proportioned to the quantity of the crop, ſuppoſe from ten to twenty yards. On this earth ſcatter a ſlight layer of ſtraw. On this place a row of carrots, with their tops on and turned outwards; the tails lapping over one another, ſo that the width covered with carrots is about two feet. Top the ſmall roots, and lay them in the middle croſswiſe, to keep the two ſides from parting, by preſſing the weight more on the centre. On every two or three rows ſcatter a little ſtraw, and thus continue to build up about four feet high:

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[t] Young's ann. 2. 123.

then cover the tops carefully with dry ſtraw, and lay ſome ſedge or other coarſe material over all, by way of thatch. Then begin another line, parallel to the firſt, juſt leaving room to paſs between them; and ſo continue till the whole crop is taken up. Fill the alleys with dry ſtraw, and guard the outſide with bundles of ſtraw ſtaked down, or ſet faſt with hurdles, to prevent the wind from removing the ſtraw and covering[u].

Others, having taken them up in dry days in october, put them directly into ſmall upright cocks of ten buſhels each, entirely covered, with the tops cut off; and being thus dried, carry them into a barn or ſhed, throwing ſome ſtraw over them, but taking care not to pack them too cloſe[x].

Or they may be left in the cocks, well covered over with ſtraw or fern till they are quite dry, and then protected with earth, beat ſmooth with a ſpade[y]. Some twiſt off the tops with the hand; and others take off half an inch of the roots to prevent them from ſprouting: but theſe attentions can only be beſtowed on ſmall crops.

If they are barrelled up with very dry ſand, after being previouſly well dried, they may be preſerved a conſiderable time at ſea.

In the Sandlings the practice is to take up the Carrots as they are wanted, only keeping a ſtore beforehand in caſe of froſt: thus, however, in ſome years many rot on the ground[z].

Long experience has now confirmed what Mr. Miller aſſerts, that Carrots are a hearty food for ſheep, cattle, horſes, hogs and deer, particularly for horſes; they may alſo be applied to feeding hounds and pointers when boiled, and mixed with milk and barley meal.

Carrots are alſo an excellent preparation for barley, in ſands and ſandy loams, that are not foul with quich or ſpear-graſs; for in ſuch lands the hoeing for Carrots increaſes rather than deſtroys the quich, by hacking it in pieces. No crop can be better for ſuch lands, when clean, than Carrots; becauſe it admits no ſummer ploughing whatever, and it is put in on one earth given with a trench-plough in march; ſo that as much tenacity is given to theſe naturally looſe ſoils as poſſible. The crop may be left late in the ground, and if the ſoil be very ſandy, a crop of buck-wheat may follow, for which any degree of cleaning from quich may be given, if neceſſary[a].

Mr. Miller's directions for ploughing are ſuitable to ſtiff land, which is not ſuitable to Carrots.

A very good ſpirit may alſo be diſtilled from Carrots; and the refuſe will be excellent for feeding hogs. One ton eight ſtone, after being expoſed a few days to dry, weighed 160 ſtone, and meaſured forty-two buſhels. After being waſhed, topped and tailed, they loſt in weight eleven ſtone, in meaſure ſeven buſhels. From this quantity fifty gallons were drawn off; theſe were rectified, and twelve gallons of unexceptionable ſpirit were obtained. The refuſe weighed forty-eight ſtone, and the waſh from the ſtill meaſured 112 gallons. So that the refuſe greatly exceeds that of an acre of barley. And an acre of Carrots, allowing the produce to be twenty tons, will produce 240 gallons of ſpirit; which is conſiderably more than can be obtained from five quarters of barley[b]. But the produce of an acre ought not to be laid at more than from ten to fourteen tons[c]; and therefore the quantity of ſpirit from an acre of Carrots will not exceed 168 gallons.

Carrots have ſome advantages over Turneps, beſides the principal one already mentioned of their being better adapted to the ſort of ſoil which beſt ſuits them both. For they are leſs liable to be damaged by froſt; they are not ſubject to the ſame diſtempers and accidents; and they laſt till april, the ſeaſon of great difficulty, when farmers frequently know not what to provide for their ſtock; eſpecially ſheep[d]. Being alſo a ſpring crop, if the plant miſſes, the ſeed only is loſt, and the land is in perfect order for turneps at midſummer: or if it be only a ſcattered plant, the intervals may be filled by ſowing turneps, or planting cabbages[e].

Carrot ſeed has been for many years raiſed at Wethersfield in Eſſex, perhaps becauſe it poſſeſſes two ſoils beſt adapted to this culture; rich ſand to raiſe the carrots the firſt year, and ſtrong loam for the year of ſeeding. The preparation of the ſoil conſiſts in making it very fine by repeated ploughings and harrowings, uſually three or four earths are given; and the ſeed, twenty pounds an acre, apparently an unneceſſary quantity, ſown in april. They hand-hoe twice, ſetting the plants out ſeven inches aſunder. At michaelmas they dig up, cut off the tops to the length of an inch, and pack up the roots in barns with ſtraw, taking care that they are dry enough when laid up: ſecuring them is a work of ſome difficulty, for air muſt have acceſs to them, and yet froſt muſt be excluded. The crops are large; a good produce is three buſhels on a rod, but four have been known. For re-planting in the ſpring, they chooſe a piece of freſh land, if there be any on the farm; if not, ſuch as is in good heart, but they never manure it. The preparation is to throw two three feet ridges together; in a dry ſeaſon, in february or march, they cut the tap end of the carrots off, to the amount of one third of the root, and plant a double row upon each ridge at three feet between the plants, and two feet row from row, in a quincunx order, ſo that the plants of one row may be againſt the ſpaces of the other. They are twice hoed, and twice earthed up, the ſecond time very high. The heads are cut off when quite dry, as they ripen, by women, and being laid on pack cloths, are threſhed and dreſſed by men[f].

Carrots may be cultivated with ſucceſs in young plantations of trees, where the ſoil is proper for them. In taking up the carrots, leſs damage is done to the young fibres of the trees than by digging between them, all the good effects of ſtirring the ground are produced, and a profitable crop is gained[g].

Mr. Miller affirms that this root has not till of late years been cultivated in the fields for cattle. It appears from Norden's Surveyor's Dialogue, publiſhed in 1600, that carrots were commonly cultivated about Orford in Suffolk, and about Norwich in Norfolk[h]. They were alſo introduced very early from Flanders into Kent, about Sandwich, and other places. Gerarde, in 1597, ſays that they were ſown in the fields. Neither of theſe authors, however, mentions that they were uſed for feeding cattle: they were probably cultivated chiefly for the London market. Worlidge and Mortimer ſay, that they are good for hogs and geeſe.

2, 3, &c. Of the other ſorts of Daucus it is enough to ſay, that] the ſeeds ſhould be ſown in autumn, for thoſe which are ſown in the ſpring frequently fail, or at leaſt remain in the ground till next year before they grow; the plants require no other culture but to keep them clean from weeds, and to thin them where they are too cloſe.

[Daucus. See *Æthuſa*, *Ammi*, *Athamanta*, *Caucalis*, *Peucedanum*, *Phellandrium*, *Pimpinella*, *Seſeli*, *Siſon*, *Sium*.

D'Ayenia. See *Ayenia*.]

Day-Lily. See *Hemerocallis*.

[Deadly Carrot. See *Thapſia*.

Deadly Nightshade. See *Atropa*.

Dead-Nettle. See *Galeopſis*, and *Lamium*.

Decaspermum. See *Pſidium*.

DECUMARIA.

Lin. gen. n. 597. *Reich.* 652. *Schreb.* 815. *Fabric. Willich. Juſſ.* 324.

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[u] Young's ann. 11. 328.

[x] Bath papers, 5. 237.

[y] Farmer's magaz. 1. 259.

[z] Young's ann. 2. 126.

[a] Young in Bath papers, 2. p. 1.

[b] Hornby in Young's ann. 9. 168.

[c] Young, ibid. 170.

[d] Young in Bath papers, 2. p. 8.

[e] Onley in Young's ann. 3. 222.

[f] Young's ann. 18. 407.

[g] Ibid. 15. 362.

[h] Young in Bath papers, 2. 2.

Claſſ. 11. 1. { Dodecandria Monogynia.
Polyandria Monogynia. *Hort. kew.*

Nat. order of *Myrti.* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* ſuperior, with about ten leaves, very ſmall: *leaflets* ovate, coloured, acute, reflex. (8—12.)

COR. *Petals* ten, lanceolate, obtuſe, equal, diſpoſed in a ſimple circle, expanding. (8—12)

STAM. *Filaments* from ſixteen to twenty-five, filiform, length of the corolla. *Anthers* twin, depreſſed.

PIST. *Germ* top-ſhaped, inferior. *Style* cylindric; ſhorter than the corolla. *Stigma* gibboſe, lobed with about ten little ſwellings.

PER. *Capſule* eight-celled, many-ſeeded.

SEEDS ſolitary?

OBS. *This is an obſcure genus, the fruit being unknown to this day. May it not prove to be dioecous?*

ESSENTIAL CHARACTER.

Cal. eight to twelve-leaved, ſuperior. *Pet.* eight to twelve. *Capſ.* eight-celled, with many ſeeds.

SPECIES.

1. Decumaria barbara. *Climbing Decumaria.*
Lin. ſpec. 1663. *ſyſt.* 443. *Reich.* 2. 417. *mant.* 391. *Willich. obſ.* 75.
Forſythia ſcandens. *Walter. carol.* 154.
Cluſia fol. venoſis. *Fabric. helmſt.* 2. 293.

DESCRIPTION, &c.

A tree with irregular branches, rooting by knotty joints. Leaves oppoſite, petioled, oppoſite, leathery, veined, towards the baſe remotely ſerrate. No ſtipules. Buds pubeſcent. Panicle corymbed, terminating. Flowers like thoſe of the Lime-tree, whitiſh, and very ſweet ſcented[i].

Native of Carolina. Where it was obſerved by Mr. Walter, who ſuppoſing it to be a new plant, named it *Forſythia*, in honour of Mr. William Forſyth, Mr. Miller's ſucceſſor in the cultivation of the Botanic garden at Chelſea, and ſince Gardener to his Majeſty at Kenſington.—Introduced 1785, by Baron Hake[k].

DELIMA. (*From Lima, a file; the leaves being uſed for poliſhing.*)
Lin. gen. n. 672. *Reich.* 721. *Schreb.* 905. *Juſſ.* 339. *Gærtn. t.* 106.
Claſſ. 12. 1. Polyandria Monogynia.
Nat. order of *Roſaceæ.* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved: *leaflets* ovate, obtuſe, equal, permanent.

COR. none.

STAM. *Filaments* numerous, capillary, nearly equal to the calyx. *Anthers* roundiſh.

PIST. *Germ* ſuperior, ſomewhat ovate. *Style* cylindric, length of the flower. *Stigma* ſimple, permanent.

PER. *Berry* larger than the calyx, ovate, acuminate, two-valved. (Capſule coriaceous, one-celled. *G.*)

SEEDS two, (arilled. *G.*)

OBS. *Rheede makes his plant pentandrous; it is therefore doubtful.*

ESSENTIAL CHARACTER.

Cal. five-leaved. *Cor.* none. *Berry* with two ſeeds.

SPECIES.

1. Delima ſarmentoſa.
Lin. ſpec. 736. *ſyſt.* 494. *Reich.* 2. 587. *fl. zeyl. n.* 205. *amæn. t.* 403. *Gærtn. fruct.* 2. 112. *Rheed. mal.* 7. *t.* 34. (Peripu.) *Burm. ind. t.* 35. *f.* 1.

DESCRIPTION, &c.

A tree, with ſcabrous leaves, reſembling thoſe of Beech. Flowers peduncled, looſely panicled, both axillary and terminating[l]. Fruit a coriaceous, ſwelling capſule, ending in an incurved beak, very ſmooth, of a yellow bay colour, opening on one ſide only by a longitudinal cleft. Seeds two, globular, crooked next the baſe, berried, red, becoming blackiſh when ripe, fixed to the bottom of the capſule; their aril is incomplete, ſpongy-membranaceous, ſnow-white, torn at the edge, ſcarcely covering the lower half of the ſeed[m].

The leaves being very thick and rugged, are uſed by the inhabitants of Ceylon, where it grows naturally, in poliſhing. Hence they name it *Koroſwael* or *Koroſſawael*, from *Koroſſa*, to ſmooth or poliſh[n].]

DELPHINIUM. (Δελφινιον *Dioſcor. from a fancied reſemblance of the flower, before it opens, to a dolphin.—Conſolida, from its conſolidating qualities,*)
Lin. gen. n. 681. *Reich.* 736. *Schreb.* 927. *Tourn.* 241. *Gærtn. t.* 65. *Juſſ.* 234.
Claſſ. 12. 3. Polyandria Trigynia.
Nat. order of *Multiſiliquæ.—Ranunculaceæ.* Juſſ.

GENERIC CHARACTER.

CAL. none.

COR. *Petals* five, unequal, diſpoſed in a circle; of which
α. the *uppermoſt* is more obtuſe than the reſt in front, and is extended behind into a tubular, ſtraight, long, obtuſe horn.
β. γ. δ. ε. the *reſt* ovate-lanceolate, ſpreading, nearly equal. *Nectary* two-cleft, ſeated in front within the circle of petals on the upper part, behind ſtretched out, involved within the tube of the petal α.

STAM. *Filaments* very many (fifteen or thirty), ſubulate, wider at the baſe, very ſmall, inclined towards the petal α. *Anthers* erect, ſmall.

PIST. *Germs* three or one, ovate, ending in ſtyles the length of the ſtamens. *Stigmas* ſimple, reflex.

PER. *Capſules* as many, ovate-ſubulate, ſtraight, one-valved; gaping inwards.

SEEDS very many, cornered.

OBS. *The firſt and ſecond ſpecies have three piſtils, and an inner nectary of one leaf.*
Several ſpecies have a two-leaved nectary, diſpoſed in the ſame form as in thoſe ſpecies which have a ſimple nectary.

ESSENTIAL CHARACTER.

Cal. none. *Petals* five. *Nectary* cloven, produced into a horn behind. *Siliques* three or one.

SPECIES.

* *Unicapſular.*

1. Delphinium Conſolida. *Branching Larkſpur.*
Lin. ſpec. 748. *Reich.* 2. 611. *hort. cliff.* 212. *fl. ſuec. n.* 475. *mat. med.* 138. *Hudſ. angl.* 235. *With.* 560. *Relh. cant. n.* 692. *Hall. helv. n.* 1203. *Scop. carn. n.* 651. *Pollich. pal. n.* 512. *Neck. gallob.* 233. *Krock. ſileſ. n.* 831. *Villars dauph.* 3. 702. *Fl. dan.* 683. *Blackw. t.* 26.
D. ſegetum. *Tourn. inſt.* 426. *Raii ſyn.* 273.—arvenſe. *Park. parad.* 277. *n.* 3. 279. *f.* 3.
Conſolida regalis. *Camer. epit.* 521. *Park. theat.* 1378. *f.* 2.—arvenſis. *Bauh. pin.* 142. *Raii hiſt.* 708.—fl. minore. *Bauh. hiſt.* 3. 210.—ſylveſtris. *Ger.* 923. 4. *emac.* 1083. 5. 1082. 1. *Fuchſ.* 27. *Lob. ic.* 1. 739. 2.
Nectaries one-leafed, ſtem ſubdivided.

2. Delphinium Ajacis. *Upright Larkſpur.*
Lin. ſpec. 748. *ſyſt.* 503. *Reich.* 2. 612. *hort. cliff.* 213. *upſ.* 150. *Hall. helv. n.* 1202. *Krock. ſileſ. n.* 832.
D. ſativum. *Rivin. pent. t.* 123.
α. Conſolida regalis hortenſis, fl. majore & ſimplici. *Bauh. pin.* 142. Mor.
Delphinium elatius fl. ſimplici diverſorum colorum. *Park. par.* 277. *n.* 4. *Raii hiſt.* 708.
β. C. reg. fl. maj. & multiplici. *Bauh. pin.* 142.
D. elat. fl. pleno diverſ. colorum. *Park. par.* 277. *n.* 5.
Nectaries one-leafed, ſtem ſimple.

[3. Delphinium Aconiti.
Lin. ſyſt. 503. *Reich.* 2. 612. *mant.* 77. *Vahl ſymb.* 1. 40. *t.* 13.
D. orientale annuum, fl. ſingulari. *Tournef. cor.* 30.
Nectaries one-leafed, with four teeth in front, branchlets one-flowered.]

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[i] Linn. mant.
[k] Hort. kew.
[l] Juſſieu.
[m] Gærtner.
[n] Burmann.

** *Tricapſular.*

4. Delphinium ambiguum, *Doubtful Larkſpur.*
Lin. ſpec. 749. *Reich.* 2. 613.
D. elatius, ſimplici flore. *Cluſ. hiſt.* 2. 206.
Conſolida regalis hortenſis, fl. minore. *Bauh. pin.* 142.
Nectaries one-leafed, corollas ſix-petalled, leaves many-parted.

5. Delphinium peregrinum. *Broad-leaved annual Larkſpur.*
Lin. ſpec. 749. *ſyſt.* 503. *hort. cliff.* 213. *Allion. pedem. n.* 1503. *t.* 25. *f.* 3.
Conſolida regalis latifolia, parvo flore. *Bauh. pin.* 142. *prodr. t.* 74. *f.* 1. *Mor. hiſt.* 3. 466. *ſ.* 12. *t.* 4. *f.* 3.
Nectaries two-leaved, corollas nine-petalled, leaves many-parted obtuſe.

6. Delphinium grandiflorum. *Great-flowered Larkſp.*
Lin. ſpec. 749. *Reich.* 2. 614. *hort. upſ.* 150. *Mill. fig. t.* 250. *f.* 1. *Gmel. ſib.* 4. *t.* 78.
Nectaries two-leaved, with entire lips; flowers uſually ſolitary; leaves compound linear-many-parted.

7. Delphinium intermedium. *Palmated Bee Larkſpur.*
Ait. hort. kew. 2. 243.
D. americanum. *Mill. dict. n.* 7. *fig. t.* 119.
D. elatum. *Mattuſch. ſileſ.* 132.
Nectaries two-leaved, with ovate cloven lips, and ovate diviſions; leaves three-parted, with trifid gaſhed diviſions.

8. Delphinium elatum. *Common Bee Larkſpur.*
Lin. ſpec. 749. *Reich.* 2. 614. *hort. upſ.* 151. *cliff.* 213. *Hall. helv. n.* 1201. *Gmel. ſib.* 4. 187. *t.* 75—80. *Gærtn. fruct.* 1. 311. *Villars dauph.* 3. 702.
Aconitum cæruleum hirſutum, fl. conſolidæ regalis. *Bauh. pin.* 183.—calcari magno. *Bauh. hiſt.* 3. 657.
β. A. lycoctonum, fl. delphinii ſileſiaci. *Cluſ. hiſt.* 2. 94. *Dodon. purg.* 315. *hiſt.* 441.
Nectaries two-leaved, with ovate emarginate lips, and very ſhort unequal diviſions; leaves ſubpeltate three-parted, with multifid diviſions.

9. Delphinium exaltatum. *American Larkſpur.*
Ait. hort. kew. 2. 244.
D. elatum. *Mill. dict. n.* 5. *fig. t.* 250. *f.* 2.
Nectaries two-leaved, with oblong cloven lips, and lanceolate equal diviſions; leaves three-parted, with trifid diviſions.

[10. Delphinium puniceum. *Scarlet-flowered Larkſp.*
Lin. ſyſt. 503. *ſuppl.* 267. *Pallas itin.* 3. 96. *Retz. obſ.* 5. 4.
Lips of the nectary two-parted hairy, horn ſtraight; leaves many-parted; no calycine bractes.]

11. Delphinium Staphiſagria. *Palmated L., Staveſacre,* or *Louſewort.*
Lin. ſpec. 750. *ſyſt.* 503. *Reich.* 2. 614. *mat. med.* 138. *hort. cliff.* 213. *upſ.* 150. *Scop. carn.* 2. *n.* 652. *Allion. pedem. n.* 1505. *Woodv. med. bot.* 417. *t.* 154.
Staphiſagria. *Bauh. pin.* 324. *Dod. pempt.* 366. *Blackw. t.* 265. *Bauh. hiſt.* 3. 641. *f.* 2. *Ger.* 398. *emac.* 495. *Park. theat.* 222. *f.* 223. *Raii hiſt.* 705. *Fuchſ.* 784.
Nectaries four-leaved ſhorter than the petal; leaves palmate with the lobes obtuſe.

DESCRIPTIONS, *&c.*

[Theſe are moſtly ſpecious hardy annuals or perennials. The lower leaves digitate or palmate; the upper leſs divided, and ſometimes even entire. The flowers are in looſe ſpikes or panicles at the ends of the ſtem and branches, of various colours, but chiefly blue; never yellow.

1. Root annual. Stalk upright, a foot high or more, round, pubeſcent, divided into alternate diverging branches. Leaves alternate, the lower on petioles near half an inch long, the upper ſeſſile or nearly ſo; they are divided down to the baſe into three or five parts, which are deeply cut into ſlender linear ſegments, often forked at the end. Peduncles one-flowered, from the ends of the ſtalk and branches, having on them a few entire, awl-ſhaped leaves. Corolla blue, varying to purple, pink, and white, and in gardens to ſtriped, and many different ſhades of colour: petals irregularly ſcalloped on the edge; the lateral ones broadeſt, the uppermoſt lanceolate, not blunter than the reſt, rather ſhorter than the nectary, but projecting backwards into a conical tube. Stamens about ſeventeen: anthers roundiſh, double. It has frequently two ſtyles, and ſometimes only one. Capſules or ſiliques yellowiſh-brown, ſmooth, with nine or ten black ſhining ſeeds in them, placed in a double row, and rough with ſhort hairs and very ſmall tubercles[a].

In Engliſh it is called Wild or Corn Lark's-ſpur, Lark's-claw, and Lark's-toes. In French, *Pied d'Allouette.* In German, *Ritterſporn.* In Daniſh and Swediſh, *Ridderſpore.* In Italian *Speronella.* In Spaniſh, *Eſpuela de caballero.*

It grows wild in corn fields in Sweden, Denmark, Germany, France, Switzerland, Carniola, Italy, and Spain. It was not obſerved in a wild ſtate in Britain by Gerarde; and his editor Johnſon (an° 1636) expreſly ſays, not with us, that I have yet obſerved. Parkinſon however, in his Paradiſus, publiſhed ſeven years ſooner, affirms, that the leſſer wild kind is found in ſome fields of our own country; but he does not ſay that he had ſeen it. James Sherard, M. D. obſerved it in Swaffham field in Cambridgeſhire. Profeſſor John Martyn found it there, and in other fields of the ſame county about the year 1730; and I have remarked it abundantly, not only with blue, but with pink, purple, and white flowers, in moſt of the open fields round Cambridge, ever ſince the year 1752.

The expreſſed juice of the petals, with the addition of a little alum, makes a good blue ink. The ſeeds are acrid and poiſonous[b].

2. The ſtalk of the upright or garden Larkſpur is eighteen inches and more in height, and ſeldom branched. Leaves finely divided, commonly by threes, on broad petioles; ſegments linear, quite entire, channelled above. Spike of flowers erect and more denſe than the preceding. Commonly only one capſule or ſilique[c]. This affords a great variety of colours, in the flowers, both ſingle and double, ſome very large and numerous in cloſe ſpikes, making a fine appearance from the end of june to auguſt.

The original country of this is unknown. It now comes up ſpontaneouſly in ſeveral parts of Europe, but probably from garden ſeeds. Linneus and others are of opinion that the Larkſpur is the Hyacinth of the poets. Profeſſor John Martyn however, after profoundly conſidering the matter, determines it to be the *Lilium Martagon*; and the learned Heyne acquieſces in his opinion. There does not appear to me to be the leaſt foundation for Linneus's notion.

3. Stature the ſame as in the firſt or fifth ſpecies, with corollas of Aconite. Stem a foot high, panicled, branching, hoary, pubeſcent. Leaves pedate-multifid, linear, becoming hoary; the upper ones only three-parted. Flowers terminating, ſolitary, peduncled, ſmall, livid, variegated within with purple and green. Outer nectary tubular, longer than the petals, very obtuſe at the end, elongated at the baſe, ſo that the anterior horizontal lip is placed in the middle. The inner nectary embraces the ſtamens on both ſides with an obtuſe lobe, but in front and above it has four teeth nearly equal and marked on the edge with a purpliſh line: the tip is very obtuſe and thick, and is bent back with a contracted neck; the four lower petals are ovate-lanceolate, equal, greeniſh but purpliſh on the ſides. Stamens the length of the petals, purpliſh.

Native of the Dardanelles. Annual[d].

4. Stature of the ſecond ſort, but more hoary. Branches divaricating in a ſimple ſtem. Corollas blue with a green outſide. Nectary cloven with acutiſh lobes; ſpur having frequently two teeth at the tip.—It differs from the monogynous ſpecies in

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[a] Pollich, Withering, Relhan. [b] Withering. [c] Haller. [d] Linn. mant.

the number of the capſules; from the trigynous ſpecies in having the inner nectary one-leafed, or the inner ſpur not two-parted; therefore theſe cannot be ſeparated from the genus of Staphiſagria. The piſtils are either one or three in the ſame plant, ſo that the number of theſe is hardly conſtant.—Native of Barbary[e].]

Stalk three feet high or more and very branching; the branches come out horizontally at firſt, but afterwards turn up ſo as to make an acute angle with the ſtalk; the leaves are long and finely divided: the flowers are placed thinner in the ſpikes than thoſe of the upright ſort, are large, and ſome of them very double and of various colours. This comes later to flower than the upright Larkſpur.

5. This has a very branching ſtalk, about two feet high. The lower leaves are divided into many broad obtuſe ſegments, but thoſe which are upon the ſtalks are generally ſingle; the flowers grow ſcatteringly towards the upper part of the branches, are ſmall, and of a deep blue colour; they are ſucceeded by very ſmall ſeed-veſſels, which are ſingle or double, rarely three together.

[Stem ſimple, with wand-like, naked, ſtiff branches. Leaves like thoſe of the ſecond ſort. Bractes ſubulate. The corolla, beſides the nectaries or four lower petals, has two roundiſh lateral petals, fixed by long claws, and bent down towards the outer or loweſt petals and lying on them. The nectaries have no deflex lips[f].

Native of the South of Europe and the Levant. Cultivated in 1731, by Mr. Miller[g],] who had the ſeeds from Gibraltar.

6. This has a perennial root, which puts out two or three branching ſtalks every ſpring, which riſe about a foot and a half high. Leaves ſmooth and of a light green colour above, and hoary beneath, compoſed of many narrow ſegments, which terminate in ſeveral acute points. The flowers come out towards the upper part of the ſtalks ſingly, each on a long naked peduncle; they are large, and of a fine azure colour. They appear in june and july, and the ſeeds ripen in autumn.

[Capſules hoary[h].—Native of Siberia. Cultivated in 1758, by Mr. Miller[i],] who had the ſeeds from Dr. Ammann, of Peterſburgh.

7. [Root perennial, with annual ſtems growing to the height of ſix or ſeven feet. Leaves broad, divided into five or ſeven parts, cut into many narrow ſegments towards the top, they are alternate from the joints on long footſtalks, ſo that they hang down. Flowers in long ſpikes at the extremities of the ſtalks. Corollas of a fine blue colour[k].

Mr. Miller had firſt ſet this down as an American plant. Afterwards he informs us that the ſeeds were ſent him from Peterſburgh by the late Dr. Ammann: he therefore ſuppoſes it to be a native of Siberia or Tartary: it turns out however to be a native of Sileſia. It ſeems to be the variety of *D. elatum* mentioned by Krocker.

Cultivated 1756, by Mr. Miller[l].

8. Height of a man. Root perennial. Leaves ſlightly villoſe, becoming ſmooth by age, half-five-lobed, petioled; lobes acute, often half-three-lobed, ſharply ſerrate. Spike of flowers very long and handſome; peduncles one-flowered, lanuginoſe; corollas deep blue, with a wrinkled ſpur[m].

Native of Switzerland and Siberia. Cultivated 1656, by Mr. John Tradeſcant, junior. Flowers from june to ſeptember[n].

9. Root perennial. Stem upright, five or ſix feet high, branching. Lower leaves large, divided into three lobes to the petiole, and theſe cut on their borders into acute ſegments: they are a little hairy, and of a grayiſh colour, ſtanding upon pretty long petioles. Stem-leaves ſmaller, and not ſo deeply divided. The principal ſtalk is terminated by a long looſe ſpike of flowers, which is often a foot and a half long. The ſmall ſide-branches, which grow erect, have ſmaller ſpikes. The flowers are not much larger than thoſe of the common Larkſpur, and are of a pale blue colour. The bearded nectary has, at firſt ſight, the appearance of a large fly in the tube of the flower.—It flowers at the end of june, or beginning of july, and in cool ſeaſons there is frequently a ſucceſſion of flowers till the end of auguſt. The ſeeds were ſent to Mr. Miller by Mr. John Bartram (about 1758) from Philadelphia; but it grows naturally in moſt parts of North America, where it occaſions great diſorders in the cattle that feed upon the leaves[o].

This approaches very near to D. urceolatum, *Jacqu. ic. collect.* 1. 153. but it differs in having the leaves ſmooth and flat; the ſtem ſmooth and purple[p].

10. This differs from all the other ſorts in the duſky red colour of the flowers as in *Veratrum nigrum.*—It is very like *D. elatum* in every thing, except that the ſtem, petioles and peduncles are puþeſcent, the petals equal, the whole corolla more regular, the lips deeply parted and ſtraight, the horn ſtraight, even, and the length of the pedicels; no ſubulate bracte on each ſide the baſe of the corolla[q].

It is a perennial plant[r].—Found in Siberia, by Pallas. Introduced 1785, by William Pitcairn, M. D.[s]]

11. This is an annual plant, riſing with a ſtrong hairy ſtalk about two feet high. Leaves hairy, compoſed of five or ſeven oblong lobes, which have frequently one or two acute indentures on their ſides. The flowers form a looſe ſpike at the upper part of the ſtalk, each on a ſhort peduncle. They are of a pale blue or purple colour.

[Linneus obſerves, that the lobes of the leaves are trifid. Horn of the nectary very ſhort and obtuſe.

A variety with leaves veined with white, differs in having the leaf gaſhed, ſeven-parted, the diviſions acuminate, the horn or ſpur of the corolla not obſcure, but the length of the pedicel[t].

Native of the South of Europe. Cultivated in 1596, by Gerarde. It flowers from april to auguſt; and is biennial[u].]

The common people uſe the powder of the ſeed to kill lice, whence it is named Louſewort.

PROPAGATION AND CULTURE.

1—5. The annual ſorts are propagated by ſeeds, which ſhould be ſown where the plants are deſigned to remain, for they do not bear tranſplanting well, eſpecially if they are not removed very young; thoſe ſeeds which are ſown in autumn, produce the ſtrongeſt plants and moſt double flowers, and ripen their ſeeds better than thoſe which are ſown in the ſpring, as they come earlier to flower; but to continue a ſucceſſion of theſe flowers, there ſhould be ſome ſeeds ſown in the ſpring. When they are ſown on the borders of the flower-garden for ornament, they ſhould be in patches of about a foot diameter, in the middle of the borders at proper diſtances; in each of theſe patches may be ſcattered ten or a dozen ſeeds, covering them over about a quarter of an inch with earth; and in the ſpring the plants may be thinned, leaving about five or ſix of the upright ſort in each patch to ſtand for flowering; but of the branching ſort, not more than three or four, becauſe theſe require room; after this the plants will require no farther care but to keep them clean from weeds, and when they begin to flower ſhould be ſupported by flower-ſticks to prevent their being broken by wind, eſpecially if they are not in a ſheltered ſituation. If the ſeeds were well choſen, there will be very few ordinary flowers among them; and if there are ſeeds of the different coloured flowers ſown in each patch, they will make a pleaſing variety: but the upright ſort ſhould never be mixed in the ſame patches with the branching, becauſe they do not flower at the ſame time.

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[e] Linn. ſpec.
[f] Ibid.
[g] Hort. kew.
[h] Linn. ſpec.
[i] Hort. kew.
[k] Mill. fig.
[l] Hort. kew.
[m] Haller.
[n] Hort. kew.
[o] Miller's figures.
[p] Hort. kew.
[q] Linn. ſuppl.
[r] Retz.
[s] Hort. kew.
[t] Linn. ſyſt.
[u] Hort. kew.

But in order to preſerve the two ſorts fine without degenerating to ſingle or bad colours, there ſhould be a bed of each ſort ſown in autumn, in ſome ſeparate part of the garden, where the plants ſhould be properly thinned, and kept clean from weeds, till they begin to ſhew their flowers; when they ſhould be carefully looked over every other day, to pull out all thoſe plants, whoſe flowers are not very double nor of good colours; for if theſe are permitted to ſtand among the others till their farina has impregnated them, it will certainly cauſe them to degenerate; ſo that thoſe perſons who are contented with only marking their good flowers for ſeed, and ſuffer the others to ſtand for ſeed among them, will always find themſelves diſappointed in the goodneſs of their flowers the following ſeaſon: therefore thoſe who propoſe to have theſe flowers in perfection, ſhould never gather the ſeeds of ſuch as grew in the borders of the flower-garden; becauſe there it will be almoſt impoſſible to preſerve them ſo true, as when they are in beds at a diſtance from all other kinds.

When the ſeed-veſſels turn brown, they muſt be carefully watched, to gather them before they open and diſcharge the ſeeds; becauſe thoſe which are ſituated on the lower part of the ſtalk, will open long before thoſe on the upper part of the ſtalk are ripe; for which reaſon the pods ſhould from time to time be gathered as they ripen, and not ſuffered to ſtand till the ſtalks are pulled up, which is often practiſed. Thoſe pods which are ſituated on the lower part of the ſtalks, are much preferable to ſuch as grow near the top; for which reaſon thoſe who are very curious in the choice of their ſeeds, crop off the upper part of the ſpikes of flowers, and never ſuffer them to ſtand for ſeeds.

As theſe plants are very hardy, and require ſo little care in their culture, they are worthy of a place in every good garden; and during their continuance in flower, there are few plants which make a better appearance; for gathering to make flower-pots to adorn rooms, there is ſcarce any flower ſo proper; becauſe by their upright growth and long ſpikes, they riſe to a proper height above the pots; and when the ſeveral colours are ſkilfully intermixed they make a rich appearance, and continue long in beauty.

6—10. All the perennial Larkſpurs are propagated by ſeeds, which, if ſown in autumn, will more certainly ſucceed, than thoſe which are ſown in the ſpring; when the plants come up, they ſhould be kept clean from weeds, and where they are too cloſe together, part of them ſhould be drawn out, to allow room for the others to grow till the following autumn, when they muſt be planted where they are to remain; the following ſummer they will flower, and the roots continuing many years growing in magnitude, will produce a great number of flower-ſtalks.

11. The ſeeds ſhould be ſown where the plants are to remain.

[" It is with great difficulty (ſays Gerarde) preſerved in our cold countries, albeit in ſome mild winters, I have kept it covered over with a little ferne to defend it from the injury of the march wind, which doth more harm unto plants that come forth of hot countries, than doth the greateſt froſt."—This is a ſenſible obſervation; and although Mr. Miller affirms that the Staveſacre requires no other treatment than the common Larkſpur, yet we frequently find that the plants committed to the open air without protection in our climate are killed in ſevere ſeaſons.]

DENS CANINUS. See *Panicum*.

—— CANIS. See *Erythronium*.

—— LEONIS. See *Arnica, Apargia, Hieracium, Hyoſeris, Hypochæris, Leontodon, Tuſſilago*.

DENTARIA. (*From the toothed form of the root. See Tournefort's figure.*)

Engl. *Toothwort.* Fr. *Dentaire.*

Lin. gen. n. 811. *Reich.* 875. *Schreb.* 1087. *Tourn.* 110. *Juſſ.* 239.

Claſſ. 15. 2. Tetradynamia Siliquoſa.

Nat. order of *Siliquoſæ. Cruciferæ.* Juſſieu.

GENERIC CHARACTER.

CAL. *Perianth* four-leaved: *leaflets* ovate-oblong, converging from parallel, obtuſe, deciduous.

COR. four-petalled, cruciform. *Petals* roundiſh, obtuſe, ſcarce emarginate, flat, ending in claws the length of the calyx.

STAM. *Filaments* ſix, ſubulate, length of the calyx, of which two are ſhorter. *Anthers* cordate-oblong, erect.

PIST. *Germ* oblong, length of the ſtamens. *Style* very ſhort, thick. *Stigma* obtuſe, emarginate.

PER. *Silique* long, columnar, two-celled, two-valved, burſting open elaſtically with the valves rolled back: *diſſepiment* a little longer than the valves.

SEEDS many, ſomewhat ovate.

ESSENTIAL CHARACTER.

Silique burſting elaſtically with the valves rolled back. *Stigma* emarginate. *Cal.* converging lengthwiſe.

SPECIES.

1. Dentaria enneaphylla. *Nine-leaved Toothwort.*
Lin. ſpec. 912. *Reich.* 3. 243. *Jacqu. vind.* 119. *auſtr.* 4. *t.* 316. *Scop. carn. n.* 812. *Krock. ſileſ. n.* 1045.
D. triphyllos. *Bauh. pin.* 322. *Cluſ. hiſt.* 2. 121. *n.* 5. *Raii hiſt.* 784. *Park. theat.* 619. 4.
D. coralloide rad. ſ. enneaphyllon. *Ger.* 833. *f.* 2. *emac.* 984. 2.
Coralloides enneaphyllos. *Bauh. hiſt.* 2. 902.—triphyllos. *Geſn. faſc.* 4. *t.* 2. *f.* 4.
Ceratia Plinii. *Col. ecphr.* 1. 308. *t.* 307.
Leaves in three times three.

2. Dentaria bulbifera. *Bulbiferous Toothwort,* or *Coralwort.*
Lin. ſpec. 912. *Reich.* 3. 243. *hort. cliff.* 335. *fl. ſuec. n.* 584. *Hudſ. angl.* 285. *With.* 683. *Hall. helv. n.* 470. *Scop. carn. n.* 813. *Krock. ſileſ. n.* 1047. *Fl. dan. t.* 361. (good). *Ger.* 833. 1. *emac.* 984. 1. *Park. theat.* 620. *f.* 1.
D. baccifera. *Cluſ. hiſt.* 2. 121. 1. *Lob. ic.* 1. 687. 2. *Raii hiſt.* 785.
D. heptaphyllos bacc. *Bauh. pin.* 322.
Coralloides. *Cord. hiſt.* 151.——minor bulbifera. *Bauh. hiſt.* 2. 902.
β. D. baccifera, fol. ptarmicæ. *Bauh. pin.* 322. *Raii hiſt.* 785.
D. anguſtifolia bacc. *Park theat.* 620 *f.* 6.
Lower leaves pinnate, upper ſimple.

3. Dentaria pinnata. *Seven-leaved Toothwort.*
De Lamarck encycl. 2. 268. *Ait. hort. kew.* 2. 386.
D. pentaphyllos α. *Lin. ſpec.* 912. *ſyſt.* 593. *Reich.* 3. 244. *Krock. ſileſ. n.* 1046. β. *Hall. helv. n.* 469. β.
D. fol. pinnatis & digitatis. *Ger. prov.* 356. 1.
D. heptaphyllos. *Bauh. pin.* 322. *Garid. prov.* 152. *t.* 28. *Raii hiſt.* 785. *Ger.* 834. 3. *emac.* 985. 3. *Park. theat.* 620. *f.* 5. *Villars dauph.* 3. 364.
Coralloides altera ſ. ſeptifolia. *Bauh. hiſt.* 2. 899.
All the leaves pinnate: (lower with ſeven, upper with five leaflets, Hall.)

4. Dentaria pentaphylla. *Five-leaved Toothwort.*
Ait. hort. kew. 3. 387. *Villars dauph.* 3. 364.
D. digitata. *De Lam. encycl.* 2. 268.
D. pentaphyllos β. *Lin. ſpec.* 912. *ſyſt.* 593. *Reich.* 3. 244. *Hall. helv. n.* 469. α. *Scop. carn. n.* 814. *Krock. ſileſ.* α.
D. fol. omnibus quinato-digitatis. *Ger. prov.* 356. 2.
D. pentaphyllos fol. mollioribus. *Garid. prov.* 152. *t.* 29.
D. pentaphyllos. *Bauh. pin.* 322. *Raii hiſt.* 784. *Ger.* 834. 4. *emac.* 985. 4. *Park. theat.* 620. *f.* 2.
Coralloides prima quinquefolia. *Bauh. hiſt.* 2. 899. *f.* 1.
Leaves digitate.

DESCRIPTIONS, &c.

1. [*Root* perennial, white, toothed, long, of a pleaſant taſte. *Stem* a foot or a foot and a half in height, branched, round, and ſmooth. Leaves biternate; leaflets lanceolate, ſerrate, acuminate, ſmooth. *Flowers* from three peduncles forming a panicle or raceme, erect, faſcicled. Calyx pale green or yellowiſh.

lowiſh. Petals reddiſh yellow or yellowiſh red[a]. In the ſituation of the leaves it reſembles *Anemone*, in their form *Eupatorium*. There is a gland on each ſide between the longer ſtamens and the calyx, and one ſurrounding the baſe of each ſhorter ſtamen. The ſtamens are all nearly of a length. In each cell are four ſeeds. Moſt of the upper flowers are abortive[b].

Native of Hungary, Auſtria, Idria in Friuli, Sileſia, &c. in woods. It flowers in april and may.—Called by Gerarde *Coral-toothed Violet*.

2. Bulbs produced from the axils of the leaves as in *Lilium bulbiferum*, and the fruit in like manner abortive[c].

Stem ſimple. Lower leaves have three pairs of leaflets and an odd one, which is confluent with the pair below it; they are bluntly lanceolate and ſerrate; the leaves above theſe have five leaflets, and the upper leaves are trifid or ſimple, acutely lanceolate, ſerrate. Corollas fleſh-coloured. The ſcaly bulbs in the axils of the upper leaves, falling off, take root, and propagate new plants; ſo that it rarely produces ſeed[d]. Root perennial: plant more tender than the others, petals purple, white or reddiſh. There is a gland between each ſhorter ſtamen and the calyx, and a ſmaller one cloven half way between the longer ſtamens and the calyx; ſometimes this gland is entire, and ſometimes it is trifid, with the middle tooth longeſt[e].—It flowers in april and may.

Native of Sweden, Denmark, Switzerland? Germany, Carniola, Piedmont, England, in moiſt woods and ſhady places. With us it is rare, having only been obſerved by Parkinſon in Highreed and Foxholes woods near Mayfield, Suſſex; by Blackſtone, in Old Park wood, near Harefield; and between Beaconsfield and Wycomb, Bucks, by Mr. Hudſon. Named by Gerarde *toothed*, or *dog-tooth Violet*. He cultivated it in his garden.

3. This may be fairly ſeparated from the next ſpecies, the difference in the leaves being permanent. They agree however in the flowers[f].

Native of Switzerland, the South of France and Sileſia. Mounts Jura and Saleva.—Cultivated in 1683, by Mr. James Sutherland[g].]

4. This riſes with a ſtrong ſtalk a foot and half high, with a leaf at each joint, compoſed of five lobes, four inches long, and near two broad in the wideſt part, ending in acute points, and deeply ſerrate; they are ſmooth and ſtand on long footſtalks. The flowers grow in looſe ſpikes at the top of the ſtalks; they are ſmall, of a bluſh colour. Pods long and taper, filled with ſmall, roundiſh ſeeds.

[Calyx erect. An emarginate or ſlightly notched gland between the calyx and each ſhorter ſtamen. Leaves three or four, the two lower quinate, the two upper ternate[h]. Calyx purple; petals white, red or violet on the outſide[i].

Native of Switzerland, Savoy, the South of France, Carniola, Sileſia. Ray obſerved it abundantly on mount Jura.

Cultivated in 1656, by John Tradeſcant[k].]

PROPAGATION AND CULTURE.

Theſe plants are propagated by ſeeds, or parting their roots; the ſeeds ſhould be ſown in autumn, ſoon after they are ripe, in a light ſandy ſoil and a ſhady ſituation: in the ſpring the plants may be taken up where they grow too cloſe, and tranſplanted out in the like ſoil and ſituation; where, after they have taken root, they will require no farther care, but to keep them clear from weeds: the ſecond year they will produce flowers, and ſometimes perfect their ſeeds.

The beſt time to tranſplant the roots is in october, when they ſhould be planted in a moiſt ſoil and a ſhady ſituation; for they will not live in a dry ſoil, or when they are expoſed to the ſun.

[The bulbs produced on the ſtalks of the ſecond ſort, if planted, will grow, and produce other plants.

DENTARIA. See *Lathræa*, *Tozzia*, *Turritis*.

DENTARIÆ AFFINIS. See *Hydrophyllum* and *Orobanche*.

DENTELLA. (*So named by Forſter from the ſegments of the corolla being finely toothed.*)

Forſter gen. 13. *Juſſ.* 200. *Schreb. gen. n.* 310.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Contortæ*. *Rubiaceæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-parted, ſuperior: *ſegments* ſubulate.

COR. one-petalled, funnel-form, longer than the calyx. *Tube* gradually widening into a five-cleft ſpreading *border*: *ſegments* acute, three-toothed, the middle toothlet more produced.

STAM. *Filaments* five, ſhort, awl-ſhaped, inſerted at the baſe of the tube. *Anthers* oblong.

PIST. *Germ* roundiſh, inferior, villoſe. *Style* cylindric, ſhort, thickiſh. *Stigmas* two, thicker than the ſtyle, longer, ſpreading.

PER. *Capſule* globular, crowned by the calyx, two-celled.

SEEDS very many, ovate.

ESSENTIAL CHARACTER.

Cor. tubular five-cleft, with three-toothed ſegments. *Cal.* five-parted. *Stigmas* two. *Capſ.* globular, inferior, two-celled, many-ſeeded.

SPECIES.

1. Dentella repens.

Forſt. gen. 26. *fl. auſtral. n.* 98.

Native of New Caledonia.

DENTELLARIA. See *Knoxia* and *Plumbago*.

DESCUREA. See *Siſymbrium*.

DEVIL IN A BUSH. See *Nigella*.

DEVIL'S-BIT. See *Scabioſa*.

DEVIL'S-GUTS. See *Cuſcuta*.

DEUTZIA.

Thunb. nov. gen. 19. *japon.* 10. *Juſſ.* 431. *Schreb.* 776.

Claſſ. 10. 3. Decandria Trigynia.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, ſomewhat bell-form, one-third of the length of the corolla, tomentoſe, five-cleft, ſeldom ſix-cleft: *diviſions* ovate, obtuſe, erect.

COR. five-petalled, ſeldom ſix-petalled. *Petals* inſerted on the outſide of the edge of the germ, oblong, obtuſe, entire, white.

STAM. *Filaments* ten, placed without the edge of the germ, linear, filiform at the tip, below the tip emarginate, trifid, white, the length of the corolla, alternately ſomewhat ſhorter. *Anthers* globular, twin.

PIST. *Germ* ſuperior, like a wreath, concave in the middle. *Styles* three, ſeldom four, filiform, a little longer than the corolla. *Stigmas* ſimple, club-ſhaped.

PER. *Capſule* globular, truncate, perforated, ſomewhat three-cornered, callous, ſcabrous, three-awned with the permanent baſes of the piſtils, three-valved, three-celled, ſeldom four-celled, the ſize of a pepper-corn, aſh-coloured, gaping at the baſe.

SEEDS ſeveral in each cell.

ESSENTIAL CHARACTER.

Cal. one-leafed. *Capſ.* three-celled. *Filaments* three-cuſped.

SPECIES.

1. Deutzia ſcabra.

Lin. ſyſt. 425. *Thunb. jap.* 185. *t.* 24. *Kæmpf. amœn.* 5. 854.

DESCRIPTION, &c.

A tree about the height of a man, and very much branched. Branches alternate, round, even, purpliſh. Branchlets villoſe, ſcabrous, ſpreading. Leave oppoſite, petioled, ovate, acuminate, ſerrate, veined and wrinkled, ſcabrous with hairs in ſtars, ſpreading, an inch or more in length. Petiole villoſe and ſcabrous, a line in length. Flowers on the outer branchlets in compound panicles, on alternate pedicels. Peduncles and pedicels, angular, tomentoſe and ſcabrous.—It flowers in may and june.

Native of Japan, where the leaves are uſed by joiners in ſmoothing and poliſhing[l].

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[a] Krocker. [b] Scopoli. [c] Linn. [d] Woodw. Mſſ.
[e] Scop. and Krock. [f] Haller. [g] Hort. kew.
[h] Scop. [i] Haller. [k] Hort. kew.

[l] Thunberg.

Dew-berry. See *Rubus.*

DIALIUM.

Lin. gen. Reich. n. 23. *Schreb.* 29. *Juſſ.* 424.

Claſſ. 2. 1. Diandria Monogynia.

GENERIC CHARACTER.

Cal. none.

Cor. *Petals* five, equal, ſeſſile, elliptic, obtuſe, deciduous.

Stam. *Filaments* two, conic, very ſhort, ſituated at the upper ſide of the receptacle. *Anthers* oblong, obtuſe, as if of two conjoined.

Pist. *Germ* ſuperior, ovate. *Style* ſubulate, declined, length of the ſtamens. *Stigma* ſimple, aſcending towards the tip of the anthers.

Per. Legume?

Seed.

ESSENTIAL CHARACTER.

Cal. none. *Cor.* five-petalled. *Stam.* at the upper ſide of the receptacle.

SPECIES.

1. Dialium indum.
   Lin. ſyſt. 57. *Reich.* 1. 21. *mant.* 24. *Rumph. amb.* 3. 212. *t.* 37.
   D. javanicum. *Burm. ind.* 12.

DESCRIPTION, &c.

A tree, with alternate, pinnate leaves, having ſeven ovate-oblong, acuminate, petioled, even leaflets, a hand in length. Flowers panicled, nodding.

Native of the Eaſt Indies[*].

Dianella. See *Dracæna.*]

DIANTHERA. (Δις & ανθηρα, *double-anthered.*)

Lin. gen. n. 28. *Reich.* 29. *Schreb.* 36. *Gronov.* 6. *Juſſ.* 104. *Gærtn.* 51.

Claſſ. 2. 1. Diandria Monogynia.

Nat. order of *Perſonatæ.—Acanthi* Juſſieu.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, five-parted, tubular: *diviſions* lanceolate, equal, length of the tube, permanent.

Cor. one-petalled, ringent. *Tube* ſhort. *Upper-lip* flattiſh, reflex, cloven, very obtuſe; *lower-lip* three-parted; *diviſions* oblong, equal, obtuſe, diſtant: the middle one wider.

Stam. *Filaments* two, filiform, ſhorter than the corolla, growing to the back of it, length of the upper-lip. *Anthers* on each filament double, oblong; the one a little higher.

Pist. *Germ* oblong. *Style* filiform, length of the ſtamens. *Stigma* obtuſe.

Per. *Capſule* two-valved, two-celled, compreſſed above and below, but alternately, with boat-like valves, burſting aſunder with an elaſtic nail.

Seeds ſolitary, in form of a lens.

Obs. *It differs from* Juſticia *in the ſtamens.*

ESSENTIAL CHARACTER.

Cor. ringent. *Capſ.* two-celled, burſting with an elaſtic nail. *Stam.* each a pair of alternate anthers.

SPECIES.

1. Dianthera americana.
   Lin. ſpec. 24. *Reich.* 1. 46. *Gron. virg.* 6. *Pluk. alm. t.* 423. *f.* 5.
   Spikes ſolitary alternate.

[2. Dianthera comata.
   Lin. ſpec. 24. *ſyſt.* 63. *Reich.* 46. *Brown. jam.* 118. *n.* 2. *Sloan. jam.* 1. 160. *t.* 103. *f.* 2. (Antirrhinum).
   Juſticia comata. *Swartz obſ.* 14.
   Spikes filiform verticilled, the lower umbelled.

3. Dianthera japonica.
   Lin. ſyſt. 64. *Thunb. jap.* 21. *t.* 4.
   Peduncle axillary ſolitary ſuſtaining from two to four flowers, bractes oblong ciliate.

4. Dianthera cærulea.
   Forſt. fl. auſtr. n. 14.
   Umbel faſcicled ſeſſile quite ſimple.

5. Dianthera clavata.
   Forſt. fl. auſtr. n. 15.
   Panicle ſubumbelled compound, peduncles dilated at the end.

6. Dianthera paniculata.
   Lour. cochinch. 26.
   Panicles axillary, leaves lanceolate tomentoſe.

7. Dianthera punctata.
   Vahl ſymb. 1. 4. *Forſk. deſcr.* 9. *n.* 25.
   Stem herbaceous, ſpikes terminating, leaves lanceolate-ovate acuminate, anthers awnleſs.

8. Dianthera ſulcata.
   Vahl. ſymb. 1. 4.
   Stem herbaceous grooved, leaves cordate-ovate, ſpikes terminating, lower anther awned.

9. Dianthera flava.
   Vahl ſymb. 1. 5. *Forſk. deſcr.* 9. *n.* 24.
   Suffruticoſe, leaves elliptic-lanceolate, ſpikes terminating, lower anthers awned.

10. Dianthera debilis.
    Vahl ſymb. 1. 5. *Forſk. deſcr.* 9. *n.* 23.
    Stem ſhrubby, ſpikes ſolitary imbricate axillary and terminating, bractes ovate ciliate.

11. Dianthera violacea.
    Vahl ſymb. 1. 6.
    Stem ſhrubby, ſpikes terminating imbricate, bractes lanceolate ciliate, flowers bicalycled.

12. Dianthera bicalyculata.
    Vahl ſymb. 1. 6. *Retz. act. ſuec.* 1775. *p.* 297. *t.* 9. & *obſ.* 1. *p.* 10. *n.* 6. *Forſk. deſcr.* 7. *n.* 19.
    D. malabarica. *Linn. ſuppl.* 85. *Gærtn. fruct.* 1. 240.
    Juſticia malabarica. *Ait. hort. kew.* 1. 27.
    Juſticia ligulata. *Lamarck encycl. n.* 37.
    Flowers panicled bicalycled, panicles dichotomous.

DESCRIPTIONS, &c.

This genus differs ſomewhat from Juſticia in habit, ſtation, time, &c. but in the eſſential characters of the fructification agrees with it entirely: and as to the two anthers on each ſtamen, which gave occaſion to the diſtinction and the name, ſome ſpecies of Juſticia have them. Hence Swartz would diſmiſs the genus Dianthera entirely, and unite the ſpecies to Juſticia. Since Schreber however retains the genus, I have left it as Linneus gave it.]

1. This is a low herbaceous plant with a perennial root, which ſends out ſeveral weak ſtalks about four inches long. The leaves are roundiſh, hairy, ſeſſile, of a dark green colour, and an aromatic odour. The flowers are produced from the ſide of the ſtalks in ſmall ſpikes, and are in ſhape and colour very like thoſe of Clinopodium. They come out at the end of July, but rarely produce ſeeds in England.

[Stem very ſimple. Leaves linear. Peduncles alternate, the length of the leaves. Spikes ovate[a].]

Native of Virginia, and other parts of North America, whence the ſeeds have been ſent to England.

[2. Stem herbaceous, a foot high, ſomewhat branched and erect, angular, jointed, ſmooth; the joints ſwelling. Leaves ſubſeſſile, decuſſated, oppoſite, lanceolate, acute, attenuated at the baſe, ſmooth, nerved; on very ſhort petioles. Peduncles axillary, filiform, terminated by filiform and umbelled ſpikes; flowers all directed one way, minute, pale blue. Bractes minute under the flowers. Segments of the calyx linear. Upper lip of the corolla half-vaulted; lower trifid ſpreading, with very minute bloody dots in two rows on the throat. Filaments under the vault of the throat: anthers two alternate, black. Germ ovate: ſtyle ſhort: ſtigma ſimple bent in. Capſule ovate, attenuated at the baſe, containing four round, flatted ſeeds[b].

According to Browne, it riſes generally to the height of two or three feet, and is plentifully furniſhed with ſlender ſubdivided branches near the top; ſeeds two in each cell.

Native of Jamaica, in the low lands: and there called *Balſam-herb.*

3. *Root* annual. *Stem* herbaceous, erect, ſix-cornered, very finely villoſe, kneed, ſwelling above the

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[*] Linn. mant.

[a] Linn. ſpec.

[b] Swartz.

knee, but little branched, a foot in height. Branches decuſſate. *Leaves* oppoſite, petioled, ovate-oblong, drawn to a point at the baſe, acuminate at the tip, entire, villoſe, ſpreading, unequal, from half an inch to two inches in length, the upper ones often larger. Petioles unguicular. *Peduncles* angular, villoſe, erect, half an inch in length: pedicels in whorls at the end of the peduncle, a line in length. *Bractes* of the pedicels two, oppoſite, ſubulate, ſpreading, villoſe on the outſide, the length of the pedicel: floral bractes approximating to the flower, two, oblong, drawn to a point at both ends, concave, convolute, ſimply acute at the tip, ciliate, villoſe, one larger than the other, unguicular: calycine bractes four, within the others, lanceolate, ſubulate, ciliate, unequal, only half the length of the others, incloſing one, two, or three ſeſſile flowers. *Calyx* divided almoſt to the baſe; the diviſions ſubulate, erect, ciliate, a line in length. *Corolla* purple, a little longer than the bractes, with a curved, cylindric tube. *Filaments* longer than the tube. Anthers alternate at the end of each filament, membranaceous, and of a pale colour. *Germ* ſuperior.—It differs from the Chineſe Dianthera, which it reſembles much, in having the flowers pedicelled, not ſubſeſſile; the peduncles longer and ſolitary in the axils, not aggregate; the bractes oblong and acute only, not ovate with a point almoſt like a ſpine; and the flowers from one axil only, not from both.—It differs from *Juſticia ſexangularis* in having oblong, not wedge-ſhaped bractes.

Native of Nagaſaki in Japan: flowering in auguſt[c].

4. Native of Botany iſland near New Caledonia.

5. Native of the Society iſlands[d].

6. This is a ſhrub, five feet in height, with an erect ſtalk, and brachiate branches. Leaves quite entire, oppoſite. Segments of the calyx filiform. Corolla white, with a long ſlender tube; the upper lip filiform and emarginate; the lower large and trifid. Anthers two on each filament, one over the other. Stigma acute.

Native of Cochinchina[e].

7. Stem erect, roundiſh, even, jointed: joints three inches long, narrowed at bottom: branchlets axillary, filiform, the length of the joints. Leaves oppoſite; thoſe on the ſtem petioled, lanceolate-ovate, acuminate, ſcarcely crenate, ſmooth, ſimply veined with the veins moſtly oppoſite, only half the length of the joints; thoſe on the branchlets ſeſſile. Spike at the top of the branchlets, peduncled, an inch long, ſmooth. Peduncle filiform. Flowers in whorls, two or three on each ſide, on very ſhort pedicels, and ſmall; the lower ones more remote. Bractes lanceolate, acuminate, a line in length. Calyx longer than the bracte, with awl-ſhaped ſegments. Corolla twice as long as the calyx, ſmooth on the outſide, the throat dotted with violet.—It differs from the two next ſpecies, in having all the bractes ſhorter than the calyx, the calyx ſimple, the corolla white dotted with violet, and awnleſs anthers.

8. Stem erect, angular, ſix-grooved, pubeſcent, jointed, the internodes two or three inches long, and the joints ſwelling. Leaves oppoſite, obtuſe, ſcarcely crenate, ſomewhat rugged along the nerves, a little villoſe, paler underneath, an inch and half long, with alternate veins: petioles the length of the leaves. Spike three inches long, ſubſeſſile. Flowers in whorls, ſeſſile, three on each ſide, the lower ones more remote, the upper ones crowded, ſmaller than in the preceding. Bractes two under each whorl, lanceolate, villoſe towards the edge, the length of the flower: under each flower two others, linear, villoſe, ſhorter. Calyx double: the outer almoſt the length of the bractes, three-parted with awl-ſhaped ſegments; the inner only half the length of the outer, five-cleft, with lanceolate, ciliate ſegments. Corolla villoſe on the outſide, white veined with purple; lower lip three-lobed, the lobes oblong, obtuſe, equal. Anthers purple, the lower ones with a white awn. It differs from the preceding in its ſix-grooved ſtalk, cordate-ovate obtuſe leaves, petiole the length of the leaf, flowers in whorls, and corolla ſtreaked with purple veins.

Native of Arabia Felix.

9. Stem ſhrubby, roundiſh, the thickneſs of a gooſe quill. Branches obſcurely quadrangular, ſubpubeſcent, ſcored with a line along the ſides; the internodes an inch long, the joints ſwelling. Leaves oppoſite, quite entire, thinly hairy, twice as long as the internodes, with alternate veins, on ſhort petioles. Spike peduncled, two inches long, ſomewhat hairy; flowers oppoſite, ſolitary, contiguous. Bractes three under each flower, linear-lanceolate, blunt, villoſe underneath, one larger, the length of the flower. Calyx double: the outer deeply three-parted; ſegments linear, obtuſe, villoſe, ſhorter by half than the bractes; the inner five-cleft, villoſe, a little ſhorter, with awl-ſhaped ſegments. Corolla villoſe on the outſide, the length of the bractes; lower lip trifid, the lateral ſegments lanceolate, the middle one oblong, obtuſe. Lower anther awned.

Forſkall regarded theſe three as varieties of D. americana; but they differ in the form of the leaves, the terminating ſpikes, and in having the lower flowers remote, not all crowded together in a ſort of head.

10. Stem ſhrubby. Branches obſcurely quadrangular, four-grooved, with hairs pointing backwards, and internodes half an inch in length. Leaves oppoſite, lanceolate, narrowed at the baſe into a very ſhort petiole, quite entire, bluntiſh, veinleſs, having four parallel villoſe nerves underneath, and being only half the length of the internodes. Spikes oblong, four-cornered, ſhorter than the leaf; the axillary ones alternate and ſeſſile, the terminating one peduncled. Bractes in whorls, four together, ſharpiſh, imbricate, villoſe along the nerves, two larger. Calyx ſimple, five-parted; ſegments linear-lanceolate, ciliate, ſhorter than the bractes. Corolla pubeſcent on the outſide, a little longer than the bractes.

It differs from the next ſort in having grooved branches hairy backwards, ſeſſile leaves, four-cornered axillary ſpikes, ovate bractes in whorls, and a ſimple calyx.

11. Stem ſhrubby. Branches powdered and villoſe, obſcurely quadrangular, the angles ſcarcely ſcored with a line, the internodes an inch and half long. Leaves oppoſite, the lower oblong, the upper lanceolate, rounded at the baſe, quite entire, ſmooth, bright green, veinleſs, nearly the length of the internodes, on ſhort petioles. Spike cylindric, half an inch long, on a very ſhort peduncle. Bractes imbricate, ending in a ſomewhat prickly point; the loweſt nearly the length of the ſpike. Calyx double: the outer three-parted, with briſtle-ſhaped ſegments; the inner five-cleft, with linear-ſubulate, ſmooth ſegments, ſhorter than the bractes. Corolla pubeſcent on the outſide, longer than the bractes[f].

12. Stem herbaceous (according to the Supplement, ſhrubby, angular, rough with hairs.) Leaves oppoſite, ovate, acuminate, quite entire, petioled. Panicles axillary (terminating, *Suppl.*). Pedicels bifid, often trifid. Calyx double; outer deeply five-cleft, the dorſal ſegment lanceolate, almoſt the length of the corolla. Outmoſt bracte linear, double the length of the other. Corolla purple, bilabiate, divided. Anthers divaricated[g].

Native of the Eaſt Indies and Arabia Felix. It is annual, and flowers here in auguſt. Introduced in 1785, by Sir Joſeph Banks, Bart.[h]

The proper place of all theſe is between the ſecond and third ſpecies[i].

For other ſpecies reputed to be *Dianthera* by ſome authors, ſee *Juſticia.*]

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[c] Thunberg.
[d] Forſter.
[e] Loureiro.

[f] Vahl.
[g] Linn. ſuppl. and Hort. kew.
[h] Hort. kew.
[i] Vahl.

PROPAGATION AND CULTURE.

1. This plant is very difficult to preſerve in this country, for although it is hardy enough to live here in the open air, yet it is very ſubject to rot in winter; and if it is placed under ſhelter, it is apt to draw up weak, and ſoon after to decay.

[The others, being natives of the Eaſt or Weſt Indies and other hot countries, muſt be preſerved in the bark ſtove: but few of them have hitherto been introduced among us.]

DIANTHUS. (Διος ανθος, *Jove's-flower, or divine flower; from the fine colour and odour in ſome ſpecies.*)
Lin. gen. n. 565. *Reich.* 614. *Schreb.* 770. *Juſſ.* 302. *Gærtn. t.* 129. Caryophyllus. *Tourn.* 174. Tunica. *Dill. elth.* 298.
Claſſ. 10. 2. Decandria Digynia.
Nat. order of *Caryophyllei.*

GENERIC CHARACTER.

Cal. *Perianth* cylindric, tubular, ſtriated, permanent, five-toothed at the mouth, ſurrounded at the baſe with four *ſcales*, of which the two oppoſite are lower.

Cor. *Petals* five; *claws* length of the calyx, narrow, inſerted into the receptacle. *Border* flat: the plates outwardly wider, obtuſe, crenate.

Stam. *Filaments* ten, ſubulate, length of the calyx, with ſpreading tips. *Anthers* oval-oblong, compreſſed, incumbent.

Pist. *Germ* oval. *Styles* two, ſubulate, longer than the ſtamens. *Stigmas* bent back, acuminate.

Per. *Capſule* cylindric, covered, one-celled, gaping open at top four ways.

Seeds a great many, compreſſed, roundiſh. *Receptacle* free, four-cornered, ſhorter by half than the pericarp.

Obs. *In ſome the ſtyles ſcarce exceed the length of the ſtamens; in others they are very long, but rolled back in ſuch a manner that the inflexion of the flower is not neceſſary.*

ESSENTIAL CHARACTER.

Cal. cylindric, one-leafed; with four ſcales at the baſe. *Petals* five, with claws. *Capſ.* cylindric, one-celled.

SPECIES.

* *Flowers aggregate.*

1. Dianthus barbatus. *Bearded Pink,* commonly called *Sweet-William.*
Lin. ſpec. 586. *Reich.* 2. 332. *hort. cliff.* 155. *upſ.* 165. *With.* 440. *Sauv. monſp.* 144. *Krock. ſileſ. n.* 649. *Mill. fig. t.* 122. *Curtis mag. t.* 207.
Tunica barbata. *Scop. carn. n.* 502.
Caryophyllus barbatus hortenſis latifolius. *Bauh. pin.* 208.
Armeria rubra latifolia. *Ger.* 479. 3. *emac.* 598. 3. *Park. parad.* 319. *n.* 4—8. *Raii hiſt.* 991. 2.
Broad-leaved Sweet-William.
β. C. barb. hort. anguſtifolius. *Bauh. pin.* 209. *Raii hiſt.* 991. 3. *Ger.* 479. 4. *emac.* 598. 4. *Cluſ. hiſt.* 1. 287. 1. *Dod. pempt.* 176. 2.
Narrow-leaved Sweet-William, or *Sweet-Johns.*
γ. C. barb., fl. multiplici. *Bauh. pin.* 208.
Double Sweet-William.
Flowers in bundles, calycine ſcales ovate-ſubulate equal to the tube in length; leaves lanceolate.

[2. Dianthus carthuſianorum. *Carthuſian Pink.*
Lin. ſpec. 586. *Reich.* 2. 332. *hort. upſ.* 105. *Pollich pal. n.* 409. *Krock. ſileſ. n.* 650. *Allion. pedem. n.* 1544.
Tunica. *Hall. helv. n.* 899.—carthuſianorum. *Scop. carn. n.* 504.
Caryophyllus ſylveſtris vulgaris latifolius. *Bauh. pin.* 209.
C. arvenſis, calyculo florum numeroſo. *Loeſel. pruſſ.* 37. *f.* 7.
C. montana 1. *Tabern.* 287.
Armeria alba. *Ger.* 478. *Raii hiſt.* 990.
Betonica coronaria, ſ. C. ſylv. vulgatiſſimus. *Bauh. hiſt.* 3. 334.
Flowers ſubaggregate; calycine ſcales ovate awned ſhorter than the tube, leaves linear three-nerved.

3. Dianthus atrorubeus.
Allion. pedem. n. 1545.
C. ſylveſtris, fl. rubro plurimo de ſummo caule prodeunte. *Segu. veron.* 434. *t.* 7. *f.* 2.
Flowers aggregate, calycine ſcales ovate awned ſhorter than the tube, leaves connate ſtriated.]

4. Dianthus ferrugineus. *Ruſty Pink.*
Lin. ſyſt. 417. *Reich.* 2. 333. *mant.* 563. *Mill. fig. t.* 81. *f.* 1. *Barr. rar.* 648. *t.* 497. (Caryophyllus).
Flowers aggregate, petals bifid, ſegments three-toothed.

5. Dianthus Armeria. *Deptford Pink.*
Lin. ſpec. 586. *Reich.* 2. 333. *hort. cliff.* 165. *fl. ſuec. n.* 381. *Hudſ. angl.* 183. *With.* 440. *Pollich pal. n.* 410. *Krock. ſileſ. n.* 651. *Hall. helv. n.* 900. (Tunica). *Fl. dan. t.* 230.
Caryophyllus barbatus. *Segnier t.* 7. *f.* 4.—ſylveſtris. *Bauh. pin.* 209. *Mor. hiſt.* 2. *ſ.* 5. *t.* 25. *f.* 20.—minor annuus, fl. minore. *Raii ſyn.* 337. 4. *Pet. brit. t.* 56. *f.* 5.
C. pratenſis. *Ger. emac.* 594. 11. *Park. theat.* 1338. *n.* 2.
Armeria ſylveſtris altera, &c. *Lob. ic.* 1. 448. 2. *Raii hiſt.* 991. 4. (deſcr. good).
Viola barbata anguſtifolia. *Bauh. hiſt.* 3. 335. 2. (good).
Flowers in bundles, calycine ſcales lanceolate villoſe equal to the tube in length.

6. Dianthus japonicus.
Lin. ſyſt. 417. *Thunb. jap.* 183. *t.* 23.
Flowers in bundles, calycine ſcales acute ciliate ſhorter than the tube.

7. Dianthus prolifer. *Proliferous Pink.*
Lin. ſpec. 587. *Reich.* 2. 333. *Hudſ. angl.* 184. *With.* 441. *Pollich pal. n.* 411. *Krock. ſileſ. n.* 652. *Fl. dan. t.* 221.
Tunica. *Hall. helv. n.* 901.—prolifera. *Scop. carn. n.* 503.
Caryophyllus ſylveſtris prolifer. *Bauh. pin.* 209. *Segu. veron.* 26. *t.* 7. *f.* 1. *Park. theat.* 1338. 1. *Raii ſyn.* 337. *Mor. hiſt. ſ.* 5. *t.* 25. *f.* 21.
Armeria prolifera. *Lob. ic.* 1. 450. 1. *Ger. emac.* 599. 5. *Raii hiſt.* 990. 13.
Betonica coronaria ſquamoſa ſylveſtris. *Bauh. hiſt.* 3. 335. 1.
Viſcaria. *Ger.* 481.
Flowers in heads, calycine ſcales ovate obtuſe awnleſs exceeding the tube in length.

** *Flowers ſolitary, ſeveral on the ſame ſtem.*

8. Dianthus diminutus.
Lin. ſpec. 587. *ſyſt.* 418. *Reich.* 2. 334. *Leers herborn. n.* 322.
Caryophyllus ſylv. prolifer, fl. ſingulari. *Tourneſ. inſt.* 352. *Dill. giſſ.* 148.
C. prolifero affinis, &c. *Bauh. pin.* 209. 7.
C. ſylv. minimus. *Tabern. hiſt.* 290.
Calycine ſcales eight, longer than the flower.

9. Dianthus Caryophyllus. *Clove Pink.*
Lin. ſpec. 587. *Reich.* 2. 334. *hort. cliff.* 164. *upſ.* 104. *mat. med.* 117. *Hudſ. angl.* 184. *With.* 441. *Engl. bot. t.* 214. *Plenck, ic. t.* 347. *Lour. cochinch.* 282.
α. D. coronarius. *Lin. ſpec.* α.
Car. hortenſis ſimplex, fl. majore. *Bauh. pin.* 208.
β. Car. altilis major. *Bauh. pin.* 207.
C. hortenſis. *Park. parad.* 306. *Raii hiſt.* 986. *Blackw. t.* 85. *Ger.* 472. *emac.* 588.
γ. Car. maximus ruber & variegatus. *Bauh. pin.* 209. *Mill. fig. t.* 121. *Curt. magaz.* 39.
Common Carnation.
δ. D. imbricatus. *Lin. ſpec.* δ. *hort. cliff.* 164.
ε. D. inodorus. *Lin. ſpec.* ε. *Gærtn. fruct.* 2. 227.
Tunica. *Hall. helv. n.* 896.—Caryophyllus. *Scop. carn. n.* 507.
Car. ſylv. biflorus. *Bauh. pin.* 209. *prodr.* 104. *Segu. veron.* 435. *t.* 7. *f.* 3.
Calycine ſcales ſubrhombed very ſhort, petals crenate, beardleſs.

[10. Dianthus pomeridianus.
Lin. ſpec. 1673. *Reich.* 2. 335.

Caryophyllus ſylv. & ſaxatilis, fl. magno lacteo ſubtus ad ſpadiceum vergente. *Tourn. cor.* 23.

Calycine ſcales ovate acute, very ſhort, upper half of the calyx ſtriated, petals emarginate almoſt entire.]

11. Dianthus deltoides. *Maiden Pink.*

Lin. ſpec. 588. *Reich.* 2. 335. *hort. cliff.* 164. *fl. ſuec. n.* 382. *Hudſ. angl.* 184. *With.* 441. *Pollich pal. n.* 412. *Neck. gallob.* 195. *Krock. ſileſ. n.* 653. *Fl. dan. t.* 577.

Caryophyllus minor repens. *Raii hiſt.* 988. *ſyn.* 335. *Dill. elth.* 402. *Park. parad.* 316. *n.* 5.

C. ſimplex ſupinus latifolius. *Bauh. pin.* 208. *Raii hiſt.* 990. *n.* 11.

C. ſylveſtris 7. *Cluſ. hiſt.* 1. 285. 1.

C. montanus purpureus. *Ger. emac.* 593. 6?

Betonica coronaria ſ. Car. minor fol. viridi nigricante repens, fl. argenteis punctis notato. *Bauh. hiſt.* 3. 329. *f.* 4.

β. D. glaucus. *Lin. ſpec.* 588. *Reich.* 2. 336. *hort. cliff.* 164. *upſ.* 104. *Hudſ. angl.* 185.—— deltoides β. *Dill. elth.* 400. *t.* 298. *f.* 384. (Tunica).

Calycine ſcales ovate-lanceolate acute, about two, petals crenate, leaves bluntiſh, ſubpubeſcent.

[12. Dianthus rupeſtris.

Lin. ſyſt. 418. *ſuppl.* 240.

Caryophyllus 1. *Cluſ. hiſt.* 1. 282.

Calycine ſcales two very obtuſe, petals crenate.

13. Dianthus cæſius. *Mountain Pink.*

Engl. bot. t. 62. *Linn. tranſ.* 2. *p.* 302.

Dianthus glaucus. *Hudſ. angl.* 185. *With.* 443.

D. virgineus β. *Lin. ſpec.* 590.

Tunica. *Dillen. hort. elth.* 401. *t.* 298. *f.* 385.

Armeriæ ſpecies flore in ſummo caule ſingulari. *Raii ſyn.* 336.

Flowers ſubſolitary, calycine ſcales roundiſh ſhort, petals crenate pubeſcent, leaves rugged at the edge.

14. Dianthus albens. *Cape Pink.*

Ait. hort. kew. 2. 90.

Calycine ſcales lanceolate four ſhort, corollas emarginate.]

15. Dianthus chinenſis. *China Pink.*

Lin. ſpec. 588. *Reich.* 2. 336. *hort. cliff.* 164. *upſ.* 104. *Curt. magaz.* 25. *Mill. fig. t.* 81. *f.* 2. *Lour. cochinch.* 282.

Calycine ſcales ſubulate patulous leafy equalling the tube, corollas crenate, leaves lanceolate.

[16. Dianthus monſpeliacus.

Lin. ſpec. 588. *Reich.* 2. 336. *amœn.* 4. 313.

Calycine ſcales ſubulate ſtraight, a little ſhorter than the tube, corollas many-cleft, ſtem erect.]

17. Dianthus plumarius. *Feathered Pink.*

Lin. ſpec. 589. *Reich.* 2. 336. *hort. upſ.* 105. *cliff.* 174. *Krock. ſileſ. n.* 654.

Tunica. *Hall. helv. n.* 897.—plumaria. *Scop. carn. n.* 505.

Caryophyllus ſylveſtris fl. laciniato, ſine corniculis, odoro. *Bauh. pin.* 210. 5. *Raii hiſt.* 988. 4.

C. plumarius. *Park. parad.* 316. *n.* 2, 3. *Ger.* 474. 3, 4. *emac.* 591. 3, 4.

Calycine ſcales ſubovate very ſhort, much blunted and awnleſs, corollas many-cleft.

[18. Dianthus crinitus.

Smith in Linn. tranſ. 2. 300.

Caryophyllus orientalis, minimus tenuiſſime laciniatus, flore purpureo. *Tournef. cor.* 23.

Calycine ſcales oval mucronate ſubdiverging one-third of the length of the tube, petals many-cleft, beardleſs.]

19. Dianthus ſuperbus. *Superb Pink.*

Lin. ſpec. 589. *ſyſt.* 418. *Reich.* 2. 337. *amœn.* 4. 272. *fl. lapp. n.* 170. *fl. ſuec. n.* 383. *Jacqu. obſ.* 1. 40. *t.* 25. *Pollich pal. n.* 413. *Krock. ſileſ. n.* 655. *Fl. dan. t.* 578. *Smith ſpicil.* 17. *t.* 19. *Curt. magaz. t.* 297.

Tunica. *Hall. helv. n.* 898. *Rupp. jen.* 2. 118.

Caryophyllus ſylveſtris alter, fl. laciniato odoratiſſimo. *Bauh. pin.* 210. 3. *Raii hiſt.* 989. 10.

C. ſylv. 6. *Cluſ. hiſt.* 1. 284.

C. plumarius auſtriacus. *Park. parad.* 316. *n.* 4.

Flowers panicled, calycine ſcales very ſhort acuminate, petals cloven into many capillary ſegments, ſtem erect.

[20. Dianthus attenuatus.

Smith in Linn. tranſ. 2. 301.

Calycine ſcales ſhort lanceolate acuminate about ſix, tube attenuated at the top, petals crenate.]

*** *Stem one-flowered herbaceous.*

21. Dianthus arenarius. *Sand Pink.*

Lin. ſpec. 589. *Reich.* 2. 337. *fl. ſuec. n.* 384. *Krock. ſileſ. n.* 657?

Tunica arenaria. *Scop. carn. n.* 508?

Car. ſylv. humilis, fl. unico. *Bauh. pin.* 209. *n.* 6?

C. ſylv. 1. *Cluſ. hiſt.* 1. 282. *Dill. elth.* 402?

Stem bearing one or two flowers, calycine ſcales ovate obtuſe, petals many-cleft, leaves linear.

22. Dianthus alpinus.

Lin. ſpec. 590. *ſyſt.* 418. *Reich.* 2. 338. *Jacqu. auſtr.* 1. *t.* 52. *Krock. ſileſ. n.* 656.

Caryophyllus pumilus latifolius. *Bauh. pin.* 209. *prodr.* 104.—&, C. ſylv., fl. magno inodoro hirſuto. *pin.* 209. *Raii hiſt.* 987. 3.

C. ſylv. 2. *Cluſ. hiſt.* 1. 283. *f.* 1. (good).

Corollas crenate, outer calycine ſcales leafy almoſt equalling the tube.

23. Dianthus virgineus. *Upright Pink.*

Lin. ſpec. 590. *ſyſt.* 418. *Reich.* 2. 338. *Jacqu. auſtr.* 5. *app. t.* 15. *Smith in Linn. tranſ.* 2. 297.

Tunica virginea. *Scop. carn. n.* 509.

Car. ſylv. repens multiflorus. *Bauh. pin.* 209. *prodr.* 104. 2.

One flower or two on the ſtem, petals crenate, calycine ſcales very ſhort and blunt in pairs.

**** *Shrubby.*

[24. Dianthus arboreus.

Lin. ſpec. 590. *ſyſt.* 418. *Reich.* 2. 339.

C. arb. creticus. *Bauh. pin.* 208. *prodr.* 104. 1. *Raii hiſt.* 987.

Betonica coronaria arborea cretica. *Bauh. hiſt.* 3. 328.

Stem ſhrubby, leaves oblong ſomewhat fleſhy, calycine ſcales numerous blunt cloſely imbricate very ſhort.

25. Dianthus fruticoſus.

Lin. ſpec. 591. *Reich.* 2. 339.

D. arboreus β. *Smith in Linn. tranſ.* 2. 303.

Caryophyllus græcus arboreus, leucoii fol. peramaro. *Tournef. cor.* 23. *itin.* 1. 183. *t.* 9.—1. 219. *edit. oct.*

Stem ſhrubby, leaves lanceolate.

26. Dianthus juniperinus.

Smith in Linn. tranſ. 2. 303.

Caryophyllus creticus arboreus, juniperi folio. *Tounef. cor.* 23.

C. ſylveſtris arboreus. *Alpin. exot.* 39. *t.* 38.

Stem ſhrubby, leaves awl-ſhaped, calycine ſcales about four, obovate, mucronate and pungent, patulous, only half the length of the tube.

27. Dianthus pungens. *Prickly-leaved Pink.*

Lin. ſyſt. 419. *Reich.* 2. 339. *mant.* 240.

Flowers ſolitary, ſtems few-flowered, calycine ſcales very ſhort mucronate ſpreading, tube gibbous, petals entire.

28. Dianthus hiſpanicus.

D'Aſſo aragon. n. 371. *t.* 3.

Stem uſually one-flowered, calycine ſcales ovate, petals linear quite entire.

29. Dianthus Libanotis.

Billard. ic. ſyr. 1. 14. *t.* 5.

Flowers ſubaggregate, calycine ſcales ſix acuminate recurved, corollas multifid-capillary bearded at the throat, ſtem erect.

30. Dianthus pumilus.

Vahl ſymb. 1. 32. *Forſk. arab.* 111. *n.* 284.

Stemleſs; leaves linear.

DESCRIPTIONS, *&c.*

Theſe beautiful plants are chiefly herbaceous; ſome few however are ſuffruticoſe. Moſt of them are hardy, and perennial or biennial; ſome of the ſmaller wild ſorts only are annual. Stalks annual, from one to three feet in height. Leaves oppoſite, narrow, entire. Flowers terminating, many aggregate, ſome ſolitary or ſeveral together but diſtinct.

There is much confuſion in this genus from the incorrectneſs of authors. Dr. Smith obſerves, in his excellent paper on this genus, in the ſecond volume of the Linnean Tranſactions, that the ſynonyms form the moſt inextricable botanical labyrinth he ever entered. I wiſh he may not find many other labyrinths yet more inextricable than this.

1. The Sweet-William has a perennial fuſiform root. Stem upright, jointed, ſmooth, a foot and half high, branched. Leaves ſoft, veined, connate, from half an inch to almoſt an inch broad in the wideſt part, bright green. Bundles of flowers compact, umbelled, ſeſſile. Petals ſerrate, when wild red either plain or ſpotted with white, ſmaller than in many of the genus[a]; the border the length of the calyx. Calycine ſcales, four, five, or ſix, ovate at the baſe, but putting out narrow ſtiff points, reaching almoſt as high as the calyx[b]; hence this ſpecies is named *barbatus* or bearded.

The native country of this plant, ſo common in our gardens, was not known to Linneus; Dodonæus however, in 1552, mentions its being found wild in Germany, and Profeſſor Hoffman confirms this in his Germanys Flora, 1791[c].

Scopoli, Allioni, and Krocker inſert it in their floras; and Dr. Stokes ſets it down as growing at King's-Weſton near Briſtol: but it is probably not originally wild.

This flower appears in the catalogue of Gerarde's garden, in 1596, and was probably cultivated much earlier, being eſteemed (as Gerarde expreſſes it "for "its beauty to deck up gardens, the boſoms of the "beautiful, garlands and crowns for pleaſure."—Parkinſon ſays that the narrow-leaved kinds are called Sweet-Johns, and the reſt Sweet-Williams: that the broad-leaved unſpotted kinds are named in ſome places Tolmeiners and London Tufts, and that the ſpeckled kind is termed London Pride.

The variations of colour are numerous, and might have been more ſo if this ſpecies had attracted the ſame minute attention as the floriſts have given to the Pink and Carnation. The principal varieties are the following:

1. Broad-leaved, or Sweet-Williams.
2. Narrow-leaved, or Sweet-Johns.

Each of theſe have the flowers

1. Single, and
2. Double.

The principal variations of colour are

1. Deep red.
2. Pale red. Roſe-coloured. Fleſh-coloured.
3. Purple, inclining to blue.
4. Purple and white.
5. White ſpotted.
6. Red, with white borders: figured by Miller. And, Purple with white borders: figured by Curtis, as the Painted Lady.
7. Pure White.

With all the intermediate ſhades of the above colours, both ſingle and double.]

The broad-leaved, with very double flowers of a deep purple, inclining to blue, burſting the calyx, is not ſo much eſteemed. The double Roſe Sweet-William, with flowers of a fine deep roſe-colour, and ſmelling ſweet, is much valued; for it does not burſt. The Mule, or Fairchild's Sweet-William, is one of the narrow-leaved ſorts. It is ſuppoſed to have been produced from ſeeds of a Carnation impregnated by a Sweet-William. The flowers are of a brighter red than either of the former; their bunches are not quite ſo large, but the flowers have an agreeable odour.

[2. This differs from the foregoing ſort, in having the leaves narrower by half, ſtiffer, and marked with three principal nerves, not one only, as in that. The ſtem is a little ſcabrous, not perfectly ſmooth, as in the former. The petals are diſtant, and villoſe, not ſmooth, on their upper ſurface. The piſtils are longer than the tube[d].

Krocker adds other differences: that the leaves are glaucous and connate; the ſtem higher; the bundles of flowers ſmaller and leſs cloſe, eſpecially in the wild plants; the calycine ſcales broader; petals ſerrate, purple, with ſharp auricles; calyx ample, viſcid, pale brown or dark purple, with a green baſe; anthers violet-coloured; ſeeds compreſſed, roundiſh, with a black membranaceous edge.

In a fertile ſoil there will be fifteen flowers on a ſtem, in a barren ſoil fewer, and ſometimes only one; this therefore is an intermediate ſpecies between the aggregate and one-flowered *Dianthi*.—There are ſometimes ſeven calycine ſcales. The petals are of a deep red colour, ovate, and five-toothed[e].

Pollich could not obſerve any toothlets at the throat, which Krocker (from Haller) calls the auricles.

There are two pairs of ſcales to the calyx (according to Allioni): a crown of black dots is at the origin of the claws in the petals, and at the ſame place are a few white hairs. Flowers terminating, on two branches, from four to ſix. Perennial.

Native of Germany, Switzerland, Carniola, Italy, Sicily, Spain. Haller ſays it is very common about Aigle; and I gathered it in flower on the 28th of april 1779, at Chatelaine near Geneva. With us it does not flower till july.

According to the Kew catalogue, it was introduced in 1771, by Monſ. Richard.

3. Height from two to three feet. Leaves ſmooth, flat, connate at the baſe, an inch from the joint, ſtriated underneath, lanceolate, erect. The head of flowers at the end of the ſtem is formed in this manner: a pair of elliptic leaves emitting a long awn has two ſhort peduncles riſing from it on each ſide; hence the ſtem riſing a little higher, has three other very ſhort peduncles, each bearing three flowers. Similar bractes contain the calycine ſcales, which are four in number, tranſparent, reddiſh white, ending in a ſhort brown awn. Calyx brown, very cloſely ſtriated. Petals ſcarlet, rhomb-ſhaped, with few unequal teeth; there are uſually two on each ſide, and at the end two or three ſhort ones; on the upper ſurface are a few erect black hairs. The flower has hardly any ſmell. The plant is perennial.—Native of Piedmont, in dry hilly places, by the ſides of woods[f].

This, which is given as a variety of the foregoing ſpecies by Linneus, is certainly diſtinct, in Allioni's opinion.

4. This ſort reſembles the foregoing very much, but the ſtem is narrower, and the leaves are more graſſy and more keeled; the flowers are bundled in like manner as that is with the common calyx ſcarioſe: it differs, however, in having the calycine ſcales with the awns the length of the corolla, which in the laſt ſpecies are ſhorter; alſo in having the petals bifid, with three teeth on each ſide, rufous underneath, and yellowiſh within; the border ſhorter than the calyx: whereas the petals of the Carthuſian Pink are not emarginate or bifid, but rounded, toothed, and bright purple on both ſides[g].

It has the entire habit of Sweet-William; the flower-ſtems are upright, and about a foot and half high; the leaves are ſomewhat like thoſe of Carnation, but of a darker green; the bundles of flowers are cloſe; ſome of the corollas are yellow, and others of a ruſty iron colour in different bundles, and ſometimes even in the ſame bundle. The ſeaſon of flowering is in july, but when the weather proves cool and moiſt, there will be a ſucceſſion of flowers till the end of ſeptember. The roots will abide two or three years, but the young plants of the ſecond year produce the greateſt quantity of flowers. This ſpecies was diſcovered by Barrelier in the mountains of Abruzzo in Italy; and it has been ſince diſcovered in Spain, whence Mr. Miller received the ſeeds, which have ſucceeded in the Chelſea garden[h]. (1756).

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[a] Krocker.
[b] Scopoli.
[c] Curtis.
[d] Linn. ſpec.
[e] Scopoli.
[f] Allioni.
[g] Linn. mant.

5. Root annual. (biennial. *Ray hiſt.*) Stems erect, a foot or a foot and half in height, round, pubeſcent, roughiſh, ſwelling at the joints, towards the upper part a branch comes forth at each joint, terminated with a ſmall bundle of from two to four flowers. Leaves linear-lanceolate, connate, bright green, erect, entire, pubeſcent on both ſides and roughiſh, three-nerved, three inches long, and two lines broad. Each flower has two or four bractes, or calycine ſcales, which are ſubulate, ſtriated, and hirſute. Calyxes longer and narrower than in the Carthuſian Pink, ſtriated and villoſe. Claws of the petals long; border purple, dotted with red and white, ſmooth, except that they are ſlightly hairy towards the throat, obtuſe, and finely notched at the end, (acuminate, with one or two teeth. *Lin. ſpec.*) a line and half in breadth, and nine lines or more in length, including the claws. Anthers violet-coloured. Stigmas red-purple, flexuoſe, pubeſcent[i].—It flowers in july and auguſt.—Native of Gothland, Denmark, Upper and Lower Sileſia, the Palatinate, and other parts of Germany, France, Switzerland, Italy, Spain, and England. From having been found in a meadow near Deptford by Johnſon, it obtained the name of *Deptford Pink*; it occurs in Charlton wood, and other places in Kent; near Croydon, between Dorking and Mickleham; Dulwich, Oak of Honourhill, Streatham, &c. in Surrey; in Norfolk; about Perſhore and Eckington in Worceſterſhire; near Ketley in Shropſhire; and at Clarkton Leap, near Worceſter. Near Reading in Berkſhire. Near Caverſham. By the road from Harefield to Chalfont, St. Peter's. In a little wood near Highgate, and in Tuddington field.

6. Stem decumbent at the baſe, then erect, round, even, ſmooth, ſimple, or very rarely divided at top, a foot in height. Leaves oppoſite, petioled, ovate, acute, entire, ſmooth, nerveleſs, erect, an inch in length, the upper ones ſmaller. Petioles broad, ſtem-claſping. Flowers terminating, faſtigiate. Calyx the length of the tube of the corolla, ſtriated, ſmooth: calycle ovate at the baſe, then lanceolate, acuminate, keeled, half the length of the calyx. Corolla crenate.—Native of Japan[k].

7. Root annual. Stem uſually ſingle, erect, decumbent only at bottom, very ſmooth, ſwelling at the joints, a ſpan or a foot high, ſometimes more. A pair of awl-ſhaped leaves at each joint, connate, quite entire, bright green, ſmooth. Flowers in a crowded head on the ſummit of the ſtalks, three or four together, ſurrounded by large ſcaly bractes nearly hiding them; they open one at a time, the uppermoſt firſt, riſing up from the bractes; when they fade, drying up and withdrawing again, ſo that they are a conſiderable time in flowering. Corollas ſmall, ſlightly bifid, not crenate, red or roſe-coloured, ſometimes varying to white; they expand about eight in the morning, and cloſe about one in the afternoon[l].

Native of Denmark, Germany, France, Switzerland, Carniola, Italy, Sicily, Spain, England. With us it is rare, in ſandy paſtures, and has been obſerved only at Selſey Iſland in Suſſex, near Norwich, on Landridge hill, and at Hanley caſtle, in Worceſterſhire.—Between Hampton Court and Tuddington. *Merret.*—It flowers in july and auguſt; and is known by the name of Childing Sweet Williams, or Childing Pink.—Gerarde calls it Catchfly or Limewort: but he has confounded it with the true Catchfly.

8. It is doubtful whether this be a diſtinct ſpecies. Haller thinks it is not; Leers ſays it is hardly different; and Linneus affirms it to be the daughter of the Childing Pink, and of courſe very nearly allied to it. All the ſpecimens that Dr. Smith has ever ſeen were evidently D. prolifer: there is little doubt, therefore, but that it is no more than a variety of that ſpecies.—The leaves are narrower; the ſtem is branched; the flowers ſolitary, not aggregate. The calyx has four pairs of ſcales, the inner ones gradually larger, and more obtuſe. The corolla very ſhort, ſcarcely prominent beyond the tube[m]. Annual.]

It is a very diminutive plant, ſeldom riſing ſix inches high, terminated by a ſingle flower, of a pale red colour; the leaves are ſhort and narrow, and grow in cloſe heads. [Native of Germany and Switzerland.

9. This ſpecies, ſo well known in its improved ſtate, in gardens, is thus deſcribed in its natural ſtate, by Haller.—Root large, woody, branched. Stem a foot or eighteen inches high, decumbent at bottom, jointed, branched. Leaves glaucous, ſmooth, linear, a line in breadth. Every branch is terminated by one, two, or three flowers. The calycine ſcales are ſhort, broad and awned; but ſometimes they are wholly wanting. The petals have long claws, the lamina or border repreſents the ſector of a circle, and is finely ſerrated about the edge; it is not lanuginous at the baſe: the claw is green, the border is roſe-coloured. This flower has a pleaſant ſmell, but not the ſpicy odour of the garden plant. Seguier ſays that it is without ſmell. Scopoli adds that the ſtem is angular, and that the leaves, when viewed through a magnifying glaſs, appears finely toothed.

It grows on rocks and walls, and in dry ſoils.

This fine flower, which has long been deſervedly eſteemed, both for its ſuperior beauty, and rich ſpicy odour, muſt have been unknown to the ancients, in its cultivated improvement; otherwiſe it muſt have been deſcribed by the naturaliſts, and ſung by the poets, as well as its rival the roſe. Carnations and Pinks have, however, been cultivated time immemorial in Europe, and were among the few favourite flowers of our remote anceſtors.

CARNATIONS.

Parkinſon, in his Paradiſus, publiſhed in 1629, has given a very full account, with figures, of the Carnations then in cultivation. He divides them into Carnations, or the greateſt ſorts in leaf and flower, and Gilloflowers, or ſuch as are ſmaller in both reſpects. The orange-tawney or yellow Gilloflower, now little eſteemed, had then been lately introduced. Gerarde (1597) informs us, " that a worſhipful merchant " of London, Maſter Nicholas Lete, procured it " from Poland, and gave him thereof for his garden, " which before that time was never ſeen nor heard " of in theſe countries."

Of Carnations, the diligent Parkinſon recites nineteen, and of Gilloflowers thirty varieties. Though theſe have been ſupplanted by modern flowers, and the floriſts are daily producing new ones, yet it may not be unacceptable to the curious, to recite the names of thoſe which were in favour almoſt two centuries ago.

CARNATIONS. *Gray*, *red* and *blue Hulo*. *Grimelo* or *Prince*. *White* or *delicate*. *French*. *Grand*, or *great Harwich*, or *old Engliſh*. *Chryſtall* or *Chryſtalline*. *Red Chryſtall*. *Fragrant*. *Striped Savadge*; *bluſh*, and *red Savadge*. *Oxford*. *King's* or *ordinary Briſtow*. *Greateſt Granado*. *Gran Pere*. *Camberſine*. *Great Lombard Red*.

GILLOFLOWERS. *Luſty Gallant* or *Weſtminſter*. *Briſtol blue*. *Briſtol bluſh*. *Red Dover*. *Light* or *White Dover*. *Fair maid of Kent*, or *ruffling Robin*. *Queen's*. *Dainty*. *Braſil*. *Granado*. *Turky*. *Poole*. *Light* or *pale Pageant*. *Sad Pageant*. *Bradſhaw's dainty Lady*. *Beſt White*. *London White*. *Stamell*. *Purple*. *Gredeline*. *Blue*. *Bluſh*. *John Wittie his great tawny*. Divers other Tawnies. Many ſorts of Bluſhes. Some varieties of reds. *Striped Tawny*.

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[h] Mill. fig.

[i] Haller, Pollich, Krocker.

[k] Thunberg.

[l] Woodw. Mſs. Withering, Haller, Pollich.

[m] Linn. ſpec.

Marbled Tawny. Maſter Tuggie's Princeſs. Flaked, feathered, and *ſpeckled Tawny. Maſter Tuggie his Roſe Gilloflower.*

This Maſter Tuggie was the moſt famous man of his time for the cultivation of theſe fine flowers: and accordingly Johnſon (Ger. herb. edit. 1636. p. 589) after referring to the work of his friend Mr. John Parkinſon, adds, " if they require further ſatisfaction, let them at the time of the year repair to the garden of Miſtreſs Tuggy, the wife of my late deceaſed friend Mr. Ralph Tuggy, in Weſtminſter, which in the excellency and variety of theſe delights exceedeth all that I have ſeen."

Gerarde has ſeveral names beſides Clove-Gilloflowers and Carnations:—as Sops in wine, Pagiants or Pagion colour, Horſe-fleſh, Blunket, &c. expreſſive of the different colours.—The old name *Gilloflower,* was ſuppoſed by Parkinſon to be corrupted from July-flower, and Ray has adopted the notion; but it is erroneous: for it is evidently derived from the French *Giroflée* or *Giroflier,* and accordingly Chaucer writes it *Girofler.*

Many of the fine varieties of Carnation eſteemed in former times are figured in Parkinſon's Paradiſus, Hortus Eyſtettenſis, De Bry's Florilegium, Paſſæi Hortus Floridus, Swertii Florilegium, &c. And ſome of the modern ones, by Mr. Sowerby, in his Flora Luxurians. Rea (in his Flora, 1702.) has a liſt of 360 good ſorts of Carnation.]

Modern Floriſts diſtinguiſh the Carnation into four claſſes.

Firſt *Flakes,* of two colours only, and their ſtripes large, going quite through the leaves. One of theſe, the Roſe-leaved Flake, is figured by Miller, t. 121.

Second *Bizarrs;* with flowers ſtriped or variegated with three or four different colours, in irregular ſpots and ſtripes. See Curtis's magazine, t. 39.

Third *Piquettes* or *Piquettées;* having a white ground, and ſpotted or pounced with ſcarlet, red, purple, or other colours.

Fourth *Painted Ladies;* theſe have the petals of a red or purple colour on the upper ſide, and are white underneath.

Of each claſs there are numerous varieties, but chiefly of the third, which ſome years ago was in moſt eſteem with floriſts; but of late years the Flakes have been in greater requeſt. To enumerate the varieties would be needleſs, ſince they are not permanent, and every country produces new flowers almoſt every year, which though at firſt raiſing they may be greatly valued, in two or three years become ſo common as to be of little worth, eſpecially if they are defective in any one property; and are turned out to make room for new comers. For the variety of pompous names we refer therefore to the liſts publiſhed yearly by floriſts and nurſery-men, who either raiſe theſe flowers from ſeed, or import them from abroad.

The following are what the floriſts call the good properties of a Carnation.

1. The ſtem of the flower ſhould be ſtrong, and able to ſupport the weight of the flower without hanging down.

2. The petals ſhould be long, broad and ſtiff, and pretty eaſy to expand; or, as the floriſts term it, ſhould make free flowers.

3. The middle of the flower ſhould not advance too high above the other parts.

4. The colours ſhould be bright, and equally marked all over the flower.

5. The flower ſhould be very full of petals, ſo as to render it, when blown, very thick in the middle, and the outſide perfectly round.

[To this we may add, that the ſtem ſhould not only be ſtrong, but ſtraight, and not leſs than thirty, or more than forty-five inches high. The flower ſhould be at leaſt three inches in diameter, and the petals well formed, neither ſo many as to appear crowded, nor ſo few as to appear thin. The lower or outer circle of petals, commonly called the guard leaves, ſhould be particularly ſubſtantial; they ſhould riſe perpendicularly about half an inch above the calyx, and then turn off gracefully in a horizontal direction, ſupporting the interior petals; which ſhould decreaſe gradually in ſize, as they approach the centre, which ſhould be well filled with them. All the petals ſhould be regularly diſpoſed, and lie over each other in ſuch a manner as that their reſpective and united beauties may meet the eye all together; they ſhould be nearly flat, or at moſt have a ſmall degree of inflection at the broad end: their edges ſhould be perfectly entire, without notch, fringe, or indenture. The calyx ſhould be at leaſt an inch in length, ſufficiently ſtrong at top to keep the baſes of the petals in a cloſe and circular body. The colours ſhould be diſtinct, and the ſtripes regular, narrowing gradually to the claw of the petal, and there ending in a fine point. Almoſt one half of each petal ſhould be of a clear white, free from ſpots.

PINKS.

Pinks do not ſeem to have attracted any great notice among our anceſtors. Parkinſon has given very few varieties: as white, red, purple, Granado, matted and bluſh, both ſingle and double. Rea ſays, that there are many ſorts, but of little eſteem, ſerving only for the ſides of borders in ſpacious gardens, and ſome of them for Poſies, mixed with the buds of the Damaſk Roſe; and that the beſt are the feathered Pinks. It is only within the preſent century, and particularly of late years, that Pinks have been much improved and varied, ſo as to be greatly valued among floriſts.]

The principal varieties are, the Damaſk, white Shock, Pheaſant Eye, common Red, Cob's, Dobſon's, white Cob, and Bat's. The old man's Head, and Painted Lady Pinks rather belong to the Carnation.

The Damaſk Pink is the firſt of the double ſorts in flower. This has but a ſhort ſtalk; the flower is not very large, and not ſo double as many others; the colour is of a pale purple, inclining to red, but it is very ſweet.

The next which flowers is the white Shock, which was called from the whiteneſs of its flowers, and the borders of the petals being much jagged and fringed, the ſcent of this is not ſo agreeable as of ſome others.

Then come all the different varieties of Pheaſants Eye, of which there are frequently new varieties raiſed, which are either titled from the perſons who raiſed them, or the place where they were raiſed; ſome of theſe have very large double flowers, but thoſe which burſt their pods are not ſo generally eſteemed.

The Cob Pink comes after theſe to flower; the ſtalks of this are much taller than thoſe of any of the former; the flowers are very double, and of a bright red colour; this having the moſt agreeable odour of all the ſorts, merits a place in every good garden. The time of the Pinks flowering is from the latter end of may to the middle of july, and frequently that ſort of Pheaſant Eye which is called Bat's Pink, will flower again in autumn.

The old Man's Head Pink, and the painted Lady, do not flower till july, coming at the ſame ſeaſon with the Carnation, to which they are more nearly allied than to the Pink. The firſt, when it is in its proper colours, is purple and white ſtriped and ſpotted, but this frequently is of one plain colour, which is purple; this ſort will continue flowering till the froſt in autumn puts a ſtop to it, and the flower having an agreeable ſcent, renders it valuable. The painted Lady is chiefly admired for the livelineſs of its colour; for it is not ſo ſweet, or of ſo long continuance as the other.

[Pinks are here kept along with Carnations, but they do not ſeem to be all varieties of the ſame ſpecies: probably the Red Pinks take their riſe from this, whilſt the Pheaſant Eye Pinks ſeem to derive their origin from *D. plumarius.* Some give them all as variations of *D. deltoides,* which is not likely.

10. The herb of this ſort is very like that of D. Caryophyllus. But it ſcarcely multiplies itſelf by the root. The ſtem has only three or four ſimple, long, one-flowered branches. The calyx has only two, ſhort, acute, not acuminate ſcales. The corolla is yellow, and underneath pale green: the petals are revolute on the ſides, hence they are convex, not ſpread out flat, but diſtant, ſhorter than the tube of the calyx, very obtuſe, ſlightly emarginate, ſcored with a line. Stamens white, the length of the calyx. Piſtils finally becoming of the length of the corolla. The flower opens at half after twelve at noon, and cloſes at ten o'clock at night.—Obſerved near Conſtantinople by Forſkaehl, and in Paleſtine by Haſſelquiſt[n]. Dr. Smith remarks, that this is the only ſort he has ſeen, which has the calyx ſmooth in the lower part, while the upper half is ſtriated, and that very ſtrongly and accurately.

11. Barren ſtems numerous, reclining, putting forth roots, flowering ſtems ſix to eight inches high, columnar below, ſquare at top, ſlender, weak, but uſually erect, ſometimes ſimple, ſometimes branched or dichotomous, ſwollen at the joints, ſlightly pubeſcent. Leaves in pairs at each joint, linear or ſubulate, nearly the length of the internode, converging to the ſtalk, and embracing it at the baſe, ſlightly pubeſcent; thoſe of the barren branches narrower. Peduncles round, downy, from the ends of the ſtem and branches, ſingle, or two from the ſame joint, each bearing one flower. Petals toothed at the edge, bright red above, pale beneath. According to Ray reddiſh, with a ring of deeper-coloured dots ſurrounding the eye—with dark purpliſh teeth near the throat, and beſet with white ſilvery points, with hairs proceeding from them, as Pollich has it[o]. The petals vary much in colour, being ſometimes of a very pale fleſh colour, ſometimes deep red, but they are always marked with a ring of deeper red dots near the centre of the flower[p].

Dillenius diſtinguiſhes this by the ſcales of the calyx being much more pointed; the corolla of a deeper colour, with numerous ſilvery dots, and its flowering later, namely in june and july. It continues flowering till late in autumn.

Paſtures and heaths, on a light ſoil, in Sweden, Denmark, Germany, Spain; in England not uncommon, as on Hampſtead heath, Dupper's-hill near Croydon, about Hampton Court Park, Beacon-hill near Feverſham in Kent, not far from Slough near Windſor. In Bedfordſhire near Sandy; Cambridgeſhire, Suffolk, Norfolk, at Cley, near Hillborough in the way from Brandon, &c. Nottinghamſhire, Derbyſhire, Weſtmoreland, Shropſhire, Somerſetſhire; and King's Park, Edinburgh.

There is a variety common in gardens; which has white flowers, with a beautiful purple ring, and leaves rather more glaucous than in the common ſort. This is the true D. glaucus of Linneus, and perhaps of Lightfoot. It has, indeed, generally four ſcales to the calyx, but ſo has D. deltoides frequently[q].

12. Leaves linear, very narrow, three-ſided, channelled, ſtiffiſh, connate, in tufts, ſcabrous on the edge and keel. Stem filiform, proſtrate, bearing one or two flowers, which are remote and ſweet-ſcented. Calycine ſcales orbiculate, preſſed cloſe. Petals blood-red, crenate, not feathered or villoſe. Styles ſtanding out, recurved. Perennial.—Native of mountains in the South of Europe[r]. This is the ſame with D. virgineus. n. 21[s].

13. The circle is purple, and there is a purple tinge on the upper ſurface from a number of very fine lines. Stem rather angular; that and the leaves covered with a microſcopical woollyneſs. Peduncles ſolitary, or in pairs. Calycine-ſcales in two oppoſite pairs, ſkinny at the edges, the two inner ones largeſt. Teeth of the calyx ſkinny at the edges, and pointed. Petals ſtained with pink at the baſe of the lamina. According to Dillenius, there is a purple circle on the corolla, and the petals have a purple tinge from a number of very fine lines on the upper ſurface. Willich ſays, that the circle or ring is double, the inner pale, the outer broader and ſcarlet, both toothed. Anthers gray. Stigmas white, woolly. Receptacle nearly as long as the ſeed-veſſel[t]. The flowers have no ſcent.

Dr. Smith, to whom we are much obliged for elucidating this genus, deſcribes it thus. Root woody. Stalks ſeveral, a ſpan high, erect, ſimple, ſmooth, quadrangular, having two or three pairs of leaves on them, one-flowered, ſcarcely ever two-flowered. Leaves linear-lanceolate, bluntiſh, glaucous. Scales of the calyx only one third of the length of the tube, ovate-roundiſh, bluntly mucronate, ſtriated. Petals fleſh-coloured, with a double row of blunt notches, marked with lines, and bearded at the baſe[u].

Native of Switzerland and England. On Cheddar rocks in Somerſetſhire.

14. Petals white above, greeniſh white underneath, with the tip violet-coloured on both ſides. This differs from the foregoing, in having the petals ſcarcely crenate, and in not having the purple circle on them.—It is a native of the Cape of Good Hope, where it was obſerved by Mr. Francis Maſſon; introduced 1787. It is perennial, and flowers in auguſt[x].]

15. The flower ſtems of the *China Pink* are from ſix to eight or nine inches high, branching out on every ſide; the branches grow erect, and are terminated each by one flower. The flowers have no ſcent, but having a great variety of colours, they are a conſiderable ornament to the flower-garden from july until autumn froſts put a ſtop to them. They have been greatly improved by culture; ſome flowers being as full of petals as the beſt double Pinks, and diſplaying the moſt glowing and vivid red colours.

This ſpecies is a native of China, whence the ſeeds were ſent by the French miſſionaries to Paris, about the year 1705. The flowers which were for many years produced in the European gardens were ſingle, till about the year 1719, when many double flowers were produced in ſome of the gardens at Paris; but whether theſe aroſe from ſeeds of the ſingle ſort, or from new ſeeds obtained from China, is difficult to determine; the firſt time I ſaw plants with double flowers in any of the Engliſh gardens was in the year 1722. The roots will often laſt two years in a dry ſoil; but they are generally raiſed from ſeeds every year[y].

[In the nurſery-grounds, it is generally known by the name of *Indian Pink*. Dr. Smith mentions his having a plant from Mr. Sikes's garden at Hackney, which ſeems to be a mule between this ſpecies and D. barbatus or Sweet William.

16. Wild about Montpellier and Verona, and in Piedmont. Perennial.

17. Stems aſcending, a foot or eighteen inches in height, branched. Leaves of a grayiſh or glaucous hue, a line and half wide, very ſharp at the end. Flowers one, two, ſeldom three, at the ends of the branches; ſweet-ſcented. Calyx glaucous-green, longer than in the other ſpecies. Petals large, light red or bright purple, ſometimes white, with a circle of red; deeply jagged, having a red down at the baſe of the lamina or border: anthers red. Capſule ſhorter in proportion than in the other ſpecies[z].

It flowers from june to auguſt, and is perennial.

Native of Europe and North America, on rocks, mountain paſtures, and dry woody places. Cultivated in 1629[a].

18. Stalks a ſpan high, ſmooth and even. Leaves linear, very narrow and ſhort, bluntiſh, ſmooth and

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[n] Linn. ſpec.
[o] Ray, Pollich, Withering, Woodw. Mſs.
[p] Engl. bot.
[q] Ibid.
[r] Linn. ſuppl.
[s] Smith in Linn. tranſ. 2. p. 295.

[t] Withering and Stokes.
[u] Linn. tranſ. 2. 302.
[x] Hort. kew.
[y] Mill. fig.
[z] Krock. Scop. Haller.
[a] Park. parad.

even. Flowers two or four on a ſtalk, erect. Tube of the calyx ſlender, ſtriated, with lanceolate, ſtraight, very ſharp teeth, with four ſcales at the baſe, exactly oval, ſtriated on the back, with a ſhort ſpreading dagger-point. Petals narrow, irregularly cut to the very baſe into very fine ſegments. It varies with a white flower. Found in Armenia by Tournefort [b].

19. The ſtem is a foot or eighteen inches in height, procumbent at the baſe, and then erect, round, ſomewhat two-edged on the upper part, ſmooth, branching only at top. Leaves like thoſe of narrow-leaved Sweet-William, connate, lanceolate-linear or linear-ſubulate, acute, quite entire, bright green, ſmooth, marked with lines and a riſing nerve, rough on the edge, green not glaucous. Flowers erect, uſually two terminating each branch, on ſhort peduncles; ſometimes there are more, and ſometimes there is only one. Calyx ſlender, ſtriated, with erect lanceolate ſharp teeth. Calycine ſcales four, ſometimes more, obovate, pointed, ſtriated, one third the length of the calyx. Petals pale red, ſometimes white, hairy at the baſe of the border, ſprinkled with bloody ſpots. The flowers ſmell very ſweet, eſpecially in the evening. Capſule cylindrical, a little longer than the calyx, glittering like gold duſt, ſmooth, four-parted [c]. According to ſome it is perennial, according to others biennial, and even annual. Mr. Miller ſays that the roots will live three or four years, but that the flowers are in their greateſt beauty the ſecond year from ſeeds. It is probably therefore biennial naturally.

Native of Denmark, Lapland, Germany, Switzerland, France, Italy, Spain: flowering from july to ſeptember. I gathered it in flower in auguſt 1779, on mount Scheidegg, in going from the vale of Haſli to that of Grindelwald, in Switzerland. Dr. Smith obſerved it near Geneva.

20. Stalks diffuſed, woody at bottom, twiſted, branching very much; flowering branches aſcending, a foot long, leafy, round, ſmooth, divided at top into two or three branches, which are one-flowered. Leaves awl-ſhaped, mucronate and pungent, glaucous, rugged on the edge; ſtem-leaves ſhorter than the internodes. Flowers fleſh-coloured, void of ſcent. Calycine ſcales ſix, the inner ones often membranaceous about the edge. Tube of the calyx ſtriated, gradually narrowing towards the top; teeth erect, membranaceous about the edge. Corolla ſmall, crenate, beardleſs.

Native of the South of France, near the coaſt. Obſerved by Brouſſonet [d].

21. That this bears a great affinity to *D. plumarius*, is clear from the throat of the petals; which are more oblong, divided, and cut beyond the middle of the diſk, (whereas in that they are only multifid) at the baſe is a ſharp, livid ſpot, with purpliſh hairs ſcattered over it [e].

Stem a finger or ſpan in length, erect, round, almoſt naked, having only one pair of leaves on it, and ſuſtaining one flower. Root-leaves abundant, in bundles, ſmooth, narrow, obtuſe, ſtiffiſh. Petals white, not crenate, reſembling thoſe of *D. plumarius*, and ſmelling very ſweet, eſpecially in the evening [f].

According to Scopoli, the leaves are tooth-letted; and the four calycine ſcales lanceolate, two of them longer than the lamina of the petal.

Mr. Miller ſays that the flower is ſweet, but pale-coloured and ſmall.

Native of Scania, in drifting ſand. Sileſia, on the borders of Saxony [g]. In Carniola, on mountains [h]; in Piedmont [i]. On old walls and buildings in many parts of England [k]. The only certain authority, however, on which this ſpecies reſts, is that of Linneus. That which occurs on old walls in England ſeems to be the common Pink of the gardens, D. Caryophyllus [l].

It flowers in may and june.

22. Root woody, perennial, putting forth many ſtems of a finger's length, having three joints. Leaves on the ſtem linear, bluntiſh, flat; root-leaves in tufts, linear-lanceolate. Inner calycine ſcales only half the length of the outer ones. Corolla large; petals the length of the calyx, round, with numerous very ſhort teeth, and the throat a little villoſe [m]. The leaves are ſometimes obtuſe, ſometimes acute [n].

Native of the Alps; Sileſia, Auſtria, Stiria, Siberia, in rough, ſtony places; flowering in june and july.

23. Root perennial. Lower leaves copious, erect, in an imbricate tuft, acuminate, like thoſe of Thrift. Stems few, a ſpan in height, having four very ſimple joints, with ſmaller leaves, the uppermoſt very ſmall, ariſing from a perfoliate ſheath. Calycine ſcales broad, ovate, acute; the two pairs remote. Border of the corolla ſhorter by half than the tube of the calyx, and rounded. Only one flower uſually on the ſtem; but ſometimes a ſecond from the upper axil [o].—Leaves ſhort, narrow, toothletted. Petals emarginate, crenate [p]. Stems decumbent, not proſtrate; there are ſeveral flowers on a ſtem, it ſhould be removed therefore to the third ſection; the flowers are inodorous.

Native of the Alps; the South of France, Auſtria, Carniola, &c. Dr. Smith gathered it on the limeſtone rocks oppoſite the poſt-houſe on mount Cenis, in auguſt 1787 [q]. It flowers in june and july.

Cultivated in 1732, by James Sherard, M.D. [r]. Mr. Miller ſeems to confound it with D. deltoides.

24. Stalks eighteen inches and more in height, white, round, ſmooth, jointed, woody, branched. Leaves glaucous, an inch and half long, narrow, rigid, mucronate. Calyx echinate. Petals pale purple, ſtriated, a little beyond the middle marked with a dark red dotted line, forming a ring, below which they are lanuginous; they are cut about the edge [s]. Native of the iſland of Candia.

25. Stem twiſted, two feet high, woody, brittle, hard, covered with a dark, cloven bark. Leaves an inch long, and three or four lines broad, obtuſe, fleſhy, brittle, bitter as gall, growing in tufts. Flowers commonly ſolitary, but ſometimes ſeveral together. Petals an inch and half long. Native of the iſland of Seriphos in the Levant [t].

It is only a variety of the preceding, with ſhorter leaves a little broader, and blunt at the end [u].

26. Stem ſhrubby, with a lacerated chinky bark, very much branched, the ſmall branches with cloſe tufts of leaves at the ends: flowering-branches elongated, round and ſmooth, with two or three pairs of leaves only, much ſhorter than the internodes. Leaves very narrow, mucronate-pungent, channelled, with a ſmooth even edge. Flowers two or three at the tops of the branchlets, pedicelled, ſmall. Calycine ſcales blunt, ſcarcely ſtriated, membranaceous round the edge, and at the top; tube ſtriated, with ſharp teeth, and not membranaceous about the edge. Petals crenate and gaſhed. Styles capillary, ſtanding out.

Native of the iſland of Candia, where it was obſerved by Tournefort [x].

27. The ſtems are full of alternate branches. The ſtem-leaves are connate and ſheathing at the baſe, crowded, and covering the branches with their ſheaths: the leaves on the branches are ſlightly connected with diſtant ſheaths: all are flattiſh, acuminate, and ſomewhat prickly. The peduncles ariſe from the ends of the lateral branchlets; the pedicels ſuſtain from one to three flowers. Calycine

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[b] Smith in Linn. tranſ. 2. 300.
[c] Haller, Pollich, Krock. Smith ſpic.
[d] Smith in Linn. tranſ.
[e] Linn. ſpec.
[f] Krocker & Linn. ſuec.
[g] Krocker.
[h] Scopoli.
[i] Allioni.
[k] Miller.
[l] Smith in Linn. tranſ. 2. 296.
[m] Linn. ſpec.
[n] Smith.
[o] Linn. ſpec.
[p] Scopoli.
[q] Linn. tranſ. 2. 297.
[r] Hort. kew.
[s] Ray from Bauh. prodr. & hiſt.
[t] Tourn. voy.
[u] Smith.
[x] Ibid.

ſcales four, lanceolate; a little ſhorter than the calyx: petals quite entire, with the lamina of the ſame length with the claw. Native of Spain, on the coaſt [y].—It flowers from auguſt to october; and was introduced in 1781, by Monſ. Thouin [z].

This not being more ſhrubby than many others, accounted by Linneus to be herbaceous, ought to be placed with thoſe ſpecies, to which it is, in other reſpects, naturally allied [a], namely at the end of the ſecond diviſion after n. 20.—Virgineus, n. 23. ſhould alſo be in the ſame ſection or diviſion, after attenuatus & pungens. Cæſius, n. 13. ſhould be removed into the third ſection, with alpinus, & arenarius [b].

28. Plant a ſpan in height. Root woody. Root-leaves in a tuft, linear-ſubulate. Stems ſeldom two-flowered, ſmooth. Tube of the calyx cylindric, with four ovate, ſharp ſcales at the baſe. Petals pale purple. It is diſtinguiſhed from *D. pungens* by the calycine ſcales, and the ſtems being herbaceous; from all the other ſpecies by the linear ſhape of the leaves. There is a variety with roundiſh petals, white, and red. Native of Aragon [c].

29. Root perennial, thickiſh, and ſomewhat branched. Stem herbaceous, a foot high. Leaves lanceolate, glaucous; thoſe next the root obtuſe; on the ſtem acute, recurved. Flowers panicled. Calycine ſcales ſix, ſometimes eight, ſeldom four, awl-ſhaped, dilated at bottom, membranaceous, a little ſhorter than the tube of the calyx. Petals yellowiſh, with a few hairs and red dots within at bottom; the claws are the length of the calyx. Filaments filiform, a little longer than the calyx. Styles ſwelling at the baſe, ſcarcely the length of the ſtamens.

Native of mount Libanus [d].

This belongs to the firſt ſection.

30. This plant grows in a tuft. The leaves are acute, ſmooth, and half an inch long. Flowers ſeſſile, ſolitary. Calyx the length of the leaves, ſmooth, ſtriated: ſcales ſix, oblong, acuminate, ſhorter than the flower, the outer ones ſmaller. Petals toothed [e].]

PROPAGATION AND CULTURE.

1. *D. barbatum*, or *Sweet-William*.—Of Sweet-Williams there is a great variety of different colours, which are ſingle, and three or four with double flowers.

Some of the ſingle flowers have very rich colours, which frequently vary in thoſe of the ſame bunch; there are others with fine variegated flowers, and others whoſe middles are of a ſoft red, bordered with white, which are called Painted Ladies; but where perſons are deſirous to preſerve any of theſe varieties in perfection, the beſt flowers of each ſhould be particularly marked, and no other permitted to ſtand near them, leſt their farina ſhould impregnate them, which would cauſe them to vary.

That which is called the Painted Lady Sweet-William, is a very beautiful variety; the ſtalks of this do not riſe ſo high as moſt of the others; the bunches of flowers are larger, and produced more in the form of an umbel, the flowers ſtanding equal in height, make a better appearance: there are others whoſe ſtalks riſe three feet high, and the flowers of a very deep red or ſcarlet colour. Theſe all flower at the ſame time with the Carnations, which renders them leſs valuable, becauſe they have no ſcent.

[Theſe plants muſt be renewed annually, to have them in perfection; for though they are perennial, yet they are ſubject to decay. If there are not ſo many varieties as of the Pink and Carnation, it is becauſe this ſpecies has not attracted ſo much attention.]

The ſingle ſorts are generally propagated by ſeeds, which muſt be ſown the latter end of march or the beginning of april, in a bed of light earth, and in june they will be fit to tranſplant out; at which time prepare ſome beds ready for them, and ſet them at ſix inches diſtance every way: in theſe beds they may remain till michaelmas, when they may be tranſplanted into the borders of the pleaſure-garden or wilderneſs. Theſe will flower the next year in june, and in auguſt perfect their ſeeds, which ſhould be ſaved from the beſt-coloured flowers for a ſupply.

They may alſo be propagated by ſlipping their roots at michaelmas; but this is ſeldom practiſed, becauſe ſeedling roots always blow the ſtrongeſt, and produce new varieties.

Double Sweet-Williams are propagated by [cuttings, pipings, or] layers, as Pinks and Carnations: they love a middling ſoil, not too light, nor too heavy or ſtiff, nor too much dunged, which very often occaſions their rotting. Theſe continue flowering a long time, and are extremely beautiful, eſpecially the Mule, which produces two full blooms of flowers, one in june, and the other in july: it is very ſubject to canker and rot, eſpecially if planted in a ſoil too wet or dry, or if watered with ſharp ſpring water. Theſe flowers planted in pots, are very proper to adorn court-yards.

D. Caryophyllus. Carnation.

Theſe flowers are propagated either from ſeeds (by which new flowers are obtained), or from layers, for the increaſe of thoſe ſorts which are worth maintaining; but I ſhall firſt lay down the method of propagating them from ſeeds, which is thus:

Having obtained ſome good ſeeds, either of your own ſaving, or from a friend that you can confide in; about the middle of april, prepare ſome pots or boxes, according to the quantity of ſeed you have to ſow, filled with freſh light earth mixed with rotten neats dung, which ſhould be well incorporated together; then ſow your ſeeds thereon, but not too thick, covering it about a quarter of an inch with the ſame light earth, placing the pots or caſes ſo as to receive the morning ſun only till eleven of the clock, obſerving alſo to refreſh the earth with water as often as it may require. In about a month's time your plants will come up, and if kept clear from weeds, and duly watered, will be fit to tranſplant about the end of july; at which time prepare ſome beds (of the ſame ſort of earth as was directed to ſow them in) in an open airy ſituation, in which plant them at about three inches ſquare, obſerving to water and ſhade them till they have taken new root, obſerving to keep them clear from weeds; in theſe beds they may remain until the end of auguſt, by which time they will have grown ſo large as almoſt to meet each other; then prepare ſome more beds of the like good earth, in quantity proportionable to the flowers you have raiſed, in which plant them at ſix inches diſtance each way, and not above four rows in each bed, for the more conveniently laying ſuch of them as may prove worth preſerving, for in theſe beds they ſhould remain to flower.

The alleys between theſe beds ſhould be two feet wide, that you may paſs between the beds to weed and clean them. If the ſeaſon ſhould prove very dry at this time, they ſhould not be tranſplanted till there is ſome rain; ſo that it may happen to be the middle, or latter end of ſeptember ſome years, before there may be wet enough to moiſten the ground for this purpoſe; but if there is time enough for the plants to get good root before the froſt comes on, it will be ſufficient. If the winter ſhould prove ſevere, the beds ſhould be arched over with hoops, that they may be covered with mats, otherwiſe many of the plants may be deſtroyed, for the good flowers are not ſo hardy as the ordinary ones. There will be no other culture wanting to theſe, but to keep them clean from weeds, and when they ſhoot up their ſtalks to flower, they muſt be ſupported by ſticks to prevent their breaking. When your flowers begin to blow, you muſt look over them to ſee which of them proffer to make good flowers, which as ſoon as you diſcover, you ſhould

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[y] Linn. mant.
[z] Hort. kew.
[a] Smith.
[b] Ibid.
[c] D'Aſſo.
[d] Billardiere.
[e] Vahl.

lay down all the layers upon them; thoſe which are well marked, and blow whole without breaking their pods, ſhould be reſerved to plant in borders, to furniſh you with ſeed; and thoſe which burſt their pods, and ſeem to have good properties, ſhould be planted in pots, to try what their flowers will be, when managed according to art; and it is not till the ſecond year that you can pronounce what the value of a flower will be, which is in proportion to the goodneſs of its properties.

Having made choice of ſuch of your flowers as promiſe well for the large ſort, theſe you ſhould mark ſeparately for pots, and the round whole blowing flowers for borders; you ſhould pull up all ſingle flowers, or ſuch as are ill-coloured, and not worth preſerving, that your good flowers may have the more air and room to grow ſtrong; theſe having been laid at a proper ſeaſon, as ſoon as they have taken root, which will be ſome time in auguſt, they ſhould be taken off, and planted out, thoſe that blow large, in pots, and the others in borders.

Of late years the whole-blowing flowers have been much more eſteemed than thoſe large flowers which burſt their pods, but eſpecially thoſe round flowers which have broad ſtripes of beautiful colours, and round Roſe leaves, of which kinds there have been a great variety introduced from France within theſe few years; but as theſe French flowers are extremely apt to degenerate to plain colours, and being much tenderer than thoſe which are brought up in England, there are not ſuch great prices given for the plants now, as have been a few years paſt; from the preſent taſte for theſe whole-blowing Flake flowers, many of the old varieties, which had been turned out of the gardens of the floriſts many years ago, to make room for the large flowers, which were then in faſhion, have been received again; and large prices have been paid for ſuch flowers as ſome years before were ſold for one ſhilling a dozen, or leſs, which is a ſtrong proof of the variableneſs of the fancies of the floriſts.

But I ſhall now proceed to give ſome directions for propagating theſe flowers by layers, and the neceſſary care to be taken in order to blow them fair and large.

The beſt ſeaſon for laying theſe flowers is in june, as ſoon as the ſhoots are ſtrong enough for that purpoſe, which is performed in the following manner: after having ſtripped off the leaves from the lower part of the ſhoot intended to be laid, make choice of a ſtrong joint about the middle part of the ſhoot, not too near the heart of the ſhoot, nor in the hard part next the old plant; then with your pen-knife make a ſlit in the middle of the ſhoot from the joint upwards half way to the other joint, or more, according to their diſtance; then with your knife cut the tops of the leaves, and alſo cut off the ſwelling part of the joint where the ſlit is made, ſo that the part ſlit may be ſhaped like a tongue; for if that outward ſkin is left on, it would prevent their puſhing out roots; then having looſened the earth round the plant, and, if need be, raiſed it with freſh mould, that it may be level with the ſhoot intended to be laid down, leſt by the ground being too low, by forcing down the ſhoot, you ſplit it off; then with your finger make a hollow place in the earth, juſt where the ſhoot is to come, and with your thumb and finger bend the ſhoot gently into the earth, obſerving to keep the top as upright as poſſible, that the ſlit may be open; and being provided with forked ſticks for that purpoſe, thruſt one of them into the ground, ſo that the forked part may take hold of the layer, in order to keep it down in its proper place; then gently cover the ſhank of the layer with the ſame ſort of earth, giving it a gentle watering to ſettle the earth about it, obſerving to repeat the ſame as often as is neceſſary, in order to promote their rooting. In about five or ſix weeks after this, the layers will have taken root ſufficient to be tranſplanted; againſt which time be provided with proper earth for them, which may be compoſed after the following manner:

Make choice of ſome good up-land paſture, or a common that is of a hazel earth, or light ſandy loam; dig from the ſurface of this your earth about eight inches deep, taking all the turf with it; let this be laid in a heap to rot and mellow for one year, turning it once a month, that it may ſweeten; then mix about a third part of rotten neats dung, or for want of that, ſome rotten dung from a Cucumber or Melon-bed; let this be well mixed together, and if you can get it time enough beforehand, let them lie mixed ſix or eight months before it is uſed, turning it ſeveral times, the better to incorporate their parts.

Obſerve, that although I have mentioned this mixture as the beſt for theſe flowers, yet you muſt not expect to blow your flowers every year equally large in the ſame compoſition; therefore ſome people alter their compoſitions every year in this manner, viz. one year they mix the freſh earth with neats dung, which is cold; the next year with rotten horſe dung, which is of a warmer nature, adding thereto ſome white ſea ſand to make the earth lighter.

But, for my part, I ſhould rather adviſe the planting two or three layers of each of the beſt kinds in a bed of freſh earth not over dunged, which plants ſhould only be ſuffered to ſhew their flowers, that you may be ſure they are right in their kind and colours; and when you are ſatisfied in that particular, cut off the flower-ſtems, and do not ſuffer them to ſpend the roots in blowing, by which means you will ſtrengthen your layers. And it is from theſe beds I would make choice of ſome of the beſt plants for the next year's blowing, always obſerving to have a ſucceſſion of them yearly, by which means you may have every year fine flowers, provided the ſeaſon proves favourable: for it is not reaſonable to ſuppoſe, that the layers taken from ſuch roots as have been exhauſted in producing large flowers, and have been forced by art to the utmoſt of their natural ſtrength, ſhould be able to produce flowers equally as large as their mother root did the year before, or as ſuch layers as are freſh from a poorer ſoil, and in greater health can do. But this being premiſed, let us proceed to the planting of theſe layers, which, as I ſaid before, ſhould be done in auguſt, or the beginning of ſeptember.

The common method uſed by moſt floriſts is, to plant their layers at this ſeaſon, two in each pot, the ſize of which pots are about nine inches over in the clear at the top; in theſe pots they are to remain for bloom; and therefore in the ſpring of the year, they take off as much of the earth from the ſurface of the pots as they can, without diſturbing their roots, filling the pots up again with the ſame good freſh earth as the pots were before filled with. But there is ſome difficulty in ſheltering a great quantity of theſe flowers in winter, when they are planted in ſuch large pots, which in moſt winters they will require, more or leſs; my method therefore is, to put them ſingly into halfpenny pots in autumn, and in the middle or latter end of october, to ſet theſe pots into a bed of old tanner's bark, which has loſt its heat, and cover them with a common frame, ſuch as is uſed for raiſing Cucumbers and Melons; and in two of theſe frames, which contain ſix lights, may be ſet a hundred and fifty of theſe pots: in theſe frames you may give them as much free air as you pleaſe, by taking off the lights every day when the weather is mild, and putting them on only in bad weather and great rains; and if the winter ſhould prove ſevere, it is only covering the glaſſes with mats, ſtraw, or Peaſehaulm, ſo as to keep out the froſt, which will effectually preſerve your plants in the utmoſt vigour.

In the middle or latter end of february, if the ſeaſon is good, you muſt tranſplant theſe layers into pots for their bloom, the ſize of which ſhould be about eight inches over at the top in the clear; in the doing of which, obſerve to put ſome pot-ſherds or oyſter-ſhells over the holes in the bottoms of the pots, to keep the earth from ſtopping them, which would detain the water in the pots to the great prejudice of the flowers: then fill theſe pots about half way with the ſame good compoſt as was before directed, and ſhake the plants out of the ſmall pots with all the earth about the roots; then with your hands take off ſome of the earth round the outſide of the ball, and from the ſurface taking off the fibres of the roots on the outſide of the ball of earth; then put one good plant exactly in the middle of each pot, ſo that it may ſtand well as to the height, i. e. not ſo low as to bury the leaves of the plant with earth, nor ſo high, that the ſhank may be above the rim of the pot; then fill the pot up with the earth before-mentioned, cloſing it gently to the plant with your hands, giving it a little water, if the weather is dry, to ſettle the earth about it; then place theſe pots in a ſituation where they may be defended from the north wind, obſerving to give them gentle waterings, as the ſeaſon may require.

In this place they may remain till the middle or end of april, when you ſhould prepare a ſtage of boards to ſet the pots upon, which ſhould be ſo ordered as to have little ciſterns of water round each poſt, to prevent the inſects from getting to your flowers in their bloom, which, if they are ſuffered to do, will mar all your labour, by deſtroying all your flowers in a ſhort time; the chief and moſt miſchievous inſect in this caſe is, the earwig, which will gnaw off all the lower parts of the petals of the flowers, which are very ſweet, and thereby cauſe the whole flower to fall to pieces; but ſince the making one of theſe ſtages is ſomewhat expenſive, and not very eaſy to be underſtood by ſuch as have never ſeen them, I ſhall deſcribe a very ſimple one, which I have uſed for ſeveral years, which anſwers the purpoſe full as well as the beſt and moſt expenſive one can do: firſt, prepare ſome common flat pans, about fourteen or ſixteen inches over, and three inches deep; place theſe two and two oppoſite to each other, at about two feet diſtance, and at every eight feet lengthways, two of theſe pans; in each of theſe whelm a flower-pot, which ſhould be about ſix inches over at the top, upſide-down, and lay a flat piece of timber, about two feet and a half long, and three inches thick, croſs from pot to pot, till you have finiſhed the whole length of your ſtage; then lay your planks lengthways upon theſe timbers, which will hold two rows of planks for the ſize pots which were ordered for the Carnations; and when you have ſet your pots upon the ſtage, fill the flat pans with water, always obſerving, as it decreaſes in the pans, to repleniſh it, which will effectually guard your flowers againſt inſects; for they do not care to ſwim over water, ſo that if by this, or any other contrivance, the paſſage from the ground to the ſtage, on which the pots are placed, is defended by a ſurface of water three or four inches broad, and as much in depth, it will effectually prevent theſe vermin from getting to the flowers.

This ſtage ſhould be placed in a ſituation open to the ſouth-eaſt, but defended from the weſt winds, to which theſe ſtages muſt not be expoſed, leſt the pots ſhould be blown down by the violence of that wind, which is often very troubleſome at the ſeaſon when theſe flowers blow; indeed they ſhould be defended by trees at ſome diſtance, from the winds of every point; but theſe trees ſhould not be too near the ſtage, nor by any means place them near walls, or tall buildings, for in ſuch ſituations the ſtems of the flowers will draw up too weak. About this time, viz. the middle of april, your layers will begin to ſhoot up for flower; you muſt therefore be provided with ſome ſquare deal ſticks, about four feet and a half long, which ſhould be thicker toward the bottom, and planed off taper at the top; theſe ſticks ſhould be carefully ſtuck into the pots as near as poſſible to the plant, without injuring it; then with a ſlender piece of baſs mat, faſten the ſpindle to the ſtick to prevent its being broken; this you muſt often repeat, as the ſpindle advances in height, and alſo obſerve to pull off all ſide ſpindles as they are produced, and never let more than two ſpindles remain upon one root, nor above one, if you intend to blow exceeding large. Toward the beginning of june your flowers will have attained their greateſt height, and their pods will begin to ſwell, and ſome of the earlieſt begin to open on one ſide; therefore obſerve to let it open in two other places at equal angles; this muſt be done ſo ſoon as you perceive the pod break, otherwiſe your flower will run out on one ſide, and be in a ſhort time paſt recovering, ſo as to make a complete flower, and in a few days after the flowers begin to open, you muſt cover them with glaſſes which are made for that purpoſe, in the following manner:

Upon the top of the glaſs, exactly in the center, is a tin collar, or ſocket, about three fourths of an inch ſquare, for the flower-ſtick to come through; to this ſocket are ſoldered eight ſlips of lead at equal diſtances, which are about ſix inches and a half long, and ſpread open at the bottom about four inches aſunder; into theſe ſlips of lead are faſtened ſlips of glaſs, cut according to the diſtances of the lead, which, when they are fixed in, are bordered round the bottom with another ſlip of lead quite round, ſo that the glaſs has eight angles, with the ſocket in the middle, and ſpread open at the bottom about eleven inches wide.

When your flowers are open enough to cover with theſe glaſſes, make a hole through your flower-ſtick, exactly to the height of the under part of the pod, through which put a piece of ſmall wire about ſix inches long, making a ring at one end of the wire to contain the pod, into which ring fix the ſtem of the flower; then cut off all the tyings of baſs, and thruſt the ſtem of the flower ſo far from the ſtick, as may give convenient room for the flower to expand without preſſing againſt the ſtick; to which diſtance you may fix it, by turning your wire ſo as not to draw back through the hole; then make another hole through the ſtick, at a convenient diſtance above the flower, through which put a piece of wire, an inch and a half long, which is to ſupport the glaſſes from ſliding down upon the flowers; and be ſure to obſerve, that the glaſſes are not placed ſo high as to admit the ſun and rain under them to the flowers, nor ſo low as to ſcorch their leaves with the heat. At this time alſo, or a few days after, as you ſhall judge neceſſary, cut ſome ſtiff paper, cards, or ſome ſuch thing, into collars about four inches over, and exactly round, cutting a hole in the middle of it about three fourths of an inch diameter, for the bottom of the flower to be let through; then place theſe collars about them, to ſupport the petals of the flower from hanging down; this collar ſhould be placed withinſide the calyx of the flower, and ſhould be ſupported thereby; then obſerve from day to day what progreſs your flowers make; and if one ſide comes out faſter than the other, turn the pot about, and ſhift the other ſide towards the ſun; and alſo if the weather proves very hot, ſhade the glaſſes in the heat of the day with Cabbage leaves, &c. to prevent their being ſcorched, or forced out too ſoon; and when the middle pod begins to riſe, take out the calyx thereof with a pair of nippers made for that purpoſe; but this ſhould not be done too ſoon, leſt the middle part of the flower ſhould advance too high above the ſides, which will greatly diminiſh the beauty of it: and you ſhould alſo obſerve whether there are more leaves in the flower than can properly be expanded for want of room; in which caſe you ſhould put out ſome of the lowermoſt or moſt unlikely leaves to ſpread, drawing out and expanding the others at the ſame time: and when your flowers are fully blown, if you cut them off, put on a freſh collar of ſtiff paper, which ſhould be cut exactly to the ſize of the flower, that it may ſupport the petals to their full width, but not to be ſeen wider than the flower in any part: when this is put on, draw out the wideſt leaves to form the outſide of the flower, which although they ſhould be in the middle, yet by removing the other leaves they may be drawn down, and ſo the next longeſt leaves upon them again, that the whole flower may appear equally globular without any hollow parts. In the doing of this, ſome floriſts are ſo curious as to render an indifferent flower very handſome; and on this depends, in a great meaſure, the ſkill of the artiſt to produce large fine flowers.

During the flower ſeaſon, particular care ſhould be taken not to let them ſuffer for want of water, which ſhould by no means be raw ſpring water; nor do I approve of compound waters, ſuch as are enriched with various ſorts of dung; but the beſt and moſt natural water is that of a fine ſoft river; next to that is pond water, or ſtanding water; but if you have no other than ſpring water, it ſhould be expoſed to the ſun and air two days before it is uſed, otherwiſe it will give the flowers the canker and ſpoil them.

The directions here given are chiefly for the management of thoſe large Carnations, which require the greateſt ſkill of the floriſts, to have them in perfection; but of late years theſe have not been ſo much in eſteem as formerly, and thoſe flowers which do not break their pods, and are termed whole Blowers, have now the preference. Theſe are generally planted in pots, and treated in the ſame way as the large flowers, but do not require ſo much trouble to blow them: all that is neceſſary to be done for theſe, is to faſten their ſtems up to flower-ſticks to prevent their being broken, and to take off the pods which proceed from the ſide of the ſtalks, leaving only the top bud to flower, if they are intedned to be large and fair; and when the flowers begin to open, if they are ſcreened from the ſun in the heat of the day, and alſo from wet, they will continue much longer in beauty.

But although the moſt valuable of theſe flowers are uſually planted in pots, and thus carefully treated, yet many of theſe whole blowing flowers may be planted in beds, or borders of the flower-garden, where they are ſome of the principal ornaments during their continuance in flower, which is from the beginning of july till the middle of auguſt, eſpecially if the ſeveral colours are properly intermixed; for the Flakes and Bizarrs ſhould be intermixed with the Picquettes, and not planted ſeparate, unleſs where they are deſigned for ſaving the feeds; in which caſe, thoſe which are the fineſt of each ſort, ſhould be planted in beds at a diſtance from each other, eſpecially where perſons are deſirous to keep them diſtinct; for where the ſorts are blended together, there will be an admixture of their farina, ſo that the ſeeds will vary, and not produce the particular kinds; though I do not remember ever to have ſeen any Flake flowers ariſe from ſeeds of the Picquettes, nor vice verſâ.

The flowers which are planted in the full ground, generally produce ſeeds better than thoſe in pots; but whoever propoſes to raiſe a ſupply of new flowers from ſeeds, muſt always obſerve to ſave the beſt of their ſeedling flowers for this purpoſe; for it is well known, that after any of theſe flowers have been a few years propagated by layers, they become barren, and do not ſeed; which is alſo the caſe with moſt other plants which are propagated by ſlips, layers, or cuttings; ſo that the young plants which have been newly obtained from ſeeds, are always the moſt productive of ſeeds: the plants which are propagated by layers or ſlips, will always continue to produce the ſame flowers, ſo that when a fine variety is obtained, it is this way propagated and maintained; but all the new varieties come from ſeeds, ſo that all thoſe who are curious in theſe flowers, annually ſow their ſeeds.

[Carnations may alſo be increaſed by cuttings and pipings as Pinks are, but not ſo ſucceſsfully in general as by layers, unleſs the operation is performed on a hot-bed under glaſſes. The cuttings for piping ſhould have two joints, ſhould be thrown into water a few minutes, and planted not more than half an inch deep. They are to be gently watered, and to continue open till their leaves are dry before they are covered. After this, they are to be kept moiſt till they have rooted, to have only the morning ſun, and air is to be given them occaſionally. But with all this care, ſucceſs will at leaſt be uncertain; or at beſt, many of the cuttings will frequently periſh.]

Pinks.

The common Pinks are propagated either by ſeeds, which is the way to obtain new varieties; or by layers, as is practiſed for Carnations; or by ſlips, or pipings as they are commonly called, which, if carefully managed, will take root very well.

If they are propagated by ſeeds, care ſhould be taken in the choice of them, and only the ſeeds of the beſt ſorts ſaved, where perſons are curious to have the fineſt flowers. Theſe ſeeds may be ſown in the ſpring, and the plants afterwards treated in the ſame manner as has been directed for the Carnation; with this difference only, that as the Pinks are leſs tender, they may be more hardily treated. Thoſe which are propagated by layers, muſt be alſo managed as the Carnation. The old Man's Head and painted Lady Pinks are commonly propagated this way, but moſt of the other ſorts are increaſed from cuttings, or pipings.

The beſt time for this is about the end of july, when, if there ſhould happen any rain, it will be of great ſervice; but if the weather ſhould prove dry, the cuttings or pipings will require to be watered every other day, until they have taken root. They ſhould be planted in a ſhady border, and the ground ſhould be dug well, and all the clods broken, and if no rain falls, it ſhould be well ſoaked with water a few hours before they are planted; then they ſhould be taken from the plants, and all their lower leaves ſtripped off, and planted as ſoon as poſſible after, for if they are ſuffered to lie long after they are taken from the plants, they will wither and ſpoil; theſe need not be planted at a greater diſtance than three inches ſquare, and the ground muſt be cloſed very hard about them; then they muſt be well watered, and this muſt be repeated as often as is found neceſſary, till they have taken root; after which they will require no other care but to keep them clean from weeds till autumn, when they ſhould be tranſplanted to the borders of the flower-garden where they are to remain. There are ſome who perform this operation later in the ſeaſon than is here directed; but thoſe plants are never ſo ſtrong nor flower ſo well, as thoſe which are early planted.

[The time moſt proper for piping will vary with the ſeaſon, but it ſhould always be done immediately before or during the bloom, or indeed as ſoon as the young ſhoots are of a ſufficient length for the purpoſe; that is, to form pipings from two to three inches in length. The ſtriking will be much facilitated by covering the beds or pots with glaſſes, after having given them a good watering; not taking off the glaſſes till the cuttings or pipings begin to grow, but applying the water, when neceſſary, round the outſide of the glaſſes. In a month or ſix weeks they will be rooted and grow, when they may be fully expoſed. The only difference between cuttings and pipings is, that the former are cut through a joint horizontally, and the latter are drawn out at the joint from their ſockets, ſo that they leave a hollow like a pipe, and thence derive their name.

Pinks may alſo be increaſed, by ſlipping off the young ſhoots from the ſides of the main ones, any time in the ſpring from february to april. The ſlips ſhould be from three or four to ſix or eight inches in length.]

15. D. chinenſis. China or Indian Pink.—The China Pink is generally ſuppoſed an annual plant, becauſe the plants which are raiſed from ſeeds flower and produce ripe ſeeds the ſame ſeaſon, ſo their roots are not often preſerved; but where they are planted on a dry ſoil, they will continue two years, and the ſecond year will produce a greater number of flowers than the firſt. There are a great

variety of very rich colours in theſe flowers, which annually vary when raiſed from ſeeds. The double flowers of this ſort are moſt eſteemed, though the colours of the ſingle are more diſtinct and beautiful; for the multiplicity of petals in the double flowers, in a great meaſure, hides the deep ſhades, which are toward the lower part of the petals.

Theſe plants are propagated by ſeeds, which ſhould be ſown upon a gentle hot-bed about the beginning of april; this moderate heat is only intended to forward the vegetation of the ſeeds, therefore when the plants come up, they muſt have a large ſhare of air admitted to them, to prevent their drawing up weak; and as ſoon as the weather will permit, they muſt be expoſed to the open air; in about three weeks or a month after, the plants will be fit to remove; then they ſhould be carefully taken up with good roots, and planted in a bed of rich earth, at about three inches aſunder, being careful to ſhade them from the ſun till they have taken new root, and in dry weather they muſt have water three or four times a week. The farther care is to keep them clean from weeds till the end of may, at which time they may be tranſplanted to the places where they are deſigned to remain for flowering, when they may be taken up with large balls of earth to their roots, ſo as ſcarcely to feel their removal, eſpecially if it happens to rain at that time.

As theſe plants do not grow large, ſo when they are planted ſingly in the borders of the flower-garden, they do not make ſo fine an appearance, as where they are planted by themſelves in beds; or if they are planted in ſmall clumps, of ſix or eight roots in each, where the flowers being of different colours, ſet off each other to advantage.

Thoſe who are curious in theſe flowers, take particular care in ſaving their ſeeds, for they never permit any ſingle flowers to ſtand among their double, but pull them up as ſoon as they ſhew their flowers, and alſo draw out all thoſe which are not of lively good colours; where this is obſerved, the flowers may be kept in great perfection; but where perſons have truſty friends, who live at ſome diſtance, with whom they can exchange ſeeds once in two or three years, it is much better ſo to do, than to continue ſowing ſeeds in the ſame place many years in ſucceſſion, and this holds true in moſt ſorts of ſeeds: but the great difficulty is to meet with an honeſt perſon of equal ſkill, who will be as careful in the choice of his plants for ſeed, as if he was to ſow them himſelf.

[19. D. ſuperbus deſerves a place in every curious garden, on account of the elegance and delicious fragrance of the flowers. It grows naturally in a calcareous ſoil, and will thrive luxuriantly in a garden if chalk be mixed with the common mould, but not otherwiſe[f].

The other European ſorts are hardy, eaſily raiſed from ſeeds, and cultivated with little trouble; but the flowers being ſmall, and in general not having much ſcent, they are little noticed, except in botanic gardens; their beauty however, though loſt in the ſuperior blaze of Pinks and Carnations, is not inconſiderable; and they are peculiarly ornamental on walls and rock-work, and in dry, barren ſpots, where few plants will flouriſh.

The Cape Pink (n. 14.) is the only ſort which will not bear the open air in our climate.

24, 25, 26. The woody or ſhrubby Pinks are noble ornamental plants, and it is to be lamented that they are loſt to our gardens.

Dianthus ſaxifragus. See *Gypſophila.*

DIAPENSIA, (Διαπενθης, *deeply grieving or mourning: probably from its triſt ſituation.)*

Lin. gen. n. 194. *Reich.* 207. *Schreb.* 255. *Fl. lapp.* 1. *Juſſ.* 135.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Preciæ.—Convolvuli,* Juſſieu.

GENERIC CHARACTER.

Cal. *Perianth* eight-leaved: the five *interior leaflets* placed in a circle, the *reſt* leaning upon them in an imbricated manner, all equal, ovate, obtuſe, erect, permanent.

Cor. one-petalled, ſalver-ſhaped. *Tube* cylindric, open, length of the calyx. *Border* five-cleft, obtuſe, flat.

Stam. *Filaments* five, compreſſed-linear, erect, terminating; the tube at the inciſures of the border ſhort. *Anthers* ſimple.

Pist. *Germ* roundiſh. *Style* cylindric, length of the ſtamens. *Stigma* obtuſe.

Per. *Capſule* roundiſh, three-celled, three-valved.

Seeds very many, roundiſh.

ESSENTIAL CHARACTER.

Cor. ſalver-ſhaped. *Cal.* five-leaved, imbricate with three other leaflets. *Stam.* placed on the tube of the corolla. *Capſ.* three-celled.

SPECIES.

1. Diapenſia lapponica.

Lin. ſpec. 202. *Reich.* 1. 407. *fl. lapp. n.* 88. *t.* 1. *f.* 1. *ſuec. n.* 169. *Fl. dan. t.* 47.

Flowers peduncled.

DESCRIPTION, *&c.*

Root perennial. Stem riſing immediately from the root, and dividing into ſeveral ſimple diffuſed branchlets, cloathed all round with leaves, at moſt a finger's height. Leaves linear, blunt, almoſt membranaceous, having a longitudinal nerve, concave above, prominent beneath, a little broader outwards, imbricate at the baſe, ſpreading at the top, perennial; the lower ones finally withering, but not falling. Peduncle from the top of the branch, ſtraight, ſlender, one-flowered. Corolla ſhining, ſnowy-white. It has ſomewhat the appearance of a Sedum[a].

Native of the mountains of Lapland, among ſtones covered with moſs. Alſo in Norway.

Diapensia. See *Aretia* and *Sanicula.*

DICERA. (*From* δις *twice, and* κερας, *a horn; on account of its two-horned anthers.)*

Forſt. gen. 79. *t.* 40. *Schreb. gen. n.* 899.

Claſſ. 13. 1. Polyandria Monogynia.

GENERIC CHARACTER.

Cal. *Perianth* four or five-parted: *leaflets* equal.

Cor. *Petals* four or five, obovate, trifid: *ſegments* obtuſe, the middle one longeſt.

Nectary of four or five ſmall, emarginate corpuſcles, ſurrounding the germ.

Stam. *Filaments* (twelve to twenty) ſeveral, between the nectary and the germ, capillary, ſhort. *Anthers* linear, two-horned at top.

Pist. *Germ* roundiſh, *Style* awl-ſhaped, longer than the ſtamens. *Stigma* ſimple.

Per. *Berry?* ovate, two-celled.

Seeds very many.

Obs. D. ſerrata *has four ſtyles, and a four-celled two-ſeeded berry,* F.

ESSENTIAL CHARACTER.

Pet. four or five obovate, trifid. *Nect.* of four or five emarginate corpuſcles. *Anthers* two-horned.

SPECIES.

1. Dicera dentata.

Forſt. gen. 80. *flor. auſtral. n.* 226.

Elæocarpus ſerratus. *Lin. ſuppl.* 266.

Style one, leaves oblong acuminate toothed, racemes ſimple axillary looſe.

2. Dicera ſerrata.

Forſt. gen. 80. *flor. auſtral. n.* 227.

Elæocarpus Dicera. *Lin. ſuppl.* 266.

Styles four, leaves oppoſite cordate-ovate unequally ſerrate, racemes lateral compound.

DESCRIPTIONS, *&c.*

1. This is an elegant tree, bearing at the extremities of the branches abundance of leaves, which are alternate, oval or oval-oblong, bluntiſh, ſmooth, veined, bluntly ſerrate, petioled, with a double gland at

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[f] Smith ſpicil.

[a] Linn. lapp.

their baſe. Racemes axillary, ſimple, looſe, ſolitary, the length of the leaves[b]. Flowers on very minute pedicels, nodding. Stamens ſixteen when there are four, and twenty when there are five petals[c]. Linneus remarked twenty ſtamens in the Ceyloneſe plant, and only eight in that from Java[d]. Piſtil ſingle. Fruit an oval berry? with a hard ſtone in it. It is preſerved whilſt unripe after the manner of Olives[e]. See *Elæocarpus ſerratus.*

Native of New Zealand.

2. This agrees in the ſtructure of the flower with the preceding, but it differs in the fruit.—Native of New Zealand[f]. See *Elæocarpus Dicera.*

DICHONDRA. (*From* δις *twice, and* χονδρος, *a grain, becauſe two little grains ſucceed to each flower.*)

Forſt. gen. 40. *t.* 20. *Smith ic. ined.* 1. 8. *Juſſ.* 129. *Schreb. n.* 451.

Claſſ. 5. 2. Pentandria Digynia.

Nat. order of *Aſperifoliæ. Borragineæ.* Juſſ.

GENERIC CHARACTER.

Cal. five-leaved: *leaflets* obovate, netted-nerved, hairy without, ſmooth within, permanent.

Cor. monopetalous, inferior, rotate, ſubcampanulate, five-cleft, the length of the calyx.

Stam. *Filaments* five; ſubulate, ſpreading, placed alternately between the diviſions of the corolla, and only half the length. *Anthers* roundiſh.

Pist. *Germs* two hairy. *Styles* two divaricate, ſetaceous, the length of the ſtamens, ariſing on the inſide from the baſe of the germs. *Stigmas* capitate.

Per. *Capſules* two globular ſubhirſute, one-celled.

Seeds one in each cell, globular.

ESSENTIAL CHARACTER.

Cal. five-leaved. *Cor.* rotate, inferior. *Capſ.* dicoccous.

SPECIES.

1. Dichondra repens.

Forſt. gen. 20. *fl. auſtral. n.* 134. *Smith ic. ined.* 1. 8.

Sibthorpia evolvulacea. *Linn. ſuppl.* 288.

DESCRIPTION, &c.

Stem proſtrate creeping branched round. *Leaves* alternate, petioled, erect, kidney-ſhaped, ſometimes emarginate, above almoſt naked, below ſilky, radiate-veined: petioles round ſilky. *Flowers* ſmall, rather nodding, on axillary filiform ſimple ſilky peduncles, ſcarcely the length of the petioles, and uſually ſolitary. This was at firſt taken by Linneus for a ſpecies of *Sibthorpia*, from which it differs both in claſs and order, and in having two capſules with a ſingle ſeed in each, inſtead of a two-celled many-ſeeded capſule, which the *Sibthorpia* has. It is alſo very diſtinct from *Falkia*, which it reſembles ſomewhat in the leaves.—The ſpecimens from different countries differ in having the leaves naked above, or ſilky on both ſides; alſo in the length of the petioles and peduncles; but theſe ſeem only to be varieties.

Mutis ſent it to Linneus from New Granada. Commerſon found it at Buenos Ayres, and in the iſland of Mauritius. It is alſo known to be a native of Peru, Jamaica and New Zealand[g].

Dichotophyllum. See *Ceratophyllum.*

DICKSONIA. (*So named by Monſ. L'Heritier, from Mr. James Dickſon; who from his accurate knowledge in the Cryptogamia claſs, well deſerves ſuch an honour.*)

L'Herit. ſert. angl. 30. *t.* 43.

Claſſ. 24. 1. Cryptogamia Filices.

Nat. order of *Filices*, or *Ferns.*

GENERIC CHARACTER.

Fructifications kidney-ſhaped lying under the edge of the frond at the lower ſurface: outer valve formed of the ſubſtance of the leaf itſelf, inner membranaceous.

SPECIES.

1. Dickſonia arboreſcens. *Tree Dickſonia.*

L'Herit. ſert. angl. 31. *t.* 43. *Ait. hort. kew.* 3. 469.

Fronds ſuperdecompound villoſe, leaflets almoſt entire; ſtem arboreous.

2. Dickſonia Culcita. *Shining-leaved Dickſonia.*

L'Herit. ſert. angl. 31. *n.* 2. *Ait. hort. kew.* 3. 469.

Polypodium Baromets. *Lin. ſpec.* 1553?

Fronds ſuperdecompound ſmooth: leaflets ſerrate.

DESCRIPTIONS, &c.

1. Found by Sir Joſeph Banks and Dr. Solander in the iſland of St. Helena[h].—Introduced 1786, by Mr. Anthony Hove. It flowers moſt part of the winter[i].

2. Found in the iſland of Madeira, where it is called *Feila Brom*; and in the iſland of S. Miguel, one of the Azores, by Maſſon.—The inhabitants make pillows and cuſhions of the roots.

There is little doubt but that this plant and the *Baromets* or *Scythian Lamb* are one and the ſame, though they come from countries ſo remote. See *Philoſ. Tranſact. for* 1698. *n.* 247. *p.* 461.—and for 1725. *n.* 390. *p.* 353. It is figured in both places. Alſo *Deuſing. diſſ.* 596. *Kæmpf. amœn.* 505, &c.[k]—Introduced 1779[l].

Diconangia. See *Itea.*

Dicranum. A genus in Cryptogamia Muſci, *Schreb. n.* 1644. *Hedw. fund.* 2. *p.* 91. Comprehending alſo his Fiſſideus. It embraces ſeveral ſpecies of Mnium, Bryum and Hypnum, of Linneus.

Dictamnum. See *Origanum.*]

DICTAMNUS. (*From* τίκτειν, *deducere, Lin.* Δικταμον, Δικταμνος, & Δικταμνον, *Theophr. Dioſcor.* Fraxinella, *dimin. of Fraxinus, an Aſh; from the form of the leaves.*)

Engl. *Fraxinella.* Fr. *Fraxinelle.*

Lin. gen. n. 522. *Reich.* 564. *Schreb.* 726. *Juſſ.* 297. Fraxinella. *Tourn.* 243. *Gærtn.* 69.

Claſſ. 10. 1. Decandria Monogynia.

Nat. order of *Multiſiliquæ.—Rutaceæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* five-leaved, very ſmall, deciduous: *leaflets* oblong, acuminate.

Cor. *Petals* five, ovate-lanceolate, acuminate, with claws, unequal: of which two are bent upwards: two placed obliquely at the ſides; one bent downwards.

Stam. *Filaments* ten, ſubulate, length of the corolla, ſituated between the two lateral declining petals, unequal; ſmall point-like glands ſcattered over the filaments. *Anthers* four-ſided, riſing upwards.

Pist. *Germ* five-cornered, elevated from the receptacle. *Style* ſimple, ſhort, bent downwards, incurved. *Stigma* ſharp, riſing upwards.

Per. *Capſules* five, conjoined inwardly at the border, compreſſed, acuminate, with diſtant tips, two-valved.

Seeds in pairs, ovate, very ſmooth, within a common aril, which is two-valved, and cut down.

ESSENTIAL CHARACTER.

Cal. five-leaved. *Petals* five, patulous. *Filaments* having glandulous dots ſcattered over them. *Capſ.* five, conjoined.

SPECIES.

1. Dictamnus albus. *Fraxinella.*

Lin. ſpec. 548. *ſyſt.* 347. *Reich.* 2. 264. *hort. cliff.* 161. *hort. upſ.* 102. *mat. med.* 113. *ſuppl.* 232. *Jacqu. auſtr.* 5. *t.* 428. *Scop. carn. n.* 476. *Pollich pal. n.* 392. *Allion. pedem. n.* 1679. *Villars dauph.* 3. 581. *Mill. fig. t.* 123. *Martyn's letters, t.* 16. *f.* 2. *Woodv. med. bot.* 316. *t.* 116. *Plenck, ic. t.* 325.

D. albus vulgo, ſ. Fraxinella. *Bauh. pin.* 222. *Blackw. t.* 75.

Fraxinella alba. *Gærtn. fruct.* 1. 337. *Hall. helv.* 1029.**

Fraxinella. *Cluſ. pannon.* 54. *hiſt.* 1. 99. *Dod. purg.* 83. *Renealm. ſpec.* 122. *t.* 121. *Garid. aix.* 191. *t.* 38. *Beſl. eyſt. æſt.* 9. *t.* 5. *f.* 1. *Rivin. pent. t.* 132. *Ger.* 1065. *emac.* 1245. *Park. parad.* 333. *theat.* 417. *Mor. hiſt.* 3. 456. *ſ.* 12.

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[b] Linn. zeyl.

[c] Burm.

[d] Mant.

[e] Burm.

[f] Linn. ſuppl.

[g] Smith.

[h] L'Heritier.

[i] Hort. kew.

[k] L'Herit.

[l] Hort. kew.

t. 1. *lower row. Bauh. hiſt.* 3. 494. *f.* 2. *Raii hiſt.* 698.

Leaves pinnate, ſtem ſimple.

[2. Dictamnus capenſis.

Lin. ſyſt. 397. *ſuppl.* 232.

Pallaſia capenſis. *Houtt. pflanz. ſyſt.* 3. 319. *t.* 22.

Leaves ſimple; ſtem branching.]

DESCRIPTIONS, *&c.*

1. Root perennial, ſtriking deep into the ground, and the head annually increaſing in ſize. Stalks many, two or three feet high, [round, here and there ſlightly grooved, ſometimes ſubancipital, not branched, at bottom green and beſet with white hairs, ferruginous red towards the top, with reſinous glands. Leaves alternate, the larger above a foot in length, ſpreading out horizontally, aſcending towards the end; the midrib flat at top and edged on both ſides, convex beneath and hairy; leaflets from two to five pairs, with an odd one at the end, moſt of them alternate, except the top pair or two, ſeſſile or ſubſeſſile, except the end one, which is on a long winged petiole, ſmooth, ſtiff, oblique except the end one, ovate, acute, ſerrate, ſhining on both ſides, about two inches long and an inch wide. The whole ſomewhat reſembling an Aſh leaf.] Flowers in a long pyramidal looſe ſpike or raceme, nine or ten inches long: [the branches of the raceme alternate, with a bracte at the foot of each, one or two-flowered: there is alſo a ſhort, lanceolate, hairy bracte to each pedicel. The red glands are ovate, pedicelled, acuminate, and have white hairs interſperſed. Calyx deeply five-cleft; ſegments lanceolate, obtuſe, the three upper red, the two lower green. Corolla large and handſome, the common natural colour pale purple with dark purple veins, but varying to white, the four upper petals ſtand erect, and the genitals ſtretch out horizontally on the fifth, on and about the middle nerve at the back it has the ſame red glands as are on the pedicel. Filaments pale purple, concealing the germ and ſtyle, aſcending or turning up at the end, glandular eſpecially at top: anthers green. Germ covered with pedicelled glands; ſtyle with white hairs; ſtigma blunt, dark purple. To each flower ſucceeds a fruit conſiſting of five compreſſed capſules, ſpreading out like the points of a ſtar, rough with hairs and glandular tubercles, ending at top in a ſtraight line, with a ſhort upright tooth or proceſs at the inner end, and a long red one ſtretching out at the other. Within this ſkin is a cartilaginous ovate-oblong ſhell, obliquely truncate at top, deeply emarginate and cut out on the inner ſide for the reception of the receptacle, two-valved, one-celled, opening elaſtically within. Seeds two according to Linneus; Scopoli ſays, only one. Gærtner affirms that there are ſix or eight in a capſule, but that only one or two come to maturity. I have generally found two ripe ſeeds, without any veſtiges of more; ſometimes one has been abortive. They are pear-ſhaped, very ſmooth, black and ſhining.]

The whole plant, eſpecially when gently rubbed, emits an odour like that of lemon-peel, but when bruiſed it has ſomething of a balſamic ſcent. [This fine ſcent is ſtrongeſt in the pedicels of the flowers, which are covered with glands of a ruſty red colour, exſuding a viſcid juice or reſin, which exhales in vapour, and in a dark place may be ſeen to take fire.

Fraxinella is a native of Germany, France, Spain, Auſtria, and Italy.] It flowers with us at the end of may, and in june, and the ſeeds ripen in ſeptember. For its beauty and fine ſcent it deſerves a place in every good garden. [It was cultivated by Gerarde in 1596[a], and is named by him *Baſtard* or *Falſe Dittany*. Parkinſon calls it *Falſe White Dittany*.

2. This reſembles the firſt ſpecies very nearly. The ſimple leaves are alternate, and like the leaflets of the preceding. The raceme is the ſame in both. It is a native of the Cape of Good Hope[b].—The ſame with Calodendrum capenſe[c]; which ſee.]

PROPAGATION AND CULTURE.

Fraxinella is propagated by ſeeds, which if ſown in the autumn ſoon after they are ripe, the plants will appear the following april; but when they are kept out of the ground till the ſpring, the ſeeds ſeldom ſucceed; or if they do grow, it is the following ſpring before the plants appear, ſo that a whole year is loſt. When the plants come up, they muſt be conſtantly kept clean from weeds; and in the autumn when their leaves decay, the roots ſhould be carefully taken up, and planted in beds at ſix inches diſtance every way; theſe beds may be four feet broad, and the paths between them two, that there may be room enough to paſs between the beds to weed them. In theſe beds the plants may ſtand two years, during which time they muſt be conſtantly kept clean from weeds: and if they thrive well, they will be ſtrong enough to flower; in the autumn they ſhould be carefully taken up, and planted in the middle of the borders of the flower-garden; where they will continue thirty or forty years, producing more ſtems of flowers in proportion to the ſize of the roots. All the culture theſe require, is to be kept clean from weeds, and the ground about them dug every winter.

DICTAMNUS CRETICUS. See *Origanum.*

[DIDELTA. (*From δις, twice, and the capital Greek letter Δ; the receptacle having the form of a double delta, or double equilateral triangle.*)

L'Herit. ſtirp. nov. t. 28. *Juſſ. gen.* 182. *Schreb.* 1351.

Claſſ. 19. 3. Syngeneſia Polygamia Fruſtranea.

Nat. order of Compound flowers.—*Corymbiferæ.* Juſſ.

GENERIC CHARACTER.

CAL. *common* double, permanent: *outer* three-leaved or three-parted, umbilicated at the back; *leaflets* cordate, acuminate, much expanded, tomentoſe-hoary above: *inner* placed on the diſk of the outer, ſhorter, compoſed of eleven or twelve *leaflets,* which are linear-lanceolate, very acute, ſerrate-prickly, one-nerved, ſpreading, five or ſix alternately ſhorter by half than the others; the twelfth often wanting.

COR. *compound* radiated. *Corollets hermaphrodite* numerous, ſhorter than the calyx; barren in a deltoid diſk, *fertile* in the outer triangles of the receptacle. *Females* eleven or twelve in the ray, each oppoſite to one of the calycine leaflets, and double the length of the calyx. *Proper* in both hermaphrodites funnel-ſhaped, half-five-cleft; *border* five-parted, linear, acute, patulous, revolute, brown at the tip: *female* ligulate, four or three-toothed, three-furrowed, tubular at the baſe, ſpreading.

STAM. in both hermaphrodites; *filaments* five, capillary, very ſhort, inſerted into the tube; *anther* cylindric, tubular, five-toothed, brown at the tip, the length of the corollet. In the *females* the rudiment of one ſtamen inſerted at the top of the tube.

PIST. in the perfect hermaphrodites *germ* inferior, immerſed in the receptacle, oblong, compreſſed, crowned with a thin, ſhort *pappus* or *down,* like the eye-laſhes. *Style* ſlender, finally ſtanding out. *Stigma* two-parted, ſubulate, revolute. In the barren hermaphrodites, *germ* roundiſh, very ſmall, immerſed; in other reſpects as in the fertile. *Females,* ſcarcely any rudiment of a germ.

RECEPT. deltoid, flat, honey-combed with labyrinthed membranes, diſtinct and finally reſolvable into four partial deltas or triangles; the central naked, barren; the ſide ones producing ſeeds, roughened with ſtiff brown briſtles, becoming hard and in ſeparating from each other becoming a

PERIC. *Nuts* three, bony, three-cornered, flatted, ſtiff-briſtly, from the outer triangles of the receptacle gaped and hardened, each retaining an outer leaf and the oppoſite inner calycine leaflets or one third part of the calyx, and many-celled.

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[a] Hort. kew.

[b] Linn. ſuppl.

[c] Swartz obſ.

Seeds. Small kernels (*nucleoli*) as many as there were germs, but ſome abortive, oblong. *Down* ſimple, thin, ſhort, ſtiffer than in the flower.

ESSENTIAL CHARACTER.

Cal. expanding; outer leafy. *Recept*, honey-combed, dividing into parts which retain the ſeeds. *Down* chaffy, many-leaved.

SPECIES.

1. Didelta carnoſa. *Succulent-leaved Didelta.*
Ait. hort. kew. 3. 256.
D. tetragoniæfolia. *L'Herit. ſtirp. nov.* 55. *t.* 28.
Polymnia carnoſa. *Lin. ſyſt.* 790. *ſuppl.* 384.
Leaves alternate lanceolate-oblong fleſhy.

2. Didelta ſpinoſa. *Oppoſite-leaved Didelta.*
Ait. hort. kew. 3. 256.
Polymnia ſpinoſa. *Lin. ſyſt.* 790. *ſuppl.* 384.
Leaves oppoſite ſomewhat ſtem-claſping ovate.

DESCRIPTIONS, *&c.*

1. This plant is ſomewhat fleſhy, and has the air of *Tetragonia.* Seed-leaves two, claſping, obovate, fleſhy, ſmooth. Stem herbaceous, very much branched, erect, round, eighteen inches in height: branches alternate, diffuſed, fleſhy, ſmooth, green, the thickneſs of a quill; the extreme branchlets woolly. Leaves alternate, ſeſſile, ſpreading, acute, attenuated at the baſe, quite entire, revolute, woolly above, beneath one-nerved, ſmooth, veinleſs, two or three inches long, ſix or eight lines broad, in the ſtove permanent. Flowers ſolitary, terminating, on long peduncles, ſcarcely nodding, yellow. Annual, but in the ſtove enduring ſome years, and becoming ſomewhat ſhrubby, which is frequently the caſe with ſome annual plants[a].

It is a native of the Cape, and was found there by Mr. Fr. Maſſon. It flowers in july, and was introduced in 1774[b].

2. This is very ſmooth; the leaves are broad, and the outer calyx is five-leaved.—This alſo is a native of the Cape, whence it was brought by Thunberg[c], and Fr. Maſſon. It flowers in june and july, and was introduced the ſame year with the former[d].

PROPAGATION AND CULTURE.

Theſe plants may be propagated both from ſeeds and cuttings, muſt have the protection of a dry ſtove or glaſs-caſe, and may be managed as other Cape plants.

Didymodon. One of Hedwig's genera of Moſſes.

Dier's-Broom or Dier's-weed. See *Geniſta.*

Dier's-weed. See *Reſeda.*

Diervilla. See *Lonicera.*]

DIGITĀLIS. (*So named from the reſemblance of the flower to the finger of a glove, Digitale; or from the adjective Digitalis, of or belonging to a finger.*)

Engl. *Fox-glove.* Fr. *Digitale.*

Lin. gen. n. 758. *Reich.* 816. *Schreb.* 1017. *Tourn.* 73. *Gærtn. t.* 53. *Juſſ.* 120.

Claſſ. 14. 2. Didynamia Angioſpermia.

Nat. order of *Luridæ.* Lin. *Scrophulariæ.* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* five-parted: *diviſions* roundiſh, ſharp, permanent; the *ſuperior* longer than the reſt.

Cor. one-petalled, bell-form. *Tube* large, expanding, bellied downwards; cylindric and cloſe at the baſe. *Border* ſmall, four-cleft: *upper diviſion* more expanding, emarginate; *inferior diviſion* larger.

Stam. *Filaments* four, ſubulate, inſerted into the baſe of the corolla, bent downwards, of which *two* are longer. *Anthers* two-parted, acuminate on one ſide.

Pist. *Germ* acuminate. *Style* ſimple, in the ſituation of the ſtamens. *Stigma* ſharp.

Per. *Capſule* ovate, length of the calyx, acuminate, two-celled, two-valved, valves burſting in two directions: (partition double from the inflex edges of the valves, G.)

Seeds very many, ſmall, (ſubpriſmatic, G.)

Obs. *There are ſpecies in which the diviſions of the corolla are ſharp and more evident, and the upper lip as well as the lower ſharp, and more prominent.*

ESSENTIAL CHARACTER.

Cal. five-parted. *Cor.* bell-form, five-cleft, bellying. *Capſ.* ovate, two-celled.

SPECIES.

1. Digitalis purpurea. *Purple Fox-glove.*
Lin. ſpec. 866. *ſyſt.* 562. *Reich.* 3. 151. *hort. upſ.* 178. *cliff.* 318. *Gærtn. fruct.* 247. *Hudſ. angl.* 275. *With.* 654. *Curtis lond.* 1. 48. *Lightf. ſcot.* 330. *Woodv. med. bot.* 71. *t.* 24. *Hall. helv. n.* 330. *Pollich pal. n.* 598. *Krock. ſileſ. n.* 999. *Villars dauph.* 2. 420. *Fl. dan. t.* 74. *Berg. phyt.* 95. *Blackw. t.* 16. *Riv. mon. t.* 104. *Dod. pempt.* 168. *Fuchſ. hiſt.* 893. *Trag.* 889. *Lob. ic.* 1. 572. 1, 2. *Baub. hiſt.* 2. 812. 3. *Raii hiſt.* 767. *ſyn.* *283. *Ger.* 646. 1. *emac.* 790. 1. *Park. theat.* 653. 1. *Mor. hiſt. ſ.* 5. *t.* 8. *f.* 1.
D. purpurea fol. aſpero. *Bauh. pin.* 243.
β. D. alba. *Ger. emac.* 790. *f.* 2.—fol. aſpero. *Baub. pin.* 244.—major alba. *Park. parad.* 382. *n.* 4.
Foxglove with white flowers.
Calycine leaflets ovate acute; corollas obtuſe, upper lip entire (very ſlightly notched. With.)

[2. Digitalis minor.
Lin. ſyſt. 562. *mant.* 567. *Reich.* 152.
D. hiſpanica purpurea minor. *Tournef. inſt.* 165.
Corollas obtuſe, upper lip ſlightly two-lobed; leaves even.]

3. Digitalis Thapſi. *Spaniſh Foxglove.*
Lin. ſpec. 869. *Reich.* 152.
D. verbaſci fol. purpurea minor perennis hiſpanica. *Barrel. ic.* 1185.
D. anguſto verb. fol. montana. *Bocc. muſ.* 2. 107. *t.* 85.
Leaves decurrent.

4. Digitalis lutea. *Small yellow Foxglove.*
Lin. ſpec. 867. *Reich.* 153. *hort. upſ.* 178. *cliff.* 318. *Hall. helv. n.* 332. *Scop. carn. n.* 779. *Jacqu. hort.* 2. *t.* 105. *Krock. ſileſ. n.* 998. *Villars dauph.* 2. 419. *Tabern.* 567. *Lob. adv.* 245. *ic.* 573.
D. parviflora. *Allion. pedem. n.* 257.
D. fl. minore ſubluteo, anguſtiore fol. *Bauh. hiſt.* 2. 814.
D. major lutea vel pallida, parvo fl. *Bauh. pin.* 244. *Raii hiſt.* 768. *Sabb. hort.* 2. *t.* 88.
D. lutea minore flore. *Mor. hiſt.* 2. 479. *ſ.* 5. *t.* 8. *f.* 5. *Riv. mon. t.* 105.
D. minor lutea ſ. pallida. *Park. parad.* 382. *n.* 7.
Calycine leaflets lanceolate, corollas acute, upper lip bifid.

5. Digitalis ambigua. *Greater yellow Foxglove.*
Lin. ſyſt. 562. *Reich.* 153. *ſuppl.* 282. *Murr. prod.* 62. *Hall. helv. n.* 331. *Krock. ſileſ. n.* 1000.
D. ochroleuca. *Jacqu. auſt.* 1. *t.* 57.
D. grandiflora. *Allion. pedem. n.* 258. *Mill. dict. n.* 4. *Villars dauph.* 2. 419.
D. lutea. *Pollich pal. n.* 599. β. *Leers herborn. n.* 487.—magno flore. *Bauh. pin.* 244. *Mor. t.* 8. *f.* 4. *Raii hiſt.* 768.—amplo fl. *Park. parad.* 382. *n.* 6. *theat.* 653. *f.* 2.—fl. majore, fol. latiore. *Bauh. hiſt.* 2. 813. *f.* 1.
Calycine leaflets lanceolate, helmet of the corolla emarginate, leaves pubeſcent underneath.

6. Digitalis ferruginea. *Iron-coloured Foxglove.*
Lin. ſpec. 867. *ſyſt.* 562. *Reich.* 153. *Sabb. hort.* 2. *t.* 86. *Allion. pedem. n.* 260. *Ger. emac.* 790. *f.* 4.
D. anguſtifolia, fl. ferrugineo. *Bauh. pin.* 244. *Riv. mon. t.* 98.
D. ferrug. fol. anguſtiore. *Bauh. hiſt.* 2. 813. *f.* 2.
D. latifolia & anguſtifolia fl. ferrug. *Mor.* 2. 478. *t.* 8. *f.* 2, 3.
D. maxima ferrug. *Park. parad.* 380. *n.* 1. *f.* 6. *Raii hiſt.* 768.
Calycine leaflets ovate obtuſe ſpreading, lower lip of the corolla bearded.

[7. Digitalis obſcura. *Willow-leaved Foxglove.*
Lin. ſpec. 867. *Reich.* 154. *mant.* 418. *Jacqu. hort.* 1. *t.* 91.

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[a] L'Heritier.

[b] Hort. kew.

[c] Linn. ſuppl.

[d] Hort. kew.

D. hiſpanica anguſtifolia. *Bocc. muſ.* 2. 136. *t.* 98. —fl. nigricante. *Tournef. inſt.* 166.
Leaves linear-lanceolate quite entire growing together at the baſe.]

8. Digitalis canarienſis. *Canary ſhrubby Foxglove.*
Lin. ſpec. 868. *Reich.* 154. *hort. cliff.* 318. (Geſneria). *Mill. fig. t.* 120. *Comm. hort.* 2. 105. *t.* 53. *Pluk. alm. t.* 325. *f.* 2.
Calycine leaflets lanceolate, corollas two-lipped acute, ſtem ſhrubby.

[9. Digitalis Sceptrum. *Madeira ſhrubby Foxglove.*
Lin. ſyſt. 563. *ſuppl.* 282. *L'Herit. ſert. angl.* 21. *t.* 24. *Ait. hort. kew.* 2. 346.
Calycine leaflets ſubulate, bractes linear longer than the flowers, corollas obtuſe, leaves elliptic ſerrate, ſtem ſhrubby.]

10. Digitalis orientalis.
Mill. dict. n. 7.
Calycine leaflets acute, leaves ovate-lanceolate nerved.

11 Digitalis cochinchinenſis.
Lour. cochinch. 378.
Leaves lanceolate rough, flowers ſolitary axillary, calyxes acute, corollas obtuſe emarginate at top.

12. Digitalis ſinenſis.
Lour. cochinch. 378.
Leaves ovate, hairy on both ſides, flowers ſolitary axillary, ſegments of the calyx awl-ſhaped, corollas obtuſe entire at top.

DESCRIPTIONS, *&c.*

Theſe are large plants, with alternate leaves, and flowers in ſpikes at the ends of the ſtem and branches. The firſt, and probably the ſecond and third ſpecies are biennial; the reſt are commonly ſaid to be perennial, though Miller affirms that they are all biennial except his *orientalis*. The eighth and ninth ſorts are certainly ſomewhat ſhrubby, and therefore perennial.

1. *Root* biennial. *Stem* three to ſix feet high, ſimple, upright, leafy, round, pubeſcent. *Leaves* alternate, ovate-acute, ſerrate, veiny, wrinkled, underneath whitiſh with pubeſcence, gradually leſſening to both ends; petioles ſhort, winged. *Flowers* in a long ſpike, nodding, imbricate, all directed the ſame way: peduncles one-flowered, pubeſcent, thickeſt at top. Calyx alſo pubeſcent. Corolla purple, the bellying part ſprinkled on the inſide with ſpots like little eyes, or elegantly mottled; upper ſegment entire and truncate; lower bent in: obtuſely lobed above and four-cleft, the lower ſegment ſomewhat longer. Filaments a little broader at top, crooked at bottom; anthers at firſt large, turgid, ovate, cloven almoſt to the baſe, yellowiſh and often ſpotted, afterwards changing both their form and ſituation in a ſingular manner: germ rather conical, very hairy; ſtigma bifid: nectary, a gland ſurrounding the baſe of the germ: the lowermoſt valve of the capſule ſplits in two. Seeds dark brown, truncate at both ends[a].

Leaves on footſtalks that half claſp the ſtem, ſcalloped with deep ſmall notches, and curiouſly reticulated with fleſhy veins on their under ſurface. The peduncles ariſe each from a lanceolate entire bracte half embracing the ſtem, and purpliſh towards the point[b].

Capſule ovate-pyramidal, ſubpubeſcent: valves, when it is ripe often gaping with a chink on the ſides. Receptacle fungous, convex on one ſide, ſlightly concave on the other, by means of an entire lamina united to the axis of the fruit, but not to the diſſepiment. Seeds nearly of a parallelopiped form, marked with a longitudinal groove on one ſide, ſprinkled on all ſides with hollow dots in rows, and of a ferruginous colour[c].

Native of Denmark, Germany, Switzerland, Britain, in ſandy and gravelly ſoils: near London it grows plentifully about Charlton wood, Norwood, &c. It flowers from june to auguſt.

The corolla is in general of a fine purple; but it varies into different ſhades of that colour, and is frequently white or cream colour. Parkinſon (parad. 381, 382. n. 2, 3.) mentions varieties with bluſh-coloured and orange-tawny flowers, as well as white, both large and ſmall, n. 4, 5. Some thinking Foxglove to be a fooliſh name, ſays Parkinſon, do call them *Finger-flowers*, becauſe they are like unto the fingers of a glove, the ends cut off.

The Digitalis purpurea or common purple Foxglove has long been conſidered as a plant poſſeſſed of very powerful virtues. A dram taken inwardly excites violent vomitings. It is certainly a very active medicine, and merits great attention; and it is ſingular that a plant ſo powerful in its operations ſhould not ſooner have been introduced into the modern materia medica. The country people in Somerſetſhire are ſaid to have long been in the habit of uſing it, in decoction, in fevers, to purge and vomit, which ſometimes ariſes to a ſuperpurgation. The Italians have a proverb concerning this plant, (by them called Aralda,) *Aralda tutte piaghe ſalda*, Foxgloves cures all ſores. Parkinſon ſays that it is effectual in the falling ſickneſs, if two handfuls of it be boiled in ale with four ounces of polypody of the oak, and the decoction drank by the patient: and that they who had laboured under that diſeaſe twenty-ſix years, ſo that they fell down twice or thrice every month, were perfectly reſtored by the uſe of this decoction; and did not fall into a fit for the ſpace of fourteen or fifteen months after. The dried leaves applied, or the juice made into an ointment, has been highly commended in ulcers, king's evil, *&c. &c.* as well as the bruiſed flowers alſo made into an ointment with freſh butter.

The diuretic effects of Foxglove, for which it is now ſo deſervedly celebrated, and on which account, as well as for its other powers, it is ſo much uſed in dropſical caſes, ſeems to have been firſt aſcertained by Dr. Withering. Yet he obſerves that it ſeldom ſucceeds in men of great natural ſtrength, tenſe fibre, warm ſkin, and florid complexion; or in a tight cordy pulſe. If the belly in aſcites be tenſe, hard, and circumſcribed, or the limbs in anaſarca be ſolid and reſiſting, we have but little hope. On the contrary, if the pulſe be feeble, or intermitting, the countenance pale, the lips livid, the ſkin cold, the ſwollen belly ſoft and fluctuating, the anaſarcous limbs readily pitting under preſſure of the finger, we may expect the diuretic effects to follow in a kindly manner.

In hydrothorax or water in the cheſt, ſtriking proofs are ſaid to have been afforded of the efficacy of Foxglove. The doſe of the dried leaves in powder is from one to three grains a day: but if a liquid medicine be preferred, a dram of the dried leaves is to be infuſed for four hours in half a pint of boiling water, adding to the ſtrained liquor an ounce of any ſpirituous water. It is to be continued in theſe doſes till it either acts upon the kidneys, the ſtomach, the pulſe, or the bowels.

2. Stem even, ſhorter by half than the foregoing. Peduncles villoſe. Leaves ſeſſile, lanceolate, not wrinkled but even, and almoſt entire. The flowers are very like thoſe of *D. purpurea* in form, ſize and colour, but the dots of the palate are more copious and without the pale iris: the upper lip is more deeply two-lobed, the lower very obtuſe, and the lateral ſegments reflex: the anthers have ferruginous dots. It is a native of Spain, and is perennial[d].

3. This has the appearance of the firſt ſort. The leaves are tomentoſe, veined, ſerrate; the lower lanceolate-ovate, the upper broad-lanceolate, all decurrent and having the decurrent ſides reflex. The bunch or ſpike of flowers the ſame as in *D. purpurea*. The corolla purple with a pale throat over which are ſprinkled blood-red dots; border four-cleft, the upper lobe undivided, the lower longer and ciliate. It ſeems to be a daughter of the firſt ſpecies by Verbaſcum Thapſus[e].]

It ſeldom riſes much more than a foot and half high; the lower leaves are ten inches long, and three broad in the middle. The flowers are ſmaller than thoſe of the common ſort, and the ſegments are acute. It grows naturally in Spain, whence Mr. Miller received the ſeeds. [It was cultivated by him in 1759; flowers from june to auguſt, and is perennial[f].]

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[a] Curtis.

[b] Woodw. Mſſ.

[c] Gærtner.

[d] Linn. mant.

[e] Linn. ſpec.

4. This has very long obtuſe leaves near the root; the ſtalk is ſmall, and riſes from two to three feet high; the lower part of it has ſmooth leaves growing cloſe together, about three inches long and one inch broad, ending in obtuſe points: the upper part of the ſtalk for ten inches in length, has ſmall yellow flowers, cloſely ranged on one ſide of it, having a few very ſmall acute leaves placed between them, ſituated on the oppoſite ſide of the ſtalk.

[Diſtinct from the next ſpecies, in having the leaves ſmooth, harder and narrower; the flowers ſmaller, thicker in the ſpike, pale not ſpotted, the ſegments of the calyx and corolla acute, triangular, thoſe of the latter five almoſt equal, the upper one manifeſtly bifid[g].

The ſpike nods at top from the beginning[h]. Leaves lanceolate, half a foot in length, nerved, ſeſſile; the nerves villoſe underneath. The upper calycine leaf ſhorter. Calyx, ſtyle, germ pubeſcent with capitate hairs[i]. Perennial.

Native of France; Switzerland in the government of Aigle, about Geneva; Sileſia; Carniola; Piedmont; about Salerno and Naples.—Cultivated in 1629[k]. It flowers in july and auguſt.]

5. This has long ſmooth-veined leaves at bottom; the ſtalk is ſtrong, two feet and a half high. Leaves five inches long, one inch and a half broad, ending in acute points, having many longitudinal veins, and being ſlightly ſerrate; the upper part of the ſtalk is adorned with large yellow flowers, nearly of the ſame ſize with thoſe of the firſt ſort; the brim having acute points, and the upper lip being entire.

[It differs from the foregoing in having the flowers much larger; though ſcarcely different in ſpecies, yet all writers chooſe to diſtinguiſh it principally on this account[l].

It is diſtinguiſhed from the foregoing by the leaflets of the calyx being more acuminate; the corollas larger, ſwelling at bottom, ochroleucous, dotted on the inſide with brown[m].

It is more tender than the firſt ſpecies, and ſomewhat viſcid. The ſtem is two feet high and ſubpubeſcent. The leaves ſmooth on their upper ſurface, ſubpubeſcent on their lower, without any of the anaſtomoſing veins, the edge very ſlightly and ſharply ſerrate. The raceme nodding at top; bractes narrower and more obtuſe; corolla a little ſmaller, very ſoftly pubeſcent, pale yellow, hairy within, and ſpotted with brown, the upper lip very ſhort, very obtuſe, cloven, the lateral and lower diviſions acute; ſtyle ſtraight; ſtigma bifid, convergent. Capſules all on one ſide, remote, ovate-oblong, acuminate, twice the length of the calyx[n].

Native of Germany, Switzerland, Geneva, Auſtria, Piedmont; flowering with the former.—Cultivated in 1596, by Gerarde[o].

6. *Stem* ſtrict, even, ſix feet high. Leaves ſeſſile, lanceolate, even, marked with lines, quite entire. *Flowers* in an upright raceme from each of the upper axils: bractes linear-lanceolate, reflex: pedicels very ſhort, ſolitary: the three upper leaves of the calyx approximating: corolla a little longer than the calyx, pubeſcent, yellowiſh within, the two upper diviſions obſcure, the ſide ones ſharp, the loweſt longer: ſtamens flexuoſe, without any rudiment of a fifth: ſtyle the length of the flower. Perennial[p].

Leaves beneath hairy and hirſute, whitiſh, the rib ſharp and nerved, above ſmooth and dark green, on the edge having a few ſmall teeth. The whole corolla ſubhirſute. Style the length of the ſtamens, but as the flower decays extended beyond the calyx. Height of the plant three feet[q].]

Stem near ſix feet high, putting out ſome ſlender branches towards the bottom, where it has narrow ſmall leaves, three inches long and one third of an inch broad. The flowers terminate the ſtem in a very long ſpike or raceme, having a few very ſmall leaves between them: the corolla has the colour of ruſty iron, and expands in june, [or july.

Native of Italy and about Conſtantinople. Cultivated in 1597[r].

7. *Stem* underſhrubby, with a few oppoſite branches. *Leaves*, when it does not flower, crowded, but on the flowering ſtem alternate. *Flowers* on terminating racemes: bractes lanceolate: calycine leaflets ovate, acutiſh, patulous: corollas drooping, obtuſe, yellowiſh within, reticulated and rufous at bottom; pale rufous on the outſide, eſpecially at the back; upper lip half cloven and recurved, lower three-parted the middle part a little longer than the others.

Native of Spain[s]. Introduced about 1778. It flowers in july and auguſt[t].]

8. This plant has a ſhrubby ſtalk, four and ſometimes five or ſix feet high, dividing into ſeveral branches. Leaves lanceolate, rough, near five inches long, and two broad in the middle, gradually decreaſing to both ends, having a few ſhort ſerratures on their edges, placed alternately on the branches, each of which is terminated by a looſe ſpike of flowers, near a foot in length: they are of an orange-colour intermixed with yellow, and are ſhaped ſomewhat like the flowers of Acanthus.

It grows naturally in the Canary iſlands, whence the ſeeds were firſt brought to England, and many of the plants were raiſed, in the Biſhop of London's garden at Fulham, part of which were ſent to the royal gardens at Hampton Court, and into Holland. [It was alſo cultivated in 1698, by the Dutcheſs of Beaufort[u].

9. This is a very handſome plant. The branches are rough with hairs. Leaves approximating, near a foot in length, ſeſſile, gradually dilated from the baſe into an oblong form, ſerrate in the middle, acuminate, ſmooth on the upper ſurface, rough with hairs and whitiſh on the lower. Peduncle terminating the branch, ſolitary, round, upright, a hand or more in length, porous on the inſide, ending in an ovate ſpike with the flowers hanging down. Bractes before the flowers open form a coma. Calycine leaflets hirſute. The corolla is nearly of the ſame ſize as in *D. ferruginea*, gibbous below, the border four-cleft, the lip obtuſe.

Native of Madeira, in woods, where it was found by Maſſon[x].—Introduced in 1777. It flowers in july and auguſt[y].]

10. Root-leaves many, ſmooth; among theſe ariſes the ſtalk about a foot high; the leaves on it are ſmooth, from four to five inches long, and one inch and a half broad in the middle, half-ſtem-claſping. Spike of flowers terminating, ſhort, looſe. Corollas yellow, almoſt as large as thoſe of n. 5., but ſhorter. It flowers in may, and the ſeeds ripen in autumn.

It grows naturally in Tartary, whence the ſeeds were ſent to the imperial garden at Peterſburgh, and thence to Mr. Miller, who cultivated them in 1759.

[11. Stem herbaceous, a foot and half high, almoſt upright. Leaves quite entire, oppoſite. Flowers ſeſſile: calyx five-cleft: corolla pale violet, bell-ſhaped, ventricoſe at bottom, five-cleft, the ſegments obtuſe, the uppermoſt emarginate. Capſule ovate, acute, two-celled.

Native of Cochinchina.

12. Stem ceſpitoſe, erect, a foot high, round, ſmooth. Leaves acute, ſerrate, oppoſite, on ſhort petioles. Segments of the calyx five, erect, the uppermoſt larger, ſometimes bifid. Corolla duſky purple, bell-ſhaped, ventricoſe, four-cleft, the upper ſegment larger than the reſt. Stigma ſcrew-ſhaped. Capſule ovate-conic, two-grooved, two-celled.

Native of China[z].]

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[f] Hort. kew.
[g] Haller.
[h] Linn. ſpec.
[i] Scopoli.
[k] Park. parad.
[l] Linn. ſyſt.
[m] Krocker.
[n] Leers.
[o] Hort. kew.
[p] Linn. ſyſt.
[q] Allioni.

[r] Gerarde's herb.
[s] Linn. ſpec. & mant.
[t] Hort. kew.
[u] Ibid.
[x] Linn. ſuppl.
[y] Hort. kew.
[z] Loureiro.

PROPAGATION AND CULTURE.

If the ſeeds of the firſt ſort are permitted to ſcatter, the plants will come up in the ſpring, and require only to be weeded out where they are too numerous. The ſeeds of this and of the other ſorts ſhould be ſown in autumn, for thoſe which are ſown in the ſpring ſeldom ſucceed, or at leaſt lie a year in the ground before they grow.

8. This plant begins to flower in may, and there is generally a ſucceſſion of flowers on the ſame plant, till the winter puts a ſtop to them, which renders the plant more valuable. It is propagated by ſeeds, which ſhould be ſown in pots filled with light earth, in the autumn, ſoon after the ſeeds are ripe; theſe pots ſhould be plunged into an old bed of tanners bark, whoſe heat is gone, and in mild weather the glaſſes ſhould be drawn off to admit the air; but in hard rains and froſt they muſt be kept on, to protect the ſeeds from both, which frequently deſtroy them here when they are expoſed; in the ſpring the plants will come up, when they ſhould enjoy the free air in mild weather, but muſt be protected from the cold. When theſe are large enough to tranſplant, they ſhould be each planted into a ſeparate ſmall pot filled with light earth, and placed under the frame till they have taken new root, then they ſhould be gradually inured to the open air. During the ſummer ſeaſon the plants ſhould remain abroad in a ſheltered ſituation, but in the winter they muſt be placed in a green-houſe, for they will not live abroad in England; they muſt not be kept too warm and cloſe in the houſe, for they only want protection from the froſt; therefore in mild weather, they ſhould have free air conſtantly admitted to them, and they require frequent waterings, but they ſhould not have it in too great plenty in winter.

[9. The ninth muſt have the ſame treatment.

Digitalis. See *Chelone, Dracocephalum, Gerardia, Mimulus, Seſamum.*

Digitaria. See *Panicum.*

DILATRIS.

Lin. gen edit. Schreb. n. 82. *Berg. cap.* 9. *Thunb. Lin. ſuppl.* 10. *Juſſ.* 59.

Claſſ. 3. 1. Triandria Monogynia.

Nat. order of *Enſatæ.—Irides* Juſſ.

GENERIC CHARACTER.

Cal. none.

Cor. ſix-petalled, ſuperior. *Petals* ovate-lanceolate, concave, from erect-ſpreading, equal, hirſute on the outſide, permanent.

Stam. *Filaments* three ſubulate, ſhorter than the corolla, the third leſs than the other two. *Anthers* ovate-lanceolate, two-furrowed; that on the ſmaller filament larger.

Pist. *Germ* inferior. *Style* filiform. *Stigma* ſimple, obtuſe.

Per. *Capſule* globular, extremely hirſute, three-celled, three-valved.

Seeds ſolitary, orbicular, compreſſed, ſmooth, perpendicular.

ESSENTIAL CHARACTER.

Cal. none. *Cor.* ſix-petalled hirſute. *Filaments* one leſs than the others. *Stigma* ſimple.

SPECIES.

1. Dilatris umbellata.
Lin. ſyſt. 93. *ſuppl.* 101. *Berg. cap.* 9. *t.* 3. *f.* 5.
Wachendorfia umbellata. *Lin. ſyſt. ed.* 13. 80. *Reich.* 112. *mant.* 320.
Ixia hirſuta. *Lin. mant.* 27. 511.
Petals ovate; corymb faſtigiate hirſute.

2. Dilatris viſcoſa.
Lin. ſyſt. 93. *ſuppl.* 101.
Petals linear, corymb faſtigiate villoſe, viſcid.

3. Dilatris paniculata.
Lin. ſyſt. 94. *ſuppl.* 101.
Petals lanceolate, panicle oblong villoſe viſcid.

DESCRIPTIONS, *&c.*

1. The whole plant hoary and very villoſe except the inſide of the flower. Root fibrous. Root-leaves like thoſe of Cyperus, even, erect, ſtrict; one or two only on the ſtem, lanceolate, ſhort. Umbel (or corymb) regular: univerſal involucre ſix-leaved, lanceolate, ſhort; peduncular rays about ſix, two-parted, with a racemed arm on each ſide; flowers alternate, aſcending, pedicelled: corolla ſmoothiſh within, dark purple: ſtamens the length of the petals; anthers equal: ſtigma three-cornered[a].

2. Of this ſpecies we have no deſcription.

3. Flowers yellowiſh-purple[b].

All theſe are natives of the Cape of Good Hope, and were detected there by Chevalier Thunberg.

PROPAGATION AND CULTURE.

See *Wachendorfia.*

Dill. See *Anethum.*

DILLENIA. (*So named by Linneus in honour of John James Dillenius, the famous profeſſor of botany at Oxford, author of Hiſtoria Muſcorum, Hortus Elthamenſis, &c.*)

Lin. gen. n. 688. *Reich.* 745. *Schreb.* 939. *Linn. tranſ.* 1. 199. *Juſſ.* 281.

Claſſ. 13. 7. Polyandria Polyginia.

Nat. order of *Coadunatæ? Magnoliæ* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* five-leaved: leaflets obovate, obtuſe, concave, leathery, ſmooth within, villoſe without, permanent.

Cor. *Petals* five, obovate, narrowed at bottom, very blunt, very finely ſubcrenate, ſomewhat concave, longer than the calyx, deciduous.

Stam. *Filaments* ſcarcely any. *Anthers* very numerous, inſerted into the baſe of the germ, linear, orange with a black line, ſhorter than the calyx.

Pist. *Germ* ſuperior, ovate. *Styles* ſeveral, erect, ſimple, longer than the anthers. *Stigmas* ſimple.

Per. roundiſh, outwardly coated with as many oblong *capſules*, which are longitudinal, and divided by a furrow; inwardly by a columnar, very large pulpy *receptacle.*

Seeds numerous, very ſmall, neſtling under the capſules.

ESSENTIAL CHARACTER.

Cal. five-leaved. *Pet.* five. *Capſ.* many-ſeeded, connate, filled with pulp.

SPECIES.

1. Dillenia integra.
Thunb. in Linn. tranſ. 1. *p.* 199. *t.* 18.
Leaves obovate obtuſe almoſt entire; peduncles one-flowered.

2. Dillenia ſpecioſa.
Thunb. in Linn. tranſ. 1. *p.* 200.
D. indica. *Lin. ſpec.* 754. *ſyſt.* 507. *Reich.* 2. 624. *hort. cliff.* 221.
Syalita. *Rheed. malab.* 3. 39. *t.* 38, 39. *Raii hiſt.* 1707. *Pluk. mant.* 124. *Burm. ind.* 124.
Leaves oblong, rounded-acute, toothletted; peduncles one-flowered.

3. Dillenia elliptica.
Thunb. in Linn. tranſ. 1. *p.* 200.
Songium. *Rumph. amb.* 2. *p.* 140. *t.* 45.
Leaves elliptic-ovate acute ſerrate, peduncles one-flowered.

4. Dillenia retuſa.
Thunb. in Linn. tranſ. 1. *p.* 200. *t.* 19.
Leaves obovate truncate ſerrate, peduncles one-flowered.

5. Dillenia ſerrata.
Thunb. in Linn. tranſ. 1. *p.* 201.
Sangius. *Rumph. amb.* 2. 142. *t.* 46.
Leaves elliptic-ovate acute ſerrate, peduncles three-flowered.

6. Dillenia dentata.
Thunb. in Linn. tranſ. 1. *p.* 201. *t.* 20.
Wormia triquetra. *Rottb. in nov. act. Hafn.* 2. *p.* 532. *t.* 3.
Leaves ovate retuſe toothed, peduncles three-flowered.

7. Dillenia pentagyna.
Roxb. Coromand. p. 21. *pl.* 20.
Leaves ovate-lanceolate, ſerrate, ſharp, flowers pentagynous.

[a] Linn. [b] Linn. ſuppl.

DESCRIPTIONS, &c.

Theſe are beautiful trees, natives of the Eaſt Indies: the leaves are large and of a leathery ſubſtance: the flowers are axillary or terminating, ſometimes very large; the fruit approaches to that of Cluſia. Juſſieu doubts whether this genus may not be allied more nearly to the natural order of Guttiferæ than of Magnoliæ, in which he has placed it, although the leaves be alternate[a].

1. Branches alternate, wrinkled, duſky, ſmooth. Leaves ſerrulate from the middle to the end; the ſerrulations however are ſcarcely viſible; they are ſmooth on both ſides, paler underneath, nerves alternate, parallel, curved up, with a very fine net of veins between, ſpreading, about a ſpan in length, and a hand in breadth. Petioles ſemicylindric, channelled, villoſe, an inch long. Flowers terminating on the extreme branchlets, ſubſolitary, peduncled.

Native of the iſland of Ceylon, named there *Gudapara* and *Runumidale*.—A decoction of the leaves is uſed by the inhabitants for cleanſing foul ulcers[b].

2. This is a lofty tree, with thick wrinkled aſh-coloured ſmooth branches. Leaves obtuſe with a point, waved and toothletted, with parallel nerves almoſt oppoſite, the upper ſurface ſmooth, the lower obſcure, browniſh, about a foot in length, and a hand in breadth. Petioles thick, ſcarcely an inch in length. Flowers on the branchlets terminating.

Found, according to Rheede, in Malabar, by Thunberg in Java[c].

3. Leaves petioled, acuminate, with oppoſite parallel nerves. Flowers terminating.

Native of Amboina, Celebes and Macaſſar, according to Rumphius[d].

4. Branches alternate, wrinkled, duſky, ſmooth. Leaves approximating, drawn to a point at bottom, entire, remotely ſerrate at top with obſolete ſerratures, truncate and ſubretuſe at the end, ſmooth on both ſides, nerves parallel, alternate, curved up, with a fine net of veins between them, ſpreading, almoſt a hand wide and twice that length. Petioles ſemicylindric, channelled, hirſute at the baſe, ſcarcely an inch long. Flowers terminating.

Native of Ceylon, in woods[e].

5. Leaves petioled, finely ſerrate, nerves almoſt oppoſite or alternate, parallel. Flowers on lateral peduncles, by threes, pedicelled.

Native of Celebes, Macaſſar and Java, according to Rumphius[f].

6. Branches alternate, wrinkled, aſh-coloured, ſmooth. Leaves very obtuſe or emarginate-retuſe, entire at bottom, toothed towards the upper part and at the end, nerves almoſt oppoſite, parallel, directed upwards, ſmooth on both ſides, darker-coloured underneath, a hand in length. Petioles angular, ſmooth, a little ſhorter than the leaf. Flowers on the branches, terminating, racemed, three or thereabouts together. Pedicels alternate, ſmooth, half an inch long[g]. According to Vahl, the peduncles are frequently from four to eight-flowered, branching at the baſe.

Native of Ceylon, where it is known by the name of *Diapara*[h].

7. This is a large tree, with numerous aſcending branches. Leaves alternate, petioled, about the extremities of the branchlets, oblong, pointed, ſharp-ſawed, having large elevated parallel veins, ſmooth, ſhining, except when very young, then downy, from twelve to twenty inches long, and from four to ſix broad. Peduncles collected in bundles from tuberoſities over the naked wood of the two or three year old branchlets, erect, round, ſmooth, two inches long, undivided, one-flowered. Flowers middle-ſized, yellow. Petals oblong. Filaments many; anthers ſword-ſhaped. *Germs* five, ſhort. Stigmas lanced, ſpreading. Pericarp pendulous, ſize of a ſmall nutmeg. Seeds reniform.

It is a native of the mountainous parts of Coromandel, where it flowers in march and april[i].

DIMORPHA. (*From* δις *twice, and* μορφη *form.*)
Lin. gen. Schreb. n. 1179. Parivoa. *Aubl.* 303. *Juſſ.* 350. Eperua. *Aubl.* 142. *Juſſ.* 349.
Claſſ. 17. 4. Diadelphia Decandria.
Nat. order of *Papilionaceæ* or *Leguminoſæ*.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, rounded at the baſe, deeply three or four-cleft, obtuſe.

COR. *Petal* very wide, ventricoſe, convolute at the ſides, crenulate, inſerted into the calyx below the ſtamens, placed at the lower ſide.

STAM. *Filaments* diadelphous, (ſingle at the opening of the petal, and nine-cleft incumbent on the middle of the petal,) aſcending, longer than the corolla. *Anthers* parallelopiped, incumbent.

PIST. *Germ* pedicelled, compreſſed, ſhort. *Style* longer than the ſtamens. *Stigma* ſimple.

PER. *Legume* large, oblique, compreſſed, one-celled.

SEED ſingle or few.

OBS. *Petal ſingle, as in* Amorpha, *but occupying the place of the keel; the wings and ſtandard are wanting.*

Parivoa, *Aubl. has an obovate one-ſeeded legume.*

Eperua, *Aubl. has the filaments thickened at the baſe and villoſe, (in the figure, five only have anthers;) legume ſabre-ſhaped, with three or four ſeeds in it.*

ESSENTIAL CHARACTER.

Petal one large convolute, in place of the keel. Standard and wings none.

SPECIES.

1. Dimorpha falcata.
Eperua. *Aubl. pl. gui.* 1. *p.* 369. *t.* 142.
Leaves pinnate, pods falciform.

2. Dimorpha grandiflora.
Parivoa grandiflora. *Aubl. pl. gui.* 2. *p.* 757. *t.* 303.
Flowers larger than in the other ſpecies.

3. Dimorpha tomentoſa.
Parivoa tomentoſa. *Aubl. pl. gui.* 2. *p.* 159. *t.* 304.
Legume tomentoſe.

DESCRIPTIONS, &c.

1. A tall tree, upwards of ſixty feet high, very much branched at top, and branches much ſcattered. Leaves alternate, pinnate, commonly three on a ſide; ovate-oblong, ſharp-pointed. Flowers numerous, ſpiked. Spikes alternate, extremely long, pendulous, axillary, and terminal.

Native of woods in Guiana; flowering in ſeptember.

2. A large tree, with a trunk more than two feet in diameter. Leaves winged and alternate, leaflets oppoſite, each pair at a diſtance from the other, entire, ovate-lanceolate, ſharp-pointed. Flowers purpliſh, large, borne in cluſters. The wood of this tree is reddiſh, ſolid and compact, and is uſed for various important purpoſes.

It is found in Guiana, and flowers in ſeptember.

3. A tree upwards of twenty feet high, very much branched at top; and branches much ſcattered. Leaves alternate, pinnated, with two or three alternate leaflets. Flowers ſcattered, terminal, axillary.

Flowers in ſeptember, and grows near the banks of rivers in Guiana[k].

DIMORPHOTHECA. See *Calendula*.

DIODĬA. (Διοδιος, *ſubviatica; from its growing by way ſides.*)
Lin. gen. n. 122. *Reich.* 129. *Schreb.* 158. *Gronov. Gærtn. t.* 25. *Juſſ.* 197.
Claſſ. 4. 1. Tetrandria Monogynia.
Nat. order of *Stellatæ*.—*Rubiaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* two-leaved: (two or four-leaved, *G.*) *leaflets* ſubovate, ſuperior equal, permanent: (two larger, the length of half the fruit. *G.*)

COR. one-petalled, funnel-form. *Tube* ſlender, long. *Border* ſmall, ſpreading, four-parted: *diviſions* lanceolate.

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[a] Juſſ. gen. [b] Thunb. in Linn. tranſ. [c] Ibid. [d] Ibid. [e] Ibid. [f] Ibid. [g] Ibid. [h] Ibid.

[i] Roxb. corom. [k] Aublet.

Stam. *Filaments* four, briſtle-ſhaped, upright. *Anthers* verſatile.

Pist. *Germ* roundiſh, four-ſided, inferior. *Style* filiform, length of the ſtamens. *Stigma* two-cleft.

Per. *Capſule* ovate, four-cornered, crowned, larger than the calyx, two-celled, two-valved: (valveleſs, bipartile, eight-furrowed, *G.*)

Seed ſolitary, ovate-oblong, even, convex on one ſide, flat on the other; ſhining; (with two furrows and a ridge between them, *G.*)

ESSENTIAL CHARACTER.

Cor. one-petalled, funnel-form. *Capſ.* two-celled, two-ſeeded.

SPECIES.

1. Diodia virginica.
Lin. ſpec. 151. *ſyſt.* 149: *Reich.* 298. *hort. cliff.* 493. *Gron. virg.* 71. *Gærtn. fruct.* 121. *Swartz prodr.* 151.
Stem branching procumbent ſmooth and even.

2. Diodia ſimplex.
Swartz prodr. 29.
Stem herbaceous ſimple almoſt erect ſmooth and even, leaves ovate-lanceolate.

3. Diodia proſtrata.
Swartz prodr. 30.
Diodioides. *Loefl. itin.* 201.
Stem ſuffruticoſe ſubdivided, branches proſtrate filiform, leaves linear ſomewhat hirſute revolute.

4. Diodia ſcandens.
Swartz prodr. 30.
Stem ſcandent ſuffruticoſe, leaves ovate-lanceolate rigid rugged.

5. Diodia ſarmentoſa.
Swartz prodr. 30.
Stem flaccid ſhrubby, branches oppoſite ſpreading, leaves oblong acute ſomewhat rugged.

6. Diodia verticillata.
Vahl ſymb. 2. 28.
Smooth, leaves lanceolate in whorls rugged at the edge, ſtem herbaceous erect.

DESCRIPTIONS, &c.

1. Stems procumbent, red; branches alternate. Leaves oppoſite. Flowers white[a]. The calyx in ſome is two-leaved only, in others unequally four-leaved, that is with two very minute leaves placed in the interſtices of the larger, and this even ſeems to be the more natural number. Capſule ſmall, of a pale bay colour, the ſurface often chagreened with very minute linear acuminate chaffy white ſquamules, eſpecially towards the end; but which, when the fruit is ripe, are eaſily wiped off, ſo that it is uſually ſmooth. Receptacle none; the ſeeds being fixed to the middle of the partition; theſe are blackiſh[b].—Native of Virginia.

2, 3, 4, 5. Natives of the Weſt Indies. The ſecond, third and fifth of Jamaica, and the fourth of Hiſpaniola[c].

6. Stem ſimple, a foot high, ſmooth, as is alſo the whole plant, even. Leaves ſeſſile, from five to eight in each whorl, unequal, without any viſible veins or nerves, not marked with lines, very rugged about the edge, connected by a ſtipulaceous ciliate membrane. Flowers ſeveral together in whorls, incloſed by the ſtipule; the terminating whorl larger than the others. Capſule two-celled, linear, ſomewhat compreſſed, ciliate on both ſides at top, crowned with two teeth. Seed ſingle in each cell, linear.

Native of the iſland of Santa Cruz; ſent by Pflug[d].

DIONÆA. (*One of the names of Venus; from her mother Dione. A genus conſtituted by Ellis.*)
Lin. gen. Reich. n. 584. *Schreb.* 729. *Ellis monogr. Juſſ.* 431.
Claſſ. 10. 1. Decandria Monogynia.
Nat. order of *Gruinales.*

GENERIC CHARACTER.

Cal. *Perianth* five-leaved, upright; *leaflets* oblong, acute, permanent.

Cor. *Petals* five, ſeſſile, oblong, obtuſe, concave.

Stam. *Filaments* ten, ſubulate, ſhorter. *Anthers* roundiſh, pollen tricoccous.

Pist. *Germ* roundiſh, depreſſed, crenate. *Style* filiform, ſhorter than the filaments. *Stigma* ſpreading, fringed on the edge.

Per. *Capſule* one-celled, gibbous.

Seeds very many, ſubovate, very ſmall, affixed to the baſe of the capſule.

Obs. *The number of ſtamens is not always conſtant.*

ESSENTIAL CHARACTER.

Cal. five-leaved. *Pet.* five. *Capſ.* one-celled, gibbous, containing many ſeeds.

SPECIES.

1. Dionæa Muſcipula. *Venus's fly-trap.*
Lin. ſyſt. 403. *Reich.* 281. *mant.* 238. *act. upſ. nov.* 1. 98. *t.* 8. *Ellis monogr. fig. & deſcr. Shaw nat. miſc. t.* 40.

DESCRIPTION, &c.

Root ſquamous, ſending forth but few fibres, like thoſe of ſome bulbs, and perennial. *Stalk* about ſix inches high, round, ſmooth, without leaves, ending in a ſpike of flowers. *Leaves* many, inclining to bend downwards, and placed in a circular order, jointed, ſucculent; the lower joint, which is a kind of ſtalk, is flat, longiſh, two-edged, and inclining to heart-ſhaped. In ſome varieties they are ſerrate on the edges near the top: the upper joint conſiſts of two lobes, each ſemi-oval, the margins furniſhed with ſtiff hairs like the eye-laſhes, embracing or locking into each other when they cloſe: this they do when they are irritated within; the upper ſurface of theſe lobes is covered with ſmall red glands, appearing, when highly magnified, like the fruit of the Arbutus compreſſed: among the glands, about the middle of each lobe, are three very ſmall erect ſpines; when the lobes incloſe any ſubſtance, they never open again while it continues there; if it can be ſhoved out ſo as not to ſtrain the lobes, they expand again, but if force be uſed to open them, ſo ſtrong has nature formed the ſpring of their fibres, that one of the lobes generally ſnaps off rather than yield. *Flowers* milk-white, on peduncles, with a little pointed bracte at the bottom of each[e].

What Ellis calls the lower joint of the leaf, Linneus looks upon as the petiole winged in the ſame manner as in the Orange. The ſtem is a ſcape. The flowers grow in a corymb reſembling an umbel: the petals are marked with ſeven ſtreaks and bend in at the end. Linneus affirms that when the entrapped inſect ceaſes to ſtruggle, and is quiet, the leaf opens and permits it to eſcape. This does not agree with Ellis's account: for he affirms that the lobes never open again, ſo long as the animal continues there. He thinks it probable that a ſweet liquor diſcharged by the red glands tempts the inſect to its deſtruction. He adds, that if a ſtraw or a pin be introduced between the lobes, they will graſp it as faſt as if it were an inſect.

A ſpecimen of this ſingular plant was firſt ſent to Mr. Ellis in the year 1765, by Mr. Peter Collinſon; and he received it from Mr. John Bartram of Philadelphia, botaniſt to the King. But we are indebted to Mr. Willam Young, a native of Philadelphia, for the introduction of it alive, and in conſiderable quantities[f]. This, according to the Kew catalogue, was in 1768.

It is a native of the ſwamps of North Carolina, near the confines of South Carolina, about the latitude of 35°. N., where the winters are ſhort, and the ſummers very hot; it flowers there in july and and auguſt.

The plants introduced by Mr. Young were all loſt: and this ſingular plant was again brought into our gardens in 1789; but it will be difficult long to preſerve a ſwamp plant from Carolina.

PROPAGATION AND CULTURE.

Being a ſwamp plant, a north-eaſt aſpect will be the propereſt to plant it in, to keep it from the direct rays of the meridian ſun; and in winter, it will be neceſſary to ſhelter it with a bell-glaſs; which ſhould be covered with ſtraw or a mat in hard froſts. Its ſenſitive quality will be in proportion to the heat of the weather, as well as the vigour of the plant.

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[a] Linn. ſyſt.
[b] Gærtner.
[c] Swartz.
[d] Vahl.
[e] Ellis.
[f] Ibid.

It may alſo be planted in pots of light mooriſh earth, for in ſuch the plants come over mixed with white ſand, and placed in pans of water, in an airy ſtove; where the heat of ſuch a ſituation, being like that of its native country, will make it ſurprizingly active.

Our ſummers are not warm enough to ripen the ſeed[h].]

DIOSCOREA. (*So named in honour of Pedacius Dioſcorides, of Anazarbæa, who is ſuppoſed to have lived in the time of Nero. He is author of a large treatiſe on the Materia Medica in Greek.*)

Engl. *Yam.* Fr. *Igname.*

Lin. gen. n. 1122. *Reich.* 1227. *Schreb.* 1530. *Plum. gen.* 26. *Gærtn. t.* 17. *Juſſ.* 42.

Claſſ. 22. 6. Dioecia Hexandria.

Nat. order of *Sarmentaceæ. Aſparagi.* Juſſ.

GENERIC CHARACTER.

* *Male.*

CAL. *Perianth* one-leafed, bell-form, ſix-parted; *diviſions* lanceolate, ſpreading at top.

COR. none; unleſs you take the calyx for it.

STAM. *Filaments* ſix, capillary, very ſhort. *Anthers* ſimple.

* *Female.*

CAL. *Perianth* as in the male.

COR. none.

PIST. *Germ* very ſmall, three-ſided. *Styles* three, ſimple. *Stigmas* ſimple.

PER. *Capſule* large, triangular, three-celled, three-valved.

SEEDS in pairs, compreſſed, girt with a large membranous border.

OBS. *The large compreſſed cavity of the albumen, is peculiar to the ſeeds of this genus and* Rajania. *Gærtn.*

ESSENTIAL CHARACTER.

MALE. *Cal.* ſix-parted. *Cor.* none.

FEM. *Cal.* ſix-parted. *Cor.* none. *Styles* three. *Capſ.* three-celled, comprrſſed. *Seeds* two, membranaceous.

SPECIES.

1. Dioſcorea pentaphylla.
Lin. ſpec. 1462. *Reich.* 4. 260. *hort. cliff.* 459. *Fl. zeyl. n.* 363. *Rumph. amb.* 5. *t.* 127. *Rheed. mal.* 7. 67. *t.* 35. *Raii ſuppl.* 133. (Battata.)
D. digitata. *Mill. dict. n.* 6.
Leaves digitate.

[2. Dioſcorea triphylla.
Lin. ſpec. 1462. *Reich.* 4. 260. *hort. cliff.* 459. *Gærtn. fruct.* 66. *Rumph. amb.* 5. *t.* 128. *Rheed. mal.* 7. 63. *t.* 33. *Raii ſuppl.* 133.
Leaves ternate.

3. Dioſcorea trifida.
Lin. ſyſt. 888. *ſuppl.* 427.
Leaves cordate trifid.

4. Dioſcorea aculeata.
Lin. ſpec. 1462. *Reich.* 4. 260. *hort. cliff.* 459. *Lour. cochinch.* 625. *Burm. ind.* 214. *Rumph. amb.* 5. *t.* 126. *Rheed. mal.* 7. 71. *t.* 37. *Raii ſuppl.* 133.
Leaves cordate, ſtem prickly bulb-bearing.]

5. Dioſcorea alata. *Wing-ſtalked Dioſcorea.*
Lin. ſpec. 1462. *Reich.* 4. 260. *fl. zeyl. n.* 360. *Brown. jam.* 359. 2. *Sloan. jam.* 1. 139. (Volubilis). *Rheed. mal.* 7. 71. *t.* 38. *Raii ſuppl.* 134. *Lour. cochinch.* 623. *Rumph. amb.* 5. *t.* 120—123, 125.
Ricophora 1. *Mill. dict. edit.* 3. *vol.* 2. *addenda.*
Leaves cordate, ſtem winged bulb-bearing.

6. Dioſcorea bulbifera.
Lin. ſpec. 1463. *Reich.* 4. 261. *hort. cliff.* 459. *fl. zeyl. n.* 359. *Rumph. amb.* 5. *t.* 154. *Rheed. mal.* 7. 69. *t.* 36, *Herm. par. t.* 217. *Pluk. alm. t.* 220. *f.* 6. (Rhizophora). *Raii ſuppl.* 133. (Battata.)
Leaves cordate, ſtem even bulb-bearing.

7. Dioſcorea ſativa. *Cultivated Dioſcorea,* or *Yam.*
Lin. ſpec. 1463. *Reich.* 4. 261. *hort. cliff.* 459. *t.* 28. *fl. zeyl. n.* 358. *Brown. jam.* 360. *Gærtn. fruct.* 66. *Rumph. amb.* 5. *t.* 180. *Rheed. mal.* 8. *t.* 51. *Plum. ic. t.* 117. *f.* 1. *Sloan. jam.* 1. 140. (Volubilis). *Raii. ſuppl.* 134.
Leaves cordate alternate, ſtem even round.

8. Dioſcorea villoſa. *Hairy Dioſcorea.*
Lin. ſpec. 1463. *Reich.* 4. 261. *Rumph. amb.* 5. *t.* 162? *Gron. virg.* 121. 156. *Plum. ic. t.* 117. *f.* 2? (Polygonum). *Pluk. alm. t.* 375. *f.* 5. (Bryoniæ ſim.)
Leaves cordate alternate and oppoſite; ſtem even.

9. Dioſcorea oppoſitifolia.
Lin. ſpec. 1463. *Reich.* 4. 261. *fl. zeyl. n.* 361. *Rumph. amb.* 5. *t.* 122. *Pet. gaz. t.* 31. *f.* 6. *Lour. cochinch.* 624.
Leaves oppoſite ovate acuminate.

[10. Dioſcorea ſeptemloba.
Lin. ſyſt. 889. *Thunb. jap.* 149.
Leaves cordate ſeven-lobed ſeven-nerved.

11. Dioſcorea quinqueloba.
Lin. ſyſt. 889. *Thunb. jap.* 150. *Kæmpf. ic. ſelect. t.* 15.
Leaves cordate five-lobed nine-nerved.

12. Dioſcorea japonica.
Lin. ſyſt. 889. *Thunb. jap.* 151.
Leaves cordate acuminate nine-nerved.]

13. Dioſcorea haſtata.
Mill. dict. n. 2.
D. ſcandens, fol. haſt. fructu racemoſo. *Houſt. Mſſ.*
Leaves haſtate, ſtem even, racemes very long.

[14. Dioſcorea eburina.
Lour. cochinch. 625. *Burm. ind.* 215? (Cylindrica). *Rheed. mal.* 7. 95. *t.* 50. (Kappa Kelengu).
Leaves heart-ſhaped ſeven-nerved alternate, flowers hermaphrodite in ſimple long racemes.

15. Dioſcorea cirrhoſa.
Lour. cochinch. 625.
Leaves ovate-lanceolate three-nerved, flawers hermaphrodite three-ſtamened, ſtem cirrhoſe.

DESCRIPTIONS, &c.

Roots uſually tuberous. Stem twining from right to left. Flowers axillary, in ſpikes or racemes. Perennial.

1. Root very large and thick. Stalks ſpiny, ſlender. Leaves quinate, flat, ſmooth, thin, on petioles ſtriated within: the midrib puts out ſeveral tranſverſe nerves, and theſe others covering the back as it were with a net. Flowers firſt yellow, then turning blackiſh[a].

Native of the Eaſt Indies and the Society Iſles.

2. This is very nearly allied to the foregoing, and it may be doubted whether it be a diſtinct ſpecies[b]. The ſtalks are round, ſlender, ſmooth, ſpiny. Leaves above duſky green, beneath ſmooth and ſhining, with whitiſh prominent nerves, on long petioles[c].

Capſule two inches long, from an emarginate and a kind of cordate baſe prolonged into an elliptic form, and contracted at top into a ſhort dagger point; otherwiſe it reſembles that of *D. ſativa,* except that it is much ſtiffer. Seeds in pairs, ſemi-elliptic, about an inch long, of a cinnamon colour[d].

Native of Malabar.

3. Stem winged bearing tubers. Leaves nerved, ſemitrifid or palmate, the ſide lobes next the petiole much emarginated and produced behind into ſinuous lobes.

Native of Surinam[e].

4. Stem ſuffruticoſe, twining, round, ſlender, very much branched: with many ſtraight, ſhort, ſcattered prickles. Leaves ovate, five-nerved, ſmooth, alternate, on long ſlender petioles. Flowers in long, ſpiked, lateral racemes. The calyx has from three to ſix acute, very ſhort, unequal, ſpreading leaflets. The corolla has ſix ovate, concave petals, almoſt cloſed, and of a duſky purple colour. Filaments awl-ſhaped, equal to the corolla, with roundiſh

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[h] Ellis.

[a] Hort. malab. [b] Linn. ſpec. [c] Hort. malab. [d] Gærtner. [e] Linn. ſuppl.

anthers. Germ inferior. The root is an oblong, eſculent tuber, white within, pale yellow without, ſurrounded with ſhort fibres[f].

Native of Malabar and Cochinchina.

5. Stem furniſhed with longitudinal membranes, like *Convolvulus Turbith*. Leaves very deeply cordate, ſmooth, three-nerved, almoſt twice as long as they are broad, acuminate[g].

Root a foot or more long, as big as a man's leg or thigh, brown on the outſide; within white or reddiſh purple, viſcid, but when boiled very mealy. Stalk the bigneſs of a gooſe-quill, ſquare, with a thin reddiſh membrane at each corner, winding itſelf round poles nine or ten feet high, and putting out leaves at every three inches diſtance, oppoſite, on ſquare winged footſtalks two inches long. Leaves two inches and a half long, an inch and three quarters broad at the baſe, almoſt heart-ſhaped, pointed, yellowiſh green, having many ribs ariſing from the end of the footſtalk with tranſverſe ones between. Peduncles axillary an inch or more in length, with ſmall flowers of a yellowiſh green colour[h].

Native both of the Eaſt and Weſt Indies, and cultivated there for food as well as the ſixth and ſeventh ſpecies.

5. This ſpecies indeed has a better claim, as Forſter obſerves, to the name of *ſativa* than the ſeventh; for it is univerſally cultivated in the Eaſt and Weſt Indies, in Africa, and in all the iſlands of the Southern ocean, within the torrid Zone, and even as far as New Zealand. The roots are frequently three feet long, and weigh thirty pounds. In all the iſlands of the South Sea, this Yam is known by the Malay name *Uſi* or *Ubi*. The Portugueſe call this root *Inhame*, hence the French *Igname*, and our *Yam*.

Cultivated here in 1739, by Mr. Miller[i].

6. Stalks ſlender, ſomewhat woody, twining round each other. Leaves on long petioles, which are angular, grooved within, ſomewhat protuberant at the baſe; they are oblong, ſoft, ſmooth, thin, ſtretched out longer on one ſide than the other; the midrib ſends out four annular nerves, prominent on the lower ſurface[k].

The leaves have many nerves and are acuminate. From the axils grow tubers which take root[l].

Native of both Eaſt and Weſt Indies, and the iſlands of the South Seas.—Mr. Miller calls this the Yam, and quotes the ſynonym of Sloane, with winged ſtalks, whereas the ſtalks of this ſpecies are even.]

7. This has ſlender ſtalks, climbing to the height of eighteen or twenty feet. The leaves have five longitudinal veins, which ariſe from the footſtalks, and diverge towards the ſides, but meet again at the point; they ſtand upon pretty long footſtalks, and from the baſe of theſe ariſe the branching ſpikes of flowers, which are ſmall and have no beauty.

[Leaves ſmooth, acute, nerved, ſoft, equal in length and breadth[m].

Root a foot broad and flatter than in n. 5. almoſt palmated like ſome Orchiſes, dirty brown on the outſide. Stalks not winged but round[n].—If it be Sloane's plant, it is the Negro Country Yam, which he ſays is much planted in Jamaica.

Browne calls it the Wild Yam (if it be his third ſpecies and not rather his firſt), and ſays that it is not put to any uſe in Jamaica. He refers to Fagopyrum ſcandens, *&c.* of Sloane 138.—There is much confuſion in the ſynonyms.

Capſule obovate-rounded, leathery, three-ſided, compreſſed into three wings, valves opening along the edge of the wings, accompanied in the middle with a very narrow partition, to the inner edge of which the ſeeds are fixed; theſe are irregularly triangular or roundiſh, and of a browniſh red colour[o].

Native of the Eaſt and Weſt Indies, and Japan. Mr. Miller received the ſeeds from Jamaica by Dr. Houſtoun, before the year 1733.

The Yam is largely cultivated for food in Africa and the Eaſt and Weſt Indies, eſpecially in the latter for the negroes. The roots grow to a great ſize, are mealy, and eſteemed to be eaſy of digeſtion; they are palatable, and not inferior to any roots now in uſe, either for delicacy of flavour or nutriment. They are eaten inſtead of bread, either roaſted on the embers or boiled; the flower is alſo made into bread and puddings.

In Otaheite they make a diſh which they eſteem very delicious, from the roots of the Yam, with the kernel of the Coco nut ſcraped, and the pulp of the Muſa or Banana. The juice of Yam roots freſh is acrid, and excites an itching on the ſkin. There are many varieties of theſe roots, ſome ſpreading out like the fingers (Rumph. t. 121.), others twiſted like a ſerpent (Rumph. t. 122.), others again very ſmall, ſcarcely weighing more than a pound, with a whitiſh aſh-coloured bark, whereas the bark is commonly black. The fleſh of the Yam is white or purpliſh, and viſcid, but becomes farinaceous or mealy when dreſſed. The varieties above-mentioned occurred to our circumnavigators in the iſland of Otaheite, and belong rather to the fifth ſpecies[p]: there are doubtleſs many varieties of a plant ſo generally cultivated.]

8. This has broad, round, heart-ſhaped leaves, which end in acute points; they have many longitudinal veins, which ariſe from the footſtalk, and diverge to the ſide, but afterwards join at the point. The flowers come out on long looſe ſtrings, on ſhort pedicels.

[Native of Florida and Maryland, Cultivated 1759, by Mr. Miller[q].

9. This has the appearance of a *Smilax*. Stem round, woody, twining, unarmed. Leaves three-nerved, quite entire, ſmooth, petioled, pendulous. Racemes of male flowers axillary, oppoſite, ſolitary, ſubvilloſe, compoſed of three cylindric aments; the flowers are almoſt ſeſſile[r].—Mr. Miller ſeems to confound this with the foregoing.

Native of the Eaſt Indies, Japan, and Cochinchina, where the roots are preferred to all others. Loureiro doubts whether this be different from the twelfth.

10. The whole plant ſmooth. Stem round, climbing. Leaves alternate, entire, even, a hand long and broad, the upper ones gradually ſmaller; petioles a finger's length. Flowers axillary, in racemes, very ſmall. Capſule ovate-triangular with the corners winged, emarginate with the ſtyle permanent.

Native of Japan[s].

11. Stem filiform, twining, very long, with the reſt of the plant ſmooth. Leaves alternate, petioled, turned all the ſame way; the loweſt ſeven-lobed and very large; the higher ones five-lobed; the uppermoſt three-lobed and ſmaller; entire, acuminate, ſpreading. Petioles ſwelling at top and bottom, reflex, a finger's length. Racemes axillary two or three, looſe, near a ſpan in length. Flowers on patulous pedicels, a line in length, three or four together. Bractes ovate, acute. Calyx ſaffron-coloured. Germ inferior, ſmooth. Capſule oblong-three-ſided, crowned with the permanent calyx, the corners ſharp, produced and compreſſed: it is often barren. Seeds minute, a pair in each wing.

Native of Japan[t].

12. The whole plant ſmooth. Stem filiform, angular, twining, branched. Branches ſcattered, few, reſembling the ſtem. Leaves oppoſite, petioled, oblong, entire, netted, an inch or an inch and half in length. Petiole ſomewhat angular, reflex-ſpreading, nearly the length of the leaf. Spikes axillary, one or two together, ſpreading, longer than the leaves, the rachis angular. It very much reſembles *Rajania cordata*, were it not for the nine nerves on the leaves. The root of this is eaten boiled and cut into ſlices.—Native of Japan[u].]

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[f] Loureiro. [g] Linn. zeyl. [h] Sloane. [i] Hort. kew. [k] Hort. malab. [l] Linn. zeyl. [m] Ibid. [n] Sloane. [o] Gærtner.

[p] Forſter eſcul. p. 57. [q] Hort. kew. [r] Linn. zeyl. [s] Thunberg. [t] Ibid. [u] Ibid.

13. This differs from the ſeventh in the ſhape of the leaves; theſe having two round ears at their baſe, but the middle extends to an acute point, like that of an halbert. The bunches of flowers are longer, and looſer than thoſe of the ſeventh ſort.

[14. Stem ſhrubby, unarmed, long, twining; the branches and petioles four-cornered. Leaves acuminate, ſmooth. Calyx three-leaved, with ovate, erect leaflets. Corolla three-petalled, ovate, fleſhy, yellow, concave, nearly equal to the calyx. Filaments hardly any: anthers roundiſh, two-celled, very ſmall. Germ inferior, oblong, three-ſided, without any ſtyle, but three oblong, reflex ſtigmas. Capſule oblong-oval, the angles entering deep. Seeds ovate, few. Root vertical, conſiſting of one or two tubers, three feet long, round, regular, ſharpiſh, curved a little, in ſhape and whiteneſs reſembling elephant's teeth, whence the vernacular name *Khoai nga*, and the trivial *eburina*.

15. Stem ſhrubby, long, ſlender, climbing. Leaves quite entire, ſmooth, oppoſite, petioled. Flowers very ſmall, axillary, on three-flowered peduncles. Calyx ſix-leaved, ſuperior: leaflets ovate, thick, curved, almoſt cloſed, permanent, in a double row, of which the inner is ſmaller. Corolla and filaments none. Anthers three oblong, erect. Germ oblong, three-cornered, without any ſtyle, but three acute, reflex ſtigmas. Capſule three-cornered-ovate. Seeds orbiculate, covered with a thin membranous aril. The root is a middle-ſized irregular tuber. The capſule is that of Dioſcorea, but it differs in ſeveral other characters.

Theſe are both natives of Cochinchina [x].]

PROPAGATION AND CULTURE.

Theſe plants may be propagated by laying their branches into the ground, where in about three months they will put out roots, and may then be taken from the old plants, and put into ſeparate pots, which ſhould be plunged into the tan-bed in the ſtove. During winter they ſhould have little water; but in ſummer, when they are growing vigorouſly, they ſhould be watered three or four times a week; and in warm weather the glaſſes ſhould be opened to admit a large ſhare of free air. When ſeeds are received, they ſhould be immediately ſown in pots, and plunged into a hot-bed; where, if it be early in the ſpring, the plants will come up the ſame ſeaſon: but when they are ſown late, the ſeeds often remain in the ground till the following ſpring before they vegetate: in this caſe, the pots muſt be ſcreened from froſt during the winter, and put into a new hot-bed in the ſpring.

They may alſo be increaſed by cutting the roots in pieces, as practiſed for Potatoes; putting each piece in a pot filled with freſh earth, and plunged into the bark-pit; giving them little water until they ſhoot, leſt they ſhould rot. The roots do not grow to any great ſize here; and the plants having little beauty, ſeldom flowering, and requiring much care and room, they are ſeldom allowed a place in our ſtoves, except in very curious collections.

[Browne affirms that the roots of the Yams muſt be cut ſo as to have a little of the ſkin to each piece, for by that alone they germinate; the roots having no apparent buds or eyes, but caſting out their weakly ſtems from every part of the ſurface alike. Two or three plants are put into a hole: the holes are dug pretty regular, a foot and a half or two feet ſquare; theſe are afterwards filled from the adjoining banks, and the whole piece is covered with cane-traſh, which ſerves to keep the ground cool and freſh, and to prevent the growth of weeds, from which theſe plants muſt be carefully preſerved, until they grow ſufficiently to cover the mould. They are planted commonly in auguſt, and are ripe about november or december following.

When the roots are dug up, care ſhould be taken to wound them as little as poſſible, for ſuch as are cut throw out their ſprouts very early, and are ſeldom fit for any thing but planting. They ſhould be rubbed over with aſhes, and piled regularly on beds or hurdles, raiſed above the floor, that the air may come eaſily between them; or if they be piled in heaps, ſome aſhes ſhould be ſtrewed between the layers.]

DIOSMA. (Διος οσμη, *Jovis s. divinus odor*; *ſo called from its divine ſmell.*)
Lin. gen. n. 272. *Reich.* 292. *Schreb.* 374. *Juſſ.* 298. *Gærtn. t.* 94. *Hartogia Edit.* 6.
Claſſ. 5. 1. Pentandria Monogynia.
Nat. order of *Aggregatæ.*—*Rutaceæ* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* five-leaved: *leaflets* ovate, acute, permanent.

Cor. *Petals* five, ovate, obtuſe, ſeſſile, erect-ſpreading. *Nectaries* five, placed on the germ.

Stam. *Filaments* five, ſubulate. *Anthers* ſubovate, erect.

Pist. *Germ* crowned with the nectary. *Style* ſimple, length of the ſtamens. *Stigma* obſcure.

Per. *Capſules* five, ovate-acuminate, compreſſed, conjoined inwardly at the margin, diſtant at the tips, gaping at the upper ſuture.

Seeds ſolitary, oblong, ovate-depreſſed, acuminate at the point: an elaſtic *aril*, gaping on one ſide involving each ſeed.

Obs. *This is a multiform genus as to ſex, figure of nectaries, number of capſules; hence it was divided into* Hartogia *and* Dioſma; *but farther obſervations have brought them back into one genus.* Syſt. Veget. p. 199.
There are ſpecies with monoecous flowers, others with hermaphrodite; others with ten ſtamens, of which five are ſterile; and others differ otherwiſe from their congeners. R.

ESSENTIAL CHARACTER.

Cor. five-petalled. *Nect.* five on the germ. *Capſ.* three or five conjoined. *Seeds* veiled.

SPECIES.

1. Dioſma oppoſitifolia. *Oppoſite-leaved Dioſma.*
Lin. ſpec. 286. *Reich.* 556. *hort. cliff.* 71. *Comm. rar. t.* 1. (Spiræa). *Seba theſ.* 2. 41. *t.* 40. *f.* 5. (Hypericum).
Leaves ſubulate acute oppoſite.

2. Dioſma hirſuta. *Hairy-leaved Dioſma.*
Lin. ſpec. 286. *Reich.* 556. *hort. cliff.* 71. *Berg. cap.* 65. *Comm. rar. t.* 3. *Gærtn. fruct.* 2. 82.
Leaves linear hirſute.

3. Dioſma rubra. *Red-flowered Dioſma.*
Lin. ſpec. 287. *Reich.* 356. *hort. cliff.* 72. *Berg. cap.* 62. *Mill. fig. t.* 125. *f.* 1? marked 124. *Comm. rar. t.* 2. (Spiræa). *Pluk. mant. t.* 347. *f.* 4. (Erica æthiopica).
Leaves linear mucronate ſmooth keeled, dotted in two rows beneath.

4. Dioſma ericoides. *Sweet-ſcented Dioſma.*
Lin. ſpec. 287. *Reich.* 556. *Berg. cap.* 65. *Mill. fig. t.* 125. *f.* 2. marked 124. *Pluk. amalth. t.* 279. *f.* 5. (Ericæformis).
Leaves linear-lanceolate convex beneath, imbricate in two rows.

[5. Dioſma capenſis.
Lin. ſyſt. 239. *Reich.* 557.
Hartogia capenſis. *Lin. ſpec.* 288.
Leaves linear three-ſided, dotted beneath.

6. Dioſma capitata.
Lin. ſyſt. 239. *Reich.* 557. *mant.* 210.
Leaves linear imbricate ſcabrous ciliate, flowers in ſpiky heads.

7. Dioſma unicapſularis.
Lin. ſyſt. 239. *ſuppl.* 155.
Leaves linear-lanceolate, capſules one-celled.

8. Dioſma latifolia.
Lin. ſyſt. 239. *ſuppl.* 154.
Leaves ovate-crenate, peduncles axillary ſolitary, ſtem villoſe.

9. Dioſma marginata.
Lin. ſyſt. 239. *ſuppl.* 155.
Leaves cordate-attenuated membranous-edged.

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[x] Loureiro.

10. Dioſma barbigera.
Lin. ſyſt. 239. *ſuppl.* 155.
Leaves cordate ſtem-claſping, petals bearded.
11. Dioſma tetragona.
Lin. ſyſt. 239. *ſuppl.* 155.
Leaves cordate, retuſe, folded together and keeled, ciliate, branches one-flowered.
12. Dioſma cupreſſina.
Lin. ſyſt. 239. *mant.* 50 and 343. *Reich.* 557. *Pluk. alm. t.* 279. *f.* 2. (Ericæformis.)
D. dichotoma. *Berg. cap.* 63.
Brunia uniflora. *Lin. ſpec.* 289. *hort. cliff.* 71.
Leaves ovate three-cornered imbricate, flowers ſolitary terminating ſeſſile.
13. Dioſma imbricata. *Imbricated Dioſma.*
Lin. ſyſt. 239. *Reich.* 558. *mant.* 124. (Hartogia.)
Leaves ovate mucronate imbricate ciliate.]
14. Dioſma lanceolata.
Lin. ſpec. 287. *ſyſt.* 239. *Reich.* 558.
Hartogia lanceolata. *Lin. ſyſt.* 625. *edit.* 12.
Leaves elliptic obtuſe ſmooth.
15. Dioſma ciliata. *Ciliated Dioſma.*
Lin. ſpec. 287. *ſyſt.* 239. *Reich.* 558. *Berg. cap.* 68. *Pluk. alm. t.* 411. *f.* 3. *Seba mus.* 2. *t.* 17. *f.* 5. (Spiræa.)
Hartogia ciliaris. *Lin. ſyſt.* 625. *edit.* 12.
Leaves lanceolate ciliate wrinkled.
16. Dioſma crenata. *Crenated Dioſma.*
Lin. ſpec. 287. *ſyſt.* 239. *Reich.* 558. *amœn* 4. 308.
Hartogia betulina. *Berg. cap.* 67.
Leaves lanceolate-oval oppoſite glandular-crenate, flowers ſolitary.
17. Dioſma uniflora. *One-flowered Dioſma.*
Lin. ſpec. 287. *ſyſt.* 239. *Reich.* 558. *Pluk. mant. t.* 342. *f.* 5. (Ciſtus.) *Curt. magaz. t.* 273.
Hartogia uniflora. *Berg. cap.* 71.
Leaves ovate-oblong, flowers ſolitary terminating.
18. Dioſma pulchella. *Oval-leaved Dioſma.*
Lin. ſpec. 288. *ſyſt.* 239. *Reich.* 559.
Hartogia pulchella. *Lin. ſyſt.* 625. *edit.* 12. *Berg. cap.* 69.
Leaves ovate obtuſe glandular-crenate, flowers twin axillary.
19. Dioſma aſiatica.
Lour. cochinch. 161.
Leaves lanceolate alternate, racemes ſubterminating.

DESCRIPTIONS, &c.

The ſpecies are all ſhrubs bearing the reſemblance of heaths. The leaves are either oppoſite or ſcattered, frequently crowded and linear, ſometimes having the edge underneath dotted. The flowers are in corymbs, or heads at the ends of the branches. The calyxes of ſome are glandulous, and dotted[a]. They are natives of the Cape of Good Hope.]

1. This riſes to the height of three feet; the branches are very long and ſlender, and are produced from the ſtem very irregularly. The leaves are placed croſs-wiſe in pairs, and are pointed; every evening they cloſe up to the branches. The flowers are produced along the branches from between the leaves; and in the evening, when they are expanded, and the leaves cloſely embrace the branches, the whole plant appears as if covered with ſpikes of white flowers; and as it continues a long time in flower, it makes a fine appearance when intermixed with other exotics in the open air.

[Introduced 1774, by Mr. Francis Maſſon[b], into the Kew garden, but it had been cultivated before by Miller.]

2. This ſort makes a very handſome ſhrub, growing to the height of five or ſix feet. Stalks woody, ſending out many ſlender branches. The leaves come out alternately on every ſide. Flowers in ſmall cluſters at the ends of the ſhoots; they are white, and are ſucceeded by ſtarry ſeed-veſſels, having five corners, like thoſe of the ſtarry aniſe; each of theſe corners is a cell, (cocculus) containing one ſmooth, ſhining, oblong, black ſeed: theſe ſeed-veſſels abound with a reſin, which affords a grateful ſcent, as does alſo the whole plant.

[Cultivated by Mr. Miller in 1731[c].]

3. This is of humbler growth, ſeldom above three feet high, and ſpreads out into many branches. Leaves reſembling thoſe of heath. Flowers in cluſters at the ends of the branches, like thoſe of the ſecond ſort, but ſmaller, and the bunches not ſo large.

[According to Linneus, it has the habit and leaves of Juniper; theſe are ſmooth, and ſubtriquetrous.

The ſpecies which is figured in Mr. Miller's plates approaches, as he ſays, near to this, but the leaves are longer, more pointed and ſmooth. He deſcribes it as growing three or four feet high, and ſending out many lateral branches, which extend pretty wide every way, ſo as to form a large buſhy head. The leaves are pretty long and narrow, ending in a ſharp point; they are of a light green colour and ſmooth, and when bruiſed emit a ſtrong balſamic odour. The flowers grow in ſmall cluſters towards the extremity of the branches, and are white. Probably therefore not this ſpecies.

4. This is a low buſhy ſhrub, which ſeldom riſes above two feet high, but ſpreads out its branches far on every ſide. The leaves are narrow and ſmooth, of a light green colour, and being ranged on each ſide the branches, appear flat on the upper and under ſide; when they are bruiſed, they emit a very ſtrong penetrating odour. The flowers are produced ſingly from between the leaves; they are white and tinged on their upper ſurface. The nectary is leſs viſible, and the ſeed-veſſels are much ſmaller[d]. The Hottentots uſe this and other ſpecies to ſcent their ointments.

Cultivated in 1756, by Mr. Miller[e].

5. Leaves oppoſite. Flowers white, in a corymb. The barren ſtamens have almoſt the appearance of petals[f]. Introduced in 1786, by Mr. Fr. Maſſon[g].

6. Stem proliferous, two feet high, erect, brown, having the appearance of a large Heath or *Brunia nodiflora*. Leaves crowded, ſcattered, in eight rows, on the outſide convex, roughiſh, edged and ciliate a little. Flowers purple, ſeſſile and forming a head. Calyx imbricate, leaflets (the inmoſt and true ones only five) ovate, pubeſcent at the edge. Petals roundiſh, with the claws the length of the calyx. Nectaries very ſmall, awnleſs[h].

7. Branches wand-like, even. Leaves alternate, ſubpetioled, linear-lanceolate, even above, longitudinally wrinkled underneath, ſmooth, quite entire at the edge, but as it were ſerrate with pellucid dots. Peduncles lateral, few-flowered, much ſhorter than the leaves. Flowers minute. Capſules uſually ſolitary, bent in, and having a beak of the ſame length[i].

8. The branches are ſomewhat pubeſcent. The leaves petioled, crenulate about the edge with pellucid dots, even, not dotted on the diſk, bluntiſh, ſcarcely acute[k].

9. Erect, with the branches ſcarcely pubeſcent. Leaves remote. Flowers from the upper axils of the leaves, ſolitary or in pairs, the peduncles longer than the leaf. Stamens five, real. Nectaries five, from alternate filaments, having at the tip a black larger antherine gland, bifid at the baſe, with a ſmall yellow head[l].

10. Branching. Leaves ſeſſile, oppoſite, mucronate, even, dotted underneath. Corymbs terminating, ſubſeſſile. Calyx five-cornered. Petals bearded with white, ſmall[m].

11. This ſpecies is ſingular, and diſtinguiſhed from the reſt by the leaves being ſo cloſe together, that the whole ſtem is covered with them, by the branches being quadrangular and thicker towards the top, and by the large, ſolitary, terminating flower[n].

12. Branches filiform, erect, alternate, covered with alternate, minute leaves, like thoſe of Heath,

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[a] Juſſieu.
[b] Hort. kew.
[c] Ibid.
[d] Mill. fig.
[e] Hort. kew.
[f] Linn.
[g] Hort. kew.
[h] Linn. mant.
[i] Linn. ſuppl.
[k] Ibid.
[l] Ibid.
[m] Ibid.
[n] Ibid.

ſubſcrabous,

ſubſcabrous, ſeſſile, erect, terminating in a coloured calloſity. Calyx membranaceous, lanceolate, erect. Petals often four, obovate, twice as long as the calyx, attenuated gradually into the claws. Stamens erect, the length of the calyx[o].

13. This reſembles *D. ciliata* (n. 15.) but the petals are purple and roundiſh, with the claws three times the length of the calyx. Leaves ſubimbricate, keeled[p].

14. The leaves have a few hairs on both ſides[q].

15. Leaves acute, ciliate about the edge and along the keel. Petals oblong, with the claws ſcarcely longer than the calyx[r].

16. Leaves of the calyx ſubulate and crenate[s].

17. Leaflets of the calyx ovate, large and almoſt broader than the leaves[t].

18. Though this was placed among the *Hartogias*, yet the flowers are hermaphrodite, but the fruit is three-celled. The horns of the germ are each of them terminated by two glands[u].

The Hottentots uſe the leaves of this ſpecies dried and powdered, under the name of Bucku, to mix with the greaſe with which they anoint themſelves. It gives them ſo rank an odour, that Thunberg ſays, he ſometimes could not bear the ſmell of the men who drove his waggon[x].

19. This is a ſmall tree, ſix feet high, ſpreading and very much branched. Leaves quite entire, ſmooth. Flowers yellow, in compound racemes, anthers ſeſſile, linear, at the ſide of the nectary, converging at top, capſules ſomewhat kidney-form, each on its proper peduncle. Seeds without any aril. Native of Cochinchina[y].]

PROPAGATION AND CULTURE.

All theſe plants are propagated by cuttings, which may be planted during any of the ſummer months, in pots filled with light freſh earth, and plunged into a very moderate hot-bed, where they ſhould be ſhaded in the day time from the ſun, and frequently refreſhed with water. In about two months the cuttings will have taken root, when they ſhould be each tranſplanted into a ſmall pot, and placed in a ſhady ſituation until the plants have taken freſh root, when they may be placed among other exotic plants, in a ſheltered ſituation: theſe plants may remain abroad until the beginning of October or later, if the ſeaſon continues favourable; for they only require to be ſheltered from froſt, ſo that in a dry airy green-houſe they may be preſerved very well in winter, and in ſummer they may be expoſed to the open air with other green-houſe plants.

The ſecond ſort frequently ripens its ſeed in England; but if the ſeeds are not ſown ſoon after they are ripe, they rarely grow, or at leaſt lie a whole year in the ground.

DIOSPYROS (*of Pliny. Granum Jovis, Corn or wheat of Jupiter, or divine wheat.*)

Lin. gen. n. 1161. *Reich.* 1274. *Schreb.* 1598. *Juſſ.* 156. *Gærtn. t.* 179. Guaiacana. *Tourn.* 371. Ebenus, *Commers.*

Cl. 23. 2. Polygamia Dioecia.—Octandria Monogynia *Thunb.* &c.

Nat. order of *Bicornes.—Guaiacanæ.* Juſſieu.

GENERIC CHARACTER.

* *Hermaphrodite* female.

CAL. *Perianth* one-leafed, four-cleft, large, obtuſe, permanent.

COR. one-petalled, pitcher-ſhaped, larger, four-cleft; *diviſions* ſharp, ſpreading.

STAM. *Filaments* eight, briſtle-form, ſhort, almoſt inſerted into the receptacle. *Anthers* oblong, unproductive.

PIST. *Germ* roundiſh. *Style* ſingle, half four-cleft, permanent, longer than the ſtamens. *Stigmas* obtuſe two-cleft.

PER. *Berry* globoſe, large, eight-celled, ſitting on a very large ſpreading calyx.

SEED. Solitary, roundiſh, compreſſed, very hard.

* *Male* in a diſtinct plant.

CAL. *Perianth* one-leafed, four-cleft, ſharp, upright, ſmall.

COR. one-petalled, pitcher-ſhaped, leathery, four-cornered, four-cleft: *diviſions* roundiſh, rolled back.

STAM. *Filaments* eight, very ſhort, inſerted into the receptacle. *Anthers* double, long, ſharp: the interior ſhorter.

PIST. rudiment of a *Germ.*

OBS. *In* Dioſp. Virginiana *the ſtamens of the male are* 16, *of which* 8 *are inferior. In moſt of the ſpecies the flowers are hermaphrodite.*

ESSENTIAL CHARACTER.

HERMAPHR. *Cal.* four-cleft. *Cor.* pitcher-ſhaped, four-cleft. *Stam.* 8. *Style* four-cleft. *Berry* eight-ſeeded.

MALE. *Cal. Cor.* and *Stam.* of the other.

SPECIES.

1. Dioſpyros Lotus. *European Date-plum.*
Lin. ſpec. 1510. *Reich.* 4. 357. *hort. cliff.* 149. *Pallas. roſs.* I. 2. 20. *t.* 58. *Lour. cochinch.* 226.
Lotus africana latifolia. *Bauh. pin.* 447.
Pſeudo-Lotus. *Cam. epit.* 156.
Guaiacum patavinum. *Ger.* 1310. *Park. parad.* 570.
—latifolium. *Ger. emac.* 1495. *f.* 1. *Raii hiſt.* 1574.
Guajacana. *Bauh. hiſt.* *Park. theat.* 1522. *f.* 2.
β. L. afric. anguſtifolia. *Bauh. pin.* 447.
L. afr. altera. *Cam. epit.* 157.
Zizyphus Cappodocia. *Ger.* 1306.
G. pat. anguſtifolium. *Ger. emac.* 1495. *f.* 2. *Park. theat.* 1523. *f.* 3.
The two ſurfaces of the leaves of different colours.

2. Dioſpyros virginiana. *American Date-plum.*
Lin. ſpec. 1510. *ſyſt.* 918. *Reich.* 4. 357. *hort. cliff.* 149. *Gron. virg.* 156. *Kalm. itin.* 2. 200, 255, 437. edit. eng. 1. 127, 345. *Mill. fig. t.* 126.
Lotus virginiana. *Park. parad.* 570. *t.* 569. *f.* 6.
Loti africanæ ſimilis indica. *Bauh. pin.* 448.
Guajacana. *Cateſb. car.* 2. *t.* 76.—virgin. Piſhamin dicta. *Park. theat.* 1523. 4. *Raii hiſt.* 1918. *Pluk. alm. t.* 244. *f.* 5.
The two ſurfaces of the leaves of the ſame colour.

[3. Dioſpyros Kaki.
Lin. ſyſt. 918. *ſuppl.* 439. *Thunb. jap.* 157. *Lour. cochinch.* 226.
Ki s. Kaki. *Kæmpf. amœn.* v. 805. *t.* 806.
Peduncles three-parted.

4. Dioſpyros hirſuta.
Lin. ſyſt. 918. *ſuppl.* 440.
Branches and leaves villoſe underneath, leaves elliptic obtuſe, flowers axillary heaped ſeſſile.

5. Dioſpyros Ebenaſter.
Retz. obſ. 5. *n.* 88. *Gærtn. fruct.* 2. 478.
D. Ebenum. *Lin. ſyſt.* 918. *ſuppl.* 440.
D. decandra. *Lour. cochinch.* 227.
Hebenaſter. *Rumph. amb.* 3. 13. *t.* 6.
Leaves oval-oblong leathery, buds ſmooth.

6. Dioſpyros Ebenum.
Retz. obſ. 5. *n.* 89.
D. glaberrima. *Rottb. in nov. act. Hafn.* 2. 540. *t.* 5.
Leaves ovate-lanceolate acuminate, buds rough with hairs.

7. Dioſpyros lobata.
Lour. cochinch. 227.
Leaves ovate-lanceolate, ſmooth on both ſides; peduncles one-flowered, axillary; berries eight-lobed.

8. Dioſpyros dodecandra.
Lour. cochinch. 228.
Flowers twelve-ſtamened axillary, berries lenticular.

9. Dioſpyros tetraſperma.
Swartz prodr. 62.
Leaves membranaceous ſhining wedge-form, berries four-ſeeded.

DESCRIPTIONS, &c.

1. The ſmaller branches ſpread a little, and are yellowiſh. Leaves oval-lanceolate, large, quite entire, paler underneath, ſomewhat hoary, with the veins ſomewhat hairy. Flowers ſmall, reddiſh-white, rotate. Fruit the ſize of a cherry, yellow

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[o] Linn. mant. [p] Linn. ſyſt. & mant. [q] Linn. ſyſt.
[r] Ibid. [s] Ibid. [t] Ibid. [u] Ibid.
[x] Travels, vol. 2. p. 187. engl. edit. [y] Loureiro.

when ripe, ſweet with aſtringency, ſeſſile in the boſom of the leaves, within the calyx which is increaſed, ſomewhat cartilaginous, flatted, uſually five-cleft, ſeldom four-cleft. Theſe berries are recommended as a cure for the diarrhœa[a].

Loureiro deſcribes it, as a ſmall tree, ſix feet high, with ſpreading branches. Leaves ovate-lanceolate, quite entire, large, alternate, ſmooth, with oblique prominent ribs. Flowers pale, terminating, ſolitary, with a very large leafy calyx, four or five-parted, flat, permanent. Berry round, half an inch in diameter, yellow, lanuginoſe, one-celled, containing eight oblong-compreſſed bony ſeeds, with very little pulp.

The broad-leaved variety grows up into very large trees in the ſouthern parts of Caucaſus. It is alſo abundantly native of the woods of Hyrcania and the whole coaſt of the Caſpian[b].

Geſner was informed that it grows on the mountains about Verona; and Mr. Ray is pretty confident that he ſaw it in his way from Lerici to Lucca, not far from the latter. In the woods on the hills about Turin, plentifully about Lyons, and on the eaſtern coaſt of Africa, whence it is ſuppoſed to have firſt come to Europe.

Mr. Miller has given the figure of the American ſort, which he has confounded with this;] He ſays it is a tree of middling growth in the ſouth of Europe, upwards of thirty feet high; particularly that there is a very old tree in the botanic garden at Padua, which produces plenty of fruit every year, and that many trees have been raiſed from the ſeeds of it; but that there are none of theſe trees in England, except what had been raiſed by him, from ſeeds which were ſent to him by the Chevalier Rathgeb, his imperial majeſty's miniſter at Venice. [He does not ſeem to have known that Gerarde had planted two trees of this ſort in the Earl of Eſſex's garden at Barne Elmes, that it was alſo growing in Gerarde's own garden, and in that of Maiſter Graie an apothecary of London. Gerarde ſays, that in Engliſh it is called *Baſtard Meuynwood:* this name is now quite loſt. Parkinſon calls it Indian Date-Plum.

2. The wood of the American Date-Plum is very hard, but brittle and ſomewhat white; the branches are many, and grow ſlender to the end, covered with a very thin greeniſh bark. Leaves many, broad, green, without dent or notch on the edges, ſo like the former, that it ſeems to be the ſame[c]. Our European Lotus however, has a lighter coloured bark, on the branches inclining to yellow, on the twigs yellow and ſhining: the American has a dark brown bark on the branches, and on the twigs it is grayiſh from pubeſcence, ſo that they are ſoft to the touch, whereas the others are ſmooth. The leaves of the firſt are in general much narrower, leſs pointed, more ſhining on their upper ſurface, not pubeſcent on the under, but rather glaucous: thoſe of the ſecond are gray on the back, and pubeſcent, particularly the midrib and petiole. Fruit in form and bigneſs like a date, very firm like that fruit, and almoſt as ſweet, with a great flat thick kernel within, very like thoſe of the former, but larger[d].]

It riſes (in England) to the height of fourteen or ſixteen feet, but generally divides into many irregular trunks near the ground, ſo that it is very rare to ſee a handſome tree of this ſort. It produces plenty of fruit in England, but it never comes to perfection. [If it be eaten while it is green (as Captain Smith relates, in the diſcovery of Virginia) it draws the mouth awry by its harſh and binding taſte, but when ripe it is pleaſant[e]. This is not the caſe till it has been mellowed by the froſt; it is then very ſweet and glutinous, with a little aſtringency; and a conſiderable quantity may be eaten without inconvenience. In North America they make a palatable liquor with this fruit and malt; they alſo draw a ſpirit from it. The time of ripening is from the end of ſeptember to december. The wood of this tree is very good for joiner's tools, ſuch as planes, handles to chiſels, &c. but it ſoon rots if expoſed to the weather. It ſpreads very much, and is not eaſy to extirpate; but in the northern provinces of the American ſtates, it is often killed by froſt in hard winters[f].

In Virginia and Carolina there is great plenty of theſe trees in the woods: alſo in Penſylvania, Philadelphia, New Jerſey, &c. for the moſt part in wet places, round the water-pits. It is known there by the name of *Piſhamin* or *Perſimon.*

3. A middling ſized tree very branching. Branches and twigs alternate, round, dotted, ſmooth, tomentoſe at the ends ſpreading. Leaves alternate, petioled, ovate, acuminate, quite entire, paler underneath, ſcarce apparently villoſe, netted-nerved, ſmooth above, an inch or more in breadth, from an inch to three inches in length, ſpreading. Petioles ſemicylindric, ſubtomentoſe, half an inch long. Flowers axillary, peduncles tomentoſe, half an inch in length. Pedicels one-flowered like the peduncles. Perianth villoſe, diviſions ovate, acute, ſhorter than the corolla, which is ſubcampanulate; tube equal, diviſions ovate, obtuſe, reflex. Filaments very ſhort, inſerted into the baſe of the corolla. Anthers twin, as it were doubled, lanceolate, pale, erect, ſhorter than the corolla, approximating in a double row, villoſe, the inner ones a little ſhorter. Germ ſuperior, conic. Style ſubulate, erect, ſhorter than the calyx. Stigma briſtle-form and bifid. Fruit a ſubgloboſe pome, obſcurely four-cornered, ſmooth, when unripe green, when ripe yellow, truncate at the baſe, where the calyx remains, obtuſe with the ſtigma alſo permanent, eight-valved, eight-celled, the ſize of a middling apple, having nearly the taſte of a ſweet white plum, fleſhy. Seeds half-mooned, compreſſed at one edge, ſmooth. Some of the cells are ſometimes barren.

The fruit eaten plentifully occaſions a diarrhœa in the autumnal months. It is preſerved in the ſame manner as the fig, by ſprinkling meal or ſugar over it.

This genus ought certainly to be reduced to the claſs Octandria, for there is a ſtyle in all the flowers, though it is not always fertile; and all the flowers are hermaphrodite. Loureiro ſays, that trees of this ſpecies are ſometimes found, though ſeldom, with male flowers only.

β. There is a variety of this, in which the leaves are oblong-ovate, acute, nerved, a finger's length; the petioles channelled. Flowers alternate on the twigs, approximating, on ſuch ſhort peduncles as to be almoſt ſeſſile. Perianth green, ſpreading, permanent; diviſions bluntiſh, ſmooth. Germ marked with four or five ſtreaks: ſtyle very ſhort, four-cornered, whitiſh. Pome ovate, very obtuſe, yellow, with a ſoft aſtringent pulp like that of the orange; uſually eight-celled, ſometimes ten-celled, but very ſeldom nine-celled, the ſize of a pigeon's egg, always barren.

Native of Japan, and cultivated there[g]. Alſo in China, Cochinchina, and ſome parts of the Eaſt Indies[h]. It differs from the American ſort in its branches, and the pubeſcence on the lower ſurface of the leaves[i].

4. It differs from the foregoing in having the flowers ſeſſile and many together, and the leaves obtuſe at both ends, not acuminate. Found in Ceylon, by Thunberg[k].

5. This is a very large tree, very ſmooth in all its parts, the timber very hard. The ſmall branches have an aſh-coloured bark; thoſe which bear the leaves are blackiſh. Leaves alternate, on very ſhort petioles, quite entire, obtuſe, ſhining, often ſpotted, beneath wrinkled with ſmall veins, and as it were a little hoary. Berry ſeſſile, ovate, on the four-cleft, reflex calyx, ſeeds ſix to eight, ovate, black, ſomewhat compreſſed. It is very like the firſt ſpecies, but the leaves are more ovate, and more hoary underneath.—The wood is heavy, compact, and hard, whitiſh next the bark, but towards the middle very

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[a] Pallas. [b] Ibid. [c] Parkinſon. [d] Ibid. [e] Ibid.

[f] Kalm. [g] Thunberg. [h] Loureiro. [i] Linn. ſuppl. [k] Ibid.

black; this blackneſs gradually tinges the whole body, in the ſame manner as the reſinous part of the fir pervades the body by the decaying branches. This is the true Ebony, detected by Koenig, and confirmed by Thunberg.—Native of the vaſt woods of Ceylon[l], Amboina, Cochinchina, and the Eaſt Indies.

According to Retzius, this ſpecies is confounded with the next in the Supplement.

Loureiro deſcribes his D. decandra as a large tree, with the boughs ſomewhat ſpreading. Leaves ovate-lanceolate, quite entire, lanuginoſe, ſcattered, on ſhort petioles. Flowers white, axillary, in threes, on ſhort peduncles. Calyx four-parted, ſpreading, ſmall, permanent; with acute, thick, hairy ſegments. Corolla bell-ſhaped, with a pitcher-ſhaped tube drawn tight at the neck; border ſmall, four-cleft, obtuſe, reflex. Filaments conſtantly ten, fixed to the bottom of the corolla; with oblong ſtanding anthers. Germ roundiſh, ſuperior, with ſcarce any ſtyle, and three trifid, ſpreading ſtigmas. Berry large, ſubglobular, umbilicate, yellowiſh, pulpy, one-celled, with from ſix to eight ſeeds, which are bony, and of a compreſſed ovate form. According to Juſſieu, the fruit has from eight to twelve cells. Gærtner deſcribes the ſeeds as ſemi-ovate, wedge-form-compreſſed, ſlightly convex on one ſide, flat on the other, ſurrounded by a depreſſed line, of a rufous ferruginous colour.

The fruit has an auſterity mixed with its ſweetneſs, and a ſtrong unpleaſant ſmell; it is however eaten, and ſold in the markets in the northern provinces of Cochinchina. The wood of this tree, when of a ſufficient age, is excellent for cabinets and all elegant works, being of a compact, fine, regular grain, heavy, very white veined with black, and ſometimes black at the heart[m]. It is not however the true Ebony; which is deſcribed by Loureiro (p. 613.) under the name of *Ebenoxylum.*

6. Leaves about three inches in length, thin, flexible, dark green.—Native of Ceylon. The foregoing was obſerved in the woods near Calcutta, by Koenig[n].

7. This is a ſmall tree, eight feet high, with ſpreading branches. Leaves ſmall, quite entire, pale green, petioled, alternate. Filaments always eight, with double anthers on each. Flowers white, hermaphrodite; tube four-cornered, ventricoſe; border ſmall, four-cleft. Style ſcarcely any; ſtigma oblong, deeply four-cleft. Berry pale yellow, an inch in diameter, compreſſed, eight-celled, one-ſeeded; with a ſweetiſh-auſtere pulp, without any ſmell.

8. This is a large tree. Leaves broad lanceolate, quite entire, alternate. Flowers white; tube ſubglobular, large; with a ſhort, four-cleft border. Stamens eighteen, placed on the bottom of the tube. Berry pale, compreſſed, ſhaped like a lens, one-celled, with eight compreſſed-ovate, bony, large ſeeds; the pulp is ſweetiſh, aſtringent, eatable but not pleaſant. The wood is like that of the falſe Ebony (n. 5.), but has not the black veins. This tree is much uſed for ſupporting the Black Pepper ſhrubs. Theſe are both natives of Cochinchina[o].

9. Native of Jamaica[p].]

PROPAGATION AND CULTURE.

1. 2. Theſe are both propagated by ſeeds, which will come up very well in the open ground; but if they are ſown upon a moderate hot-bed, the plants will come up much ſooner, and make a greater progreſs; but in this caſe the ſeeds ſhould be ſown in pots or boxes of earth, and plunged into the hot-bed, becauſe the plants will not bear tranſplanting till autumn, when the leaves fall off; ſo that when the plants are up, and have made ſome progreſs, they may be inured by degrees to the open air; and in june they may be wholly expoſed, and may remain abroad until november, when it will be proper to ſet the pots under a hot-bed frame to protect them from hard froſt; which, while they are very young, may kill the tops of the plants; but they muſt have as much free air as poſſible in mild weather. The following ſpring, before the plants begin to ſhoot, they ſhould be tranſplanted into a nurſery, in a warm ſituation, where they may be trained up for two years, and then removed to the places where they are deſigned to remain. Theſe are both hardy enough to reſiſt the greateſt cold of this country, after the plants have acquired ſtrength.

[The other ſpecies are natives of the Eaſt Indies and other hot climates; they require therefore the protection of the bark-ſtove. They have not however yet been introduced into cultivation here.

DIOTOTHECA. See *Morina.*

DIPHYSA (Απο του δις και ταιν φυσαιν. *Jacqu. So called on account of the two bladders* (φυσα) *of the legume.*)

Lin. gen. Schreb. n. 1104. *Jacqu. amer.* 208. *Juſſ.* 362.

Claſſ. 17. 4. Diadelphia Decandria.

Nat: Order of *Papilionaceæ* or *Leguminoſæ.*

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, bell-ſhaped, ſlightly compreſſed, half-five-cleft: the two upper ſegments roundiſh, obtuſe, plane, ſpreading very much; the two lateral ones ovate, acute, erect, flattiſh; the loweſt lanceolate, acuminate, concave, erect, a little longer than the reſt.

COR. papilionaceous. *Standard* obovate-oblong, emarginate, plane, broad, reflex, on a claw the length of the calyx. *Wings* ſhorter than the ſtandard, oblong, obtuſe, aſcending, converging behind, diverging in front. *Keel* ſickle-ſhaped, acuminate, compreſſed, aſcending, ſhorter than the wings.

STAM. *Filaments* ten, diadelphous (ſimple and nine-cleft,) aſcending. *Anthers* ovate, ſmall.

PIST. *Germ* ſubcylindrical, pedicelled. *Style* capillary, riſing. *Stigma* ſimple, acute.

PER. *Legume* linear, compreſſed-flat, obtuſe, augmented longitudinally on each ſide by a membranaceous, very large, inflated bladder, cloſed all round; one-celled.

SEEDS ſeveral, oblong, obtuſe, compreſſed, furniſhed with a little hook.

OBS. *The ſuture is common both to valve and bladder. The legume divides into joints between the ſeed.*

ESSENTIAL CHARACTER.

Cal. half-five-cleft. *Legume* with a bladder on each ſide. *Seeds* hooked.

SPECIES.

1. Diphyſa carthaginenſis.

Jacqu. amer. t. 208. *pict. t.* 261. *f.* 59.

DESCRIPTIONS, &c.

This is a ſmall unarmed inelegant erect branching tree, ten feet in height, and approaching to the arboreſcent Mimoſa's. Leaves pinnate, ſmooth, two inches long, on the younger branches: there are uſually five leaflets on each ſide, with an odd one, though not unfrequently more or leſs; they are oblong, emarginate, ſmall, ſome alternate, others oppoſite. Common peduncles two-flowered or three-flowered, axillary, filiform, the length of the leaves. Flowers yellow, with ſcarcely any ſmell. Legumes have thin, dry, whitiſh bladders to them, whence the name. They continue long upon the tree without opening, till at length they fall in tranſverſe pieces at the joints. Seeds five or ſix, yellowiſh.

It grows every where about Carthagena in New Spain; and flowers in auguſt and ſeptember[a].]

DIPSACUS. (*Of Pliny.* Διψακος *of Dioſcorides. From* Διψαω, *ſitio;* διψακος, *is alſo the greek name for the diſeaſe which we call diabetes, and which is accompanied with great thirſt.*)

Lin. gen. n. 114. *Reich.* 120. *Schreb.* 148. *Gærtn. t.* 86. *Tourn.* 265. *Vaill. A. G.* 1722. *Juſſ* 194.

Claſſ. 4. 1. Tetrandria Monogynia.

Nat. order of *Aggregatæ.*—*Dipſaceæ* Juſſ.

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[l] Linn. Suppl.
[m] Loureiro.
[n] Retz.
[o] Loureiro.
[p] Swartz.

[a] Jacquin.

GENERIC CHARACTER.

CAL. *Perianth common* many-flowered, many-leaved: *leaflets* longer than the floſcule, looſe, permanent. *Perianth proper* ſcarce manifeſt, ſuperior.

COR. *proper univerſal* equal, one-petalled, tubular: *border* four-cleft, upright: *outer diviſion* larger, more acute.

STAM. *Filaments* four, hair-form, longer than the corolla. *Anthers* incumbent.

PIST. *Germ* inferior. *Style* filiform, length of the corolla. *Stigma* ſimple.

PER. none.

SEEDS ſolitary, columnar, crowned by the entire calycine margin.

REC. *common* conical, ſeparated by longer *chaffs*.

ESSENTIAL CHARACTER.

Cal. common many leaved; *proper* ſuperior. *Recept.* chaffy.

SPECIES.

1. Dipſacus fullonum. *Cultivated Teaſel.*
Lin. ſyſt. 143. *Mill. dict. n.* 2. *Jacqu. auſt. With.* 137. *Pluck, ic. t.* 50.
D. fullonum β. *Lin. ſpec.* 140. *Reich.* 274. *Huds. angl.* 61.
D. ſativus. *Bauh. pin.* 385. *Ger. emac.* 1167. 1. *Park. theat.* 984. 1. *Raii hiſt.* 382. *ſyn.* 192. *Dod. pempt.* 735. *Bauh. hiſt.* 3. 73. *Mor. hiſt. ſ.* 7. *t.* 36. *f.* 1.
Carduus fullonum. *Lob. ic.* 17.
Leaves ſeſſile ſerrate, involucres ſhort, horizontal, chaffs bent back.

2. Dipſacus ſylveſtris. *Wild Teaſel.*
Lin. ſyſt. 143. *Mill. dict. n. t. Jacqu. auſtr.* 5. *t.* 402. *With.* 137. *Relh. cant. n.* 110. *Curt. lond.* 3. *t.* 9. *Hall. helv. n.* 198. *Blackw. t.* 50. *Neck. gallob.* 82. *Villars dauph.* 2. 299. *Dod. pempt.* 735. *Ger.* 1005. 1. *emac.* 1167. 2. *Park. theat.* 984. 2. *Bauh. pin.* 385. 3. *Bauh. hiſt.* 3. 74. *Mor. hiſt.* 7. 36. 3. *Raii hiſt.* 382. *ſyn.* 192.
D. fullonum *Pollich. pal. n.* 137.—*α. Lin. ſpec.* 140. *Reich.* 274. *Hudſ. angl.* 61.
D. purpureus. *Fuchſ.* 225.
Labium Veneris alterum. *Camer. epit.* 432.
Leaves connate crenate, uppermoſt entire, involucres long; bending up, chaffs ſtraight.

3. Dipſacus laciniatus. *Cut-leaved Teaſel.*
Lin. ſpec. 141. *ſyſt.* 143. *Reich.* 275. *Scop. carn. n.* 142. *Pollich. pal. n.* 138. *Krock. ſileſ. n.* 201. *Jacqu. auſtr.* 5. *t.* 403. *Mill. illuſtr. Gærtn. fruct.* 2. 40. *Villars dauph.* 2. 299.
D. fol. laciniato. *Bauh. pin.* 385. *Mor.* 7. 36. 4.
D. ſylveſtris *Ger.* 1005. 2.—fol. lacin. *Bauh. hiſt.* 3. 75. *f.* 1. *Raii hiſt.* 382. *Mor.* 7. 36. 4.
Leaves connate ſinuate.

4. Dipſacus piloſus. *Small Teaſel.*
Lin. ſpec. 141. *ſyſt.* 143. *Reich.* 275. *hort. upſ.* 25. *cliff.* 30. *Hudſ. angl.* 61. *With.* 138. *Curt. lond.* 1. 10. *abr. t.* 14. *Relh. cant. n.* 111. *Lightf. ſcot.* 113. *Hall. helv. n.* 199. *Pollich. pal. n.* 139. *Leers herborn. n.* 103. *Jacqu. auſtr.* 3. *t.* 248. *Krock. ſileſ. n.* 202. *Blackw. t.* 124. 1, 2. *Villars dauph.* 2. 300.
D. minor. *Neck. gallob.* 81.—*ſ. Virga paſtoris. Ger. emac.* 1168. 3. *Raii hiſt.* 382. *ſyn.* 192.
D. ſylveſtris capitulo minore, vel Virga paſtoris minor. *Bauh. pin.* 385. *Mor.* 7. 36. 5.
D. tertius. *Dod. pempt.* 735. 3.
Virga paſtoris. *Camer. epit.* 433. *Park. theat.* 984. 4.—vulgaris. *Bauh. hiſt.* 3. 75. 2.
Leaves petioled, with little appendages.

DESCRIPTIONS, &c.

Biennial, tall, herbaceous plants, prickly or rough, terminated by rough heads of flowers. The leaves ſometimes connate at the baſe, and forming a baſin containing rain.]

1. This is cultivated in great quantities in the weſt of England, for raiſing the nap upon woollen cloths, [by means of the crooked awns or chaffs upon the heads; which in the wild ſort are ſtraight, or at leaſt not hooked. For this purpoſe they are fixed round the circumference of a large broad wheel, which is made to turn round, and the cloth is held againſt them. Theſe heads are collected in auguſt[a]. Parkinſon calls it Fullers Thiſtle; and Gerarde, Tame or Garden Teaſel. In German it is named *Kardendiſtel, Weberdiſtel, Weberkarten, Karten, Kartetſchendiſtel, Walkerdiſtel, Tuchmacherdiſtel,* &c. In Dutch, *Vollers Kaarden, Kaarden* or *Kaardenkruid.* In Daniſh, *Kardetidſel, Kradſetidſel.* In Swediſh, *Kardor, Kardtiſtel.* In French, *Chardon à foullon, à carder, à bonnetier; Cardere à foullon, Cardiere, Cuve de Venus, bain de notre Dame.* In Italian, *Diſſaco, Cardo da cardare, Labbro di Venere.* In Spaniſh, *Cardencha, Cardo peinadór.* In Portugueze, *Cardo penteador.* In Ruſſian, *Sukonnaja, Tſchotka.*

2. *Root* biennial, ſimple, with large fibres. *Stem* from three to ſix feet high, branched, round, ſtriated, hollow, ſpinous, but the ſpines few near the baſe, very numerous near the heads, long and ſharp. *Root-leaves* of the firſt year's plant ſpread on the ground in a circular form, ovate-oblong, bluntiſh, notched, wrinkled, and rough with ſpines thinly ſcattered over the leaf: *ſtem leaves,* at leaſt the lowermoſt, leſs wrinkled, united at the baſe ſo as to form a large cavity containing water after rain, (hence the names of Dipſacus and Labrum Veneris); they are ovate-acute, notched, thinly beſet with ſpines on the edge and midrib: *uppermoſt* ſlightly united at the baſe, narrower, entire, and almoſt free from ſpines. *Heads* numerous, ſolitary, upright, ovate-oblong, ſomewhat pointed at top. *Flowers* blue-purple, firſt breaking forth about the middle of the head. Common perianth or involucre, compoſed of linear rigid leaves, beſet with ſmall ſpines, bending upwards, the length of the head, or longer, unequal. Calyx very minute, green, and edged with hairs. Corolla, tube whitiſh, and appearing ſlightly villoſe if magnified. Filaments ſtraight, inſerted into the tube of the corolla: anthers oblong, violet-coloured. Germ four-cornered, whitiſh, grooved: ſtyle a little longer than the corolla: ſtigma channelled and bent a little in. Chaffs of the receptacle the length of the ſtamens, rigid, bearded, the uppermoſt longeſt, at bottom hollow and ſomewhat triangular; the beard or awn running out to a long, ſtraight and ſomewhat hiſpid point[b]. Some of the lower chaffs are greatly bowed downwards, but not hooked at the point[c]. Native of moſt parts of Europe, on the edges of paſtures, in uncultivated places and by road ſides; flowering from june or july to ſeptember.

The water contained in the baſin formed by the leaves is ſaid to cure warts on the hands, and to ſerve as a beauty waſh for the face; hence Ray conjectures that this plant might have received its name of *Labrum Veneris.* It is alſo ſuppoſed to be good for the eyes.

Cattle in general, even the aſs, appear to avoid it. A ſmall moth, earwigs and other inſects, take refuge in the head[d].

Mr. Woodward ſays that he has not found it north of Nottinghamſhire and Derbyſhire. A friend however aſſures me that he remembers to have ſeen it about Newcaſtle, and Mr. Lightfoot mentions its being wild in Scotland.

According to Linneus, the cultivated Teaſel is only a variety of the wild one. They certainly differ ſo little, that it was not neceſſary to deſcribe both. Haller, Jacquin and moſt modern authors are diſpoſed to conſider them as diſtinct. Mr. Miller, having cultivated both forty years, heſitates not to be of this opinion.

3. *Root* biennial, long, branching. *Stem* three feet high, upright, angular, prickly, branched. Leaves pinnatifid, laciniate or ſinuate, bright green, ſmooth above, pubeſcent beneath, having ſhort prickles along the nerve, and being ciliate on the edge. Heads ovate, obtuſe, terminating the ſtem and branches; with an involucre at the baſe conſiſting of ſtiff prickly leaves ſpreading out like a ſtar. Chaffs lanceolate, ſtraight, ending in a ſtiff prickle.

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[a] Withering. [b] Curtis. [c] Stokes in Withering. [d] Curtis.

Flowers whitiſh. Anthers reddiſh[e]. It differs from the common Teaſel, not only in the leaves being cut ſo deeply, but in the prickles being weaker, and having lateral flowers, riſing higher than thoſe in the middle[f]. The Goldfinch is fond of the ſeeds; as it is alſo of our common ſort.—Native of Germany, France, Alſace, Auſtria, Carniola.—Cultivated 1683, by Mr. James Sutherland[g].

4. It differs from its congeners in having a fragile ſtem, from two feet high to ſix. Sharp with ſhort prickles pointing upwards, angular and grooved. Leaves with little appendages at the baſe; but theſe are ſometimes wanting; and the upper leaves are nearly entire, ſlightly hairy on both ſides, and with ſhort prickles along the midrib underneath.—Scales of the receptacle longer than the corollas, ciliate, in hemiſpherical heads. Leaves of the common calyx or involucre linear-lanceolate, ending in a ſharp point, ſhorter than the head; theſe and the ſcales edged with long ſoft hairs. Corollas white, ſometimes with a purple tinge; anthers dark purple: ſeeds ovate-quadrangular, crowned with the calyx. Stigma ſometimes ſimple, but moſt frequently bifid, with the lower lobe ſhorter than the upper; as it is likewiſe in the common ſort: ſometimes it is ſlightly cloven into three parts. The heads of flowers hang down during the time of flowering, but afterwards become upright[h].

This plant is called *Shepherd's-rod* and *Shepherd's-ſtaff*. It flowers in july, and the ſeeds are ripe in ſeptember. They are eaten by ſmall birds; and the flowers are frequented by moths in great numbers, after ſun-ſet. It is the handſomeſt ſpecies of the genus, and very diſtinct from the three others, which are nearly allied. It is native of France, Germany, Switzerland, and Auſtria. With us, but not common in moiſt and watery places, by brooks and damp hedges and ditches: near London Mr. Curtis has found it only between Deptford and Lewiſham; Johnſon found it in great plenty at Edgecombe (Adſcombe) by Croydon in Surry; it occurs near Guildford, Godalmin, &c. in the ſame county.—It alſo grows in Beckenham church-yard, &c. in Kent, and in ſeveral other places in that county, as about Chiſlehurſt, Foot's-Cray, Farnborough, &c. about Finchley in Middleſex; Fulham between the Biſhop's palace and the field; More-hall, &c. near Harefield; it occurs in ſeveral places near Cambridge; near Thame park in Oxfordſhire; alſo at Lilleſhall Abbey in Shropſhire; Eveſham in Worceſterſhire. Gerarde remarked it in the way from Braintree to Hedingham, and from Dunmow to London.—Garanton Park and Hollinghall wood in Leiceſterſhire. Pleaſly forges, in Nottinghamſhire, and in Scotland.]

PROPAGATION AND CULTURE.

1. This plant is propagated by ſowing the ſeeds in march, upon a ſoil that has been well ploughed: about one peck of this ſeed will ſow an acre; for the plants ſhould have room to grow, otherwiſe the heads will not be ſo large, nor in ſo great quantity. When the plants are come up, hoe them in the ſame manner as is practiſed for Turneps, cutting down all the weeds, and ſingling out the plants to about ſix or eight inches diſtance; and as the plants advance, and the weeds begin to grow again, hoe them a ſecond time, cutting out the plants to a wider diſtance, for they ſhould be, at laſt, left at leaſt a foot aſunder: and you ſhould be particularly careful to clear them from weeds, eſpecially the firſt ſummer; for when the plants have ſpread ſo as to cover the ſurface of the ground, the weeds will not ſo readily grow between them. The ſecond year after ſowing, the plants will ſhoot up ſtalks with heads, which will be fit to cut about the beginning of auguſt; at which time they ſhould be cut, and tied up in bunches, ſetting them in the ſun if the weather be fair; but if not, they muſt be ſet in rooms to dry. The common produce is about an hundred and ſixty bundles or ſtaves upon an acre, which they ſell for about one ſhilling a ſtave. Some people ſow Caraway and other ſeeds among their Teaſels, but this is not a good method, for the one ſpoils the other; nor can you ſo eaſily clear them from weeds as when alone[i].

[This however is ſtill the common practice in Eſſex, where the Teaſel is chiefly cultivated, on account of the neighbouring manufactures of ordinary cloth and baize, in which it is uſed for raiſing the nap.

Old paſture land, the ſoil of which is a ſtrong clayey loom, is beſt adopted to the culture of Teaſel. The method of managing the land for their compound crop, has been already given under the article Carum or Caraway. We have only to add therefore, for the inſtruction of the hoers, that the firſt appearance of Teaſel is much like that of a lettuce; that the heads being ready about the middle of ſeptember the ſecond year, are to be cut as ſoon as they begin to turn brown, with a ſtalk a foot long, and tied up in bundles or bunches, twenty-five in each; twenty-four of theſe bunches are fixed on a ſmall ſtick, and called a row, two hundred and forty of which make a load in bulk, equal to a ton of hay from the meadow.

The work of cutting and bunching the Teaſel can only be done by thoſe, who are well acquainted with it. The crop muſt be looked over, and the heads cut at ſeveral times as they ripen. The produce is ſometimes a load on an acre, the average price of which is twelve pounds. But often there is not more than one fourth of a load[k].

Dipsacus. See *Scabioſa*.

DIPTĔRȲX. (Διπτερυξ, *the ſame with* Διπτερος, *two-winged. The calyx of the flower having two wings.)*
Lin. gen. Schreb. n. 1161. Coumarouna *Aubl. t.* 296. *Juſſ.* 364. *Taralea Aubl. t.* 298. *Juſſ.* 350.
Claſſ. 17. 4. Diadelphia Decandria.
Nat. order of *Papilionaceæ* or *Leguminoſæ*.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, turbinate: two upper ſegments wing-ſhaped, oblong, concave, ſpreading; the third lower, ſmall, entire or three-toothed.

Cor. papilionaceous. *Standard* longer, obovate, bent in at the ſides, erect. *Wings* two, oblong, ſhorter than the ſtandard. *Keel* ſhorter, two-petalled.

Stam. *Filaments* eight to ten united into a cylinder, cloven at top. *Anthers* ſmall, roundiſh.

Pist. *Germ* pedicelled, oblong. *Style* awl-ſhaped, aſcending. *Stigma* acute.

Per. *Legume* large, ovate, compreſſed, thick, one-celled.

Seed ſingle, ovate.

Obs. Coumarouna *Aubl. has eight ſtamens, and the lower lip of the calyx entire.* Taralea *Aubl. has ten ſtamens, and the lower lip of the calyx three-toothed.*

ESSENTIAL CHARACTER.

Cal. two upper ſegments winged. *Legume* ovate, compreſſed, one-ſeeded.

SPECIES.

1. Dipteryx odorata. *Coumarouna. Aubl. pl. gui. p.* 741. *t.* 296. *Leaves alternate.*
2. Dipteryx oppoſitifolia. *Taralea. Aubl. pl. gui. p.* 745. *t.* 298. *Leaves oppoſite.*

DESCRIPTIONS, &c.

1. This is a large tree, ſixty feet high, very much branched at top. The leaves are large, alternate, and pinnate: the leaflets perfectly entire, two or three on each ſide, affixed alternately on the midrib. The flowers are borne in racemes, which are axillary and terminal. Their colour is purple, daſhed with violet. The almonds or fruits are fragrant, and are put by the Creoles into cheſts, in order to drive away inſects, as well as for the ſake of their ſmell. It grows in the large foreſts of Guiana.

2. This, like the former, is a tall tree; and very branchy at top. The leaves are oppoſite, and pinnate: the leaflets large, ovate, ſharp, ſtrong, and perfectly entire. The flowers are panicled, ax-

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[e] Scopoli, Pollich, Krocker. [f] Villars. [g] Hort. kew.

[h] Curtis, Woodw. mſs. With. Pollich, Leers, Krocker.

[i] The above is chiefly from Mortimer. [k] Sewel in Young's Ann. vol. 21. p. 53—55.

illary, and terminal. When blown, their fragrance is very diffuſive. It grows in the woods of Cayenne.]

DIRCA (Διρκαια *is the name of a plant in Dioſcorides, otherwiſe* Κιρκαια; *but of the derivation of Dirca I know nothing.*)

Lin. gen. n. 486. *Reich.* 527. *Schreb.* 665. *Juſſ.* 77.

Cl. 8. 1. Octandria Monogynia.

Nat. Order of *Vepreculæ.*——*Thymelææ.* Juſſ.

GENERIC CHARACTER.

Cal. none.

Cor. one-petalled, club-ſhaped; *Tube* bellying above. *Border* obſcure, with unequal margin.

Stam. *Filaments* eight, capillary, inſerted into the middle of the tube, longer than the corolla. *Anthers* roundiſh, upright.

Pist. *Germ* ovate, with oblique tip. *Style* filiform, longer than the ſtamens, crooked at the tip. *Stigma* ſimple.

Per. *Berry* one-celled.

Seed ſingle.

ESSENTIAL CHARACTER.

Cal. none. *Cor.* tubulous with an obſcure border. *Stam.* longer than the tube. *Berry* one-ſeeded.

SPECIES.

1. Dirca paluſtris. *Marſh Leather-wood.*
Lin. ſpec. 512. *Reich.* 2. 194. *amœn.* 3. 12. *t.* 1. *f.* 7. *Kalm. itin.* 3. 88. *edit. engl.* 2. 148. *Duham. arb.* 1. *t.* 212. *Gron. virg.* 155. (Thymelæa.)

DESCRIPTION, &c.

Height five or ſix feet, but in Europe rarely more than half ſo high. It ſends out many jointed branches near the root. Leaves oval, pale yellowiſh, and ſmooth. The flowers come out from the ſide of the branches, two or three upon each peduncle; they are of a greeniſh white colour, and appear early in the ſpring, when the leaves begin to ſhoot.

[It is a little ſhrub growing on hills towards ſwamps and marſhes in North America. The bark is very tough, as is alſo the ſhrub itſelf, inſomuch that the branches cannot eaſily be ſeparated without cutting. The twigs are uſed for rods, and the bark for ropes, baſkets, &c. for which it is very fit, being equal in ſtrength and toughneſs to the bark of the lime tree. The French in Canada call it *Bois de Plomb* or Leaden-wood[a].

Introduced in 1750, by Archibald Duke of Argyle. It flowers in march and april[b].]

PROPAGATION AND CULTURE.

This ſhrub is very difficult to propagate in Europe, for as it does not produce ſeeds here, it can only be increaſed by layers or cuttings, and theſe are generally two years before they put out roots: and as it grows naturally in very moiſt places, it is with difficulty preſerved in gardens, unleſs it be planted in wet ground: it is ſeldom injured by cold.

[DISA.

Lin. ſuppl. 59. *n.* 1423. *Schreb.* 1375. *Berg. cap.* 348. *t.* 4. *Juſſ.* 65. *Lamarck encycl.* 2. 290.

Claſſ. 20. 1. Gynandria Diandria.

Nat. Order of *Orchideæ.*

GENERIC CHARACTER.

Cal. *Spathe* one-valved, acuminate, oblong, gaping longitudinally on one ſide.

Cor. *Petals* three, ovate, ſpreading, large, nearly equal: the *upper* one unequal, ſomewhat horned obtuſely at the baſe behind.

Stam. *Filament* ſubulate. *Anthers* two, connected into a lanceolate form, a little ſhorter than the corolla, ſubulate at the baſe, gaping, mounted on the ſtyle.—*Dorſal petal of the ſtamens* two-parted, ſhorter than the ſtamens. *Diviſions* oblong, obtuſe, converging.

Pist. *Germ* inferior, length of the ſpathe. *Style* tongue-ſhaped, ſhort, hollowed at the baſe, two-horned backwards.

Per. *Capſule* oblong, three-valved.

Seeds numerous minute.

ESSENTIAL CHARACTER.

Spathe one-valved. *Pet.* 3; the third leſs; two-parted, gibbous at the baſe.

SPECIES.

1. Diſa grandiflora.
Lin. ſyſt. 817. *ſuppl.* 406.
D. uniflora. *Berg. cap.* 348. *t.* 4. *f.* 7.
Orchis africana, fl. ſingulari herbaceo. *Raii ſuppl.* 586.
Horn ſhorter than the petals, with about two flowers on the ſtem.

2. Diſa racemoſa.
Lin. ſyſt. 817. *ſuppl.* 406.
Horn ſhorter than the petals, flowers in racemes.

3. Diſa longicornis.
Lin. ſyſt. 817. *ſuppl.* 406.
Horn longer than the petals, ſcape one-flowered.

4. Diſa maculata.
Lin. ſyſt. 817. *ſuppl.* 407.
Horn conical very ſhort, ſcape one-flowered.

DESCRIPTIONS, &c.

1. Stem a foot high, erect, quite ſimple, even. Leaves ſhorter than the ſtem; thoſe next the root lanceolate-linear; thoſe on the ſtem ſheathing, alternate, three in number, the diſk ſhorter than the ſheath, acuminate at the end. Flower terminating, peduncled, inclined; ſometimes two, and then the ſecond comes out on a longer peduncle from the ſpathe of the former. This flower is very conſpicuous and beautiful.

2. Of this we have no deſcription.

3. Flower blue: beautiful and ſingular in its form.

4. Root-leaves oblong. Stem and ſheath ſpotted with red. Flower blue.

Theſe are all natives of the Cape. The firſt was found there by Bergius; and that, with all the reſt, by Thunberg[a]; from whom we expect farther information on this genus.

DISANDRA.

Lin. gen. Reich. n. 497. *Schreb.* 627. *Juſſ.* 99.

Cl. 7. 1. Heptandria Monogynia.

Nat. Order of *Pediculares.* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, from five to eight-parted: *diviſions* ſtraightiſh; permanent.

Cor. one-petalled, wheel-ſhaped: *Tube* very ſhort. *Border* five-parted; *diviſions ovate.*

Stam. *Filaments* from five to eight, briſtle-form, from erect becoming patulous, ſhorter than the corolla. *Anthers* ſagittate.

Pist. *Germ* ovate. *Style* filiform, length of the ſtamens. *Stigma* ſimple.

Per. *Capſule* ovate, length of the calyx, two-celled.

Seeds ſeveral, ovate.

Obs. *The flower varies very much as to number.*

ESSENTIAL CHARACTER.

Cal. ſeven-leaved. *Cor.* ſeven-parted, flat. *Capſ.* two-celled.

SPECIES.

1. Diſandra proſtrata. *Trailing Diſandra.*
Lin. ſyſt. 352. *Reich.* 2. 136. *ſuppl.* 32. 214. *Curtis magaz. t.* 218.
Sibthorpia peregrina. *Lin. ſpec.* 880. *amœn.* 3. 22. *Pluk phyt. t.* 257. *f.* 5.
Leaves reniform crenate, peduncles in pairs.

2. Diſandra africana.
Lin. ſyſt. Reich. 137.
S. africana. *Lin. ſpec.* 880. *amœn.* 3. 22. *Shaw afr. f.* 149. (Chryſoſplenii fol. planta, &c.)
Leaves orbiculate entire crenate, peduncles ſolitary.

DESCRIPTIONS, &c.

1. Stems from a foot to two feet in height, proſtrate, round, pubeſcent. Leaves alternate, petioled, with about thirty notches, pubeſcent. Peduncles axillary, uſually two together, but ſometimes one or three, erect, filiform, one-flowered, higher than the petioles. Corollas yellow[a]. The foliage greatly reſembles that of ground-ivy, and the branches trail

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[a] Kalm.

[b] Hort. kew,

[a] Lin. ſuppl.

[a] Lin. ſyſt.

on the ground ſomewhat in the ſame manner to the length of ſeveral feet.—It varies extremely in the number of ſtamens, and in the diviſions of the calyx and corolla[b]. Seven is thought to be the moſt prevalent number of ſtamens, and five the moſt natural[c]. Native of Madeira, and introduced about 1771. It flowers moſt part of the ſummer[d].

2. It is doubtful whether this be a diſtinct ſpecies. The parts of the flower are very inconſtant in their number; ſeven is the moſt frequent; five the moſt natural, but moſt ſeldom ſeen, eſpecially in the cultivated plant. Native of Africa[e].

PROPAGATION AND CULTURE.

1. It grows readily from cuttings. In the winter it muſt be kept in the greenhouſe, in the ſummer it will bear the open air. It ſhould be planted in rich earth, and plentifully watered in dry weather. It appears beſt in a pot placed on a pedeſtal, or in ſome elevated ſituation, where its branches may hang careleſsly down[f].

Disermas. See *Salvia*.

Disparago. See *Stoebe*.

Distaff-Thistle. See *Atractylis*.

Ditoca. See *Mniarum*.

Ditrichum. See *Didymodon*.

Dittander. See *Lepidium*.]

Dittany of Crete. See *Origanum*.

Dittany, White. See *Dictamnus*.

[Diuretica. See *Arnica*.]

Dock. See *Rumex*.

DODARTIA. (*So named by Tournefort, from M. Dodart, member of the Academy of Sciences at Paris.*)

Lin. gen. n. 780. *Reich.* 843. *Schreb.* 1047. *Tourn.* 478. *Gærtn. t.* 53. *Juſſ.* 119.

Claſſ. 14. 2. Didynamia Angioſpermia.

Nat. order of *Perſonatæ—Scrophulariæ* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, bell form, five-toothed, with ten corners, tubular, nearly equal, flat, permanent.

Cor. One-petalled, ringent. *Tube* cylindric, bent downwards, much longer than the calyx. *Upper lip* ſmall, emarginate, aſcending. *Lower lip* ſpreading, wider, three-cleft, twice longer, obtuſe: *middle diviſion* narrower.

Stam. *Filaments* four, aſcending towards the upper lip, and ſhorter than it. *Anthers* ſmall, roundiſh, twin.

Pist. *Germ* roundiſh. *Style* ſubulate, length of the corolla. *Stigma* compreſſed, oblong, obtuſe, two-cleft, the lamellas converging.

Peri. *Capſule* globoſe, two-celled.

Seeds numerous, very ſmall. *Receptacle* convex, growing to the diſſepiment.

ESSENTIAL CHARACTER.

Cal. five-toothed. *Cor.* lower lip twice as long as the upper. *Capſ.* two-celled, globular.

SPECIES.

1. Dodartia orientalis. *Oriental Dodartia.*
Lin. ſpec. 883. *ſyſt.* 574. *Reich.* 3. 186. *hort. cliff.* 326. *Mill. fig. t.* 127. *Tournef. itin.* 3. *t.* 208. *Gærtn. fruct.* 245.
Leaves linear quite entire ſmooth.

[2. Dodartia indica.
Lin. ſpec. 883. *Reich.* 3. 186.
Leaves ovate ſerrate villoſe.]

DESCRIPTIONS, &c.

1. It has a perennial root, which creeps far under the ſurface, and ſends out new ſtalks at a great diſtance from the parent plant; theſe ſtalks are firm, a little compreſſed, and grow a foot and half high, ſending out ſeveral ſide branches. Leaves long, narrow, fleſhy, oppoſite, of a deep green colour; thoſe on the lower part of the ſtalk are ſhorter and broader than thoſe above; thoſe on the upper part of the ſtalk are entire; at theſe joints the flowers come out ſingly on each ſide the ſtalk, ſitting cloſe to it; they are near an inch long. The flower is of a deep purple colour, and appears in july, but rarely produces ſeeds in England.

[The elegant Tournefort firſt diſcovered this plant near Corvirap in Armenia, not far from the foot of mount Ararat, on the 9th of auguſt, 1700; and named it after Monſ. Dodart, Phyſician to the Princeſs Dowager of Conti, one of the moſt learned men of that time, as he ſays, and no leſs eſteemed for his modeſty, than the purity of his manners. He thus deſcribes it. Stem a foot and half high, ſtraight, firm, ſmooth, woody, bright green, branched from the bottom and forming a round buſh. Leaves an inch or fifteen lines in length, two or three lines wide, a little fleſhy, toothed on the edge, eſpecially the lower ones, for they are ſmaller towards the top of the plant and leſs toothed. Flowers axillary, towards the end of the branches, of a deep violet colour, eight or nine lines in length, tube a line in diameter, ending in two lips, the upper ſhaped like the bowl of a ſpoon, a line and half in length, cut into two pointed ſegments, the lower three lines long, rather rounded, but cut into three parts, of which the middle one is the ſmalleſt and moſt pointed; this lip is downy and towards the middle has ſome white hairs.

Linneus obſerves, that the flowers are alternate, racemed, and ſubſeſſile[a]. Capſule membranaceous, thin, ſcored on each ſide, ſeldom opening ſpontaneouſly. Seeds angular, ſmooth, cinereous-brown[b]. Cultivated 1739, by Mr. Miller[c].

2. Stems roundiſh, villoſe, ſomewhat branching. Leaves petioled, obtuſely ſerrate. Raceme terminating with ſmall leaves. Flowers oppoſite, pointing one way, ſubſeſſile. Calyx obtuſe, villoſe. Corolla yellow, with the outer lip ſtraight and ſhort.—Native of India[d].]

PROPAGATION AND CULTURE.

1. It propagates very faſt by its creeping roots, ſo that when it is once eſtabliſhed in a garden, it will multiply faſt enough; it loves a light dry ſoil, and may be tranſplanted either in autumn when the ſtalks decay, or in the ſpring before the new ſtalks ariſe.

[Dodartia Linaria. See *Antirrhinum bellidifolium.*

Dodder. See *Cuſcuta.*

DODECAS. (*So called from the number twelve prevailing in the ſtamens.*)

Lin. ſuppl. 36. *n.* 1392. *Gen. Schreb. n.* 804. *Juſſ.* 323.

Claſſ. 11. 1. Dodecandria Monogynia.

Nat. order of *Calycanthemæ. Myrti* Juſſ. perhaps more allied to the *Salicariæ?*

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, turbinate, permanent, half-four-cleft, ſuperior; *diviſions* ovate, ſpreading.

Cor. *Petals* roundiſh, ſeſſile, inſerted into the calyx.

Stam. *Filaments* twelve, capillary, ſhorter than the calyx, inſerted into the receptacle? *Anthers* oblong.

Pist. *Germ* half-ſuperior. *Style* filiform, longer than the ſtamens. *Stigma* ſimple.

Per. *Capſule* ovate, one-celled, inferior, growing to a patulous calyx, within which the apex is naked and four-valved.

Seeds numerous, oblong, minute.

Obs. *Habit of* Lycium *or* Juſſieua.

ESSENTIAL CHARACTER.

Cor. five-petalled. *Cal.* half-four-cleft, bearing the corolla, ſuperior. *Capſ.* one-celled, connate with the calyx.

SPECIES.

1. Dodecas ſurinamenſis.
Lin. ſyſt. 445. *ſuppl.* 245.

DESCRIPTIONS, &c.

A ſhrub, having the appearance of *Lycium barbarum*, even, ſomewhat four-cornered; the branches oppoſite, ſhort. *Leaves* oppoſite, obovate-oblong or wedge-ſhaped, ſubpetioled, even, obtuſe, quite entire. *Stipules* none. *Peduncles* axillary, one-flowered, ſhort; ſolitary, the length of the calyx. *Bractes* in pairs, minute, under the calyx. *Calyx* before it unfolds four-cornered, four-valved, turbinate at bottom, columnar. *Petals* inſerted into the calyx at the diviſions. *Stamens* inſerted into the receptacle next the germ, not into the calyx. Native of Surinam. C. G. Dalberg[a].

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[b] Curtis.
[c] Murray.
[d] Hort. kew.
[e] Linn. ſyſt.
[f] Curtis.

[a] Syſt.
[b] Gærtner.
[c] Hort. kew.
[d] Linn. ſpec.

DODECATHEON. (*From* δωδεκα, *twelve, and* θεοι *gods.* Dodecatheos *is the name of a plant in Pliny.*)
Lin. gen. n. 200. *Reich.* 213. *Schreb.* 281. *Juſſ.* 97. *Gærtn.* 50. Meadia. *Cateſb. car. Ehret. Mill. dict. & fig. t.* 174.
Cl. 5. 1. Pentandria Monogynia.
Nat. Order of *Preciæ.*——Lyſimachiæ, *Juſſ.*

GENERIC CHARACTER.

Cal. *Involucre* many-leaved, many-flowered, very ſmall. *Perianth* one-leafed, half five-cleft, permanent: *diviſions* reflex, finally longer, permanent.

Cor. One-petalled, five-parted. *Tube* ſhorter than the calyx. (naked at the throat) *Border* reflex: *diviſions* very long, lanceolate.

Stam. *Filaments* five, very ſhort, obtuſe, ſeated on the tube. *Anthers* ſagittate, converging into a beak.

Pist. *Germ* conic. *Style* filiform, longer than the ſtamens. *Stigma* obtuſe.

Per. *Capſule* oblong, one-celled, gaping at the tip. (ſubcylindric, opening into five parts. *G.*)

Seeds very many, ſmall. *Receptacle* free, ſmall.

ESSENTIAL CHARACTER.

Cor. rotate, reflex. *Stam.* placed on the tube. *Capſ.* one-celled, oblong.

SPECIES.

1. Dodecatheon Meadia. *Virginian Cowſlip* or *Meadia.* *Lin. ſpec.* 207. *Reich.* 1. 415. *amœn.* 3. 16. *Curt. magaz. t.* 12.
   Meadia. *Cateſb. car.* 3. *t.* 1. *Trew. ehret. t.* 12. *Mill. dict. & fig. t.* 174. *Gærtn. fruct.* 233.
   Auricula urſi virginiana, &c. *Pluk. alm. t.* 79. *f.* 6.

DESCRIPTION, &c.

Meadia has a yellow perennial root, from which come out in the ſpring ſeveral long ſmooth leaves, near ſix inches long, and two and a half broad; at firſt ſtanding erect, but afterwards ſpreading on the ground, eſpecially if it be much expoſed to the ſun: from among theſe leaves ariſe two, three, or four flower-ſtalks, in proportion to the ſtrength of the roots, which riſe eight or nine inches high; they are ſmooth, naked, and terminated by an umbel of flowers, which are purple, inclining to a peach-bloſſom colour. Theſe appear at the end of april or the beginning of may; and the ſeeds ripen in july; ſoon after which the ſtalks and leaves decay, and the roots remain inactive till the following ſpring. [Each flower has a long ſlender peduncle, which is recurved, ſo that the flowers hang down[b]. The capſule is of the ſubſtance of paper, ruſeſcent. Receptacle columnar, pedicelled, from round acuminate, with excavations on it. Seeds ovate-rounded, turgidly lenticular, ſomewhat wrinkled, yellow-ruſeſcent. Umbilicus in the middle of the belly, obſcure[c].]

It is a native of Virginia, and other parts of North America, whence it was ſent by Baniſter, to Biſhop Compton, in whoſe curious garden at Fulham Mr. Miller firſt ſaw it growing in the year 1709; after which this plant was loſt for ſeveral years in England, till it was again obtained from America [by Mr. Cateſby, and cultivated in 1744, by Peter Collinſon, Eſq.[d]] ſince which it has been propagated in great plenty. Mr. Mark Cateſby named it Meadia, in honour of Dr. Richard Mead, who was a generous encourager of every branch of ſcience, though no great botaniſt himſelf. [If we look over the liſt of thoſe who have had plants named from them, we ſhall find many of very inferior note; and ſeveral who could produce no title to that honour, except their patronage of learning and learned men. Would not Linneus therefore have done better to leave the name of this illuſtrious phyſician, and elegant ſcholar, as a generic term to this elegant plant; than to ſelect a whimſical name from Pliny, and to affix it to an american plant, which Pliny could not ever have ſeen? Meadia however remains as the ſpecific name, and the common appellation in Engliſh.]

PROPAGATION AND CULTURE.

This plant is propagated by offſets, which the roots put out pretty freely when they are in a looſe moiſt ſoil and a ſhady ſituation; the beſt time to remove the roots, and take away the offſets, is in auguſt, after the leaves and ſtalks are decayed, that they may be fixed well in their new ſituation before the froſt comes on. It may alſo be propagated by ſeeds, which the plants generally produce in plenty; theſe ſhould be ſown in the autumn ſoon after they are ripe, either in a ſhady moiſt border, or in pots, which ſhould be placed in the ſhade; in the ſpring the plants will come up, and muſt then be kept clean from weeds, and if the ſeaſon proves dry, they muſt be frequently refreſhed with water; nor ſhould they be expoſed to the ſun, for while the plants are young, they are very impatient of heat, ſo that I have known great numbers of them deſtroyed in two or three days, which were growing to the full ſun. Theſe young plants ſhould not be tranſplanted till their leaves are decayed, then they may be carefully taken up and planted in a ſhady border, where the ſoil is looſe and moiſt, at about eight inches diſtance from each other, which will be room enough for them to grow one year, by which time they will be ſtrong enough to produce flowers, and may then be tranſplanted into ſome ſhady borders in the flower-garden, where they will appear very ornamental during the continuance of their flowers.

At the firſt many ſuppoſed this plant to be tender, and planted it in warm ſituations and nurſed it too much, whereby the plants were often killed; but by experience it is found to be ſo hardy, as not to be hurt by the ſevereſt cold of this country; but it will not thrive in a very dry ſoil, or where it is greatly expoſed to the ſun.

DODONÆA. (*So named in honour of Rembert Dodonæus or Dodoens, profeſſor of medicine, a famous botaniſt of the* 16*th century: author of* frugum hiſtoria, 1552; *and* Pemptades, 1583.)
Lin. gen. n. 855. *Reich.* 520. *Schreb.* 654. *Gærtn. t.* 111. *Jacqu. amer.* 109. *Juſſ.* 375.
Cl. 8. 1. Octandria Monogynia.
Nat. Order of *Dumoſæ?*——*Terebintaceæ* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* four-leaved, flat: *leaflets* ovate, obtuſe, concave, deciduous.

Cor. none.

Stam. *Filaments* eight, very ſhort. *Anthers* oblong, bowed, converging, length of the calyx.

Pist. *Germ* three-ſided, length of the calyx. *Style* cylindric, three-furrowed, upright. *Stigma* ſlightly three-cleft, a little acute.

Per. *Capſule* three-furrowed, inflated, three-celled: with large membranaceous corners.

Seed in couples, roundiſh.

Obs. *Jacquin, Browne, and other eye-witneſſes, incline us to think it a diſtinct genus.*

ESSENTIAL CHARACTER.

Cal. four-leaved. *Cor.* none. *Capſ.* three-celled, inflated. *Seeds* in couples.

SPECIES.

1. Dodonæa viſcoſa. *Broad-leaved Dodonæa.*
   Lin. ſyſt. 362. *Reich.* 2. 162. *ſuppl.* 218. *hort. cliff.* 144. *fl. zeyl. n.* 141. *Gærtn. fruct.* 2. 134. *Jacqu. amer.* 109. *pict.* 56. *Trew. ehret.* 12. *t.* 9. *Brown. jam.* 191. *t.* 18. *f.* 1. (Triopteris) *Sloan. jam.* 2. 27. *t.* 162. *f.* 3. *Raii dendr.* 94. 17. *Rumph. amb.* 4. *t.* 50. *Pluk. phyt. t.* 142. *f.* 1. *Plum. ic. t.* 247. *f.* 2. *Barrer. æquin.* 109. (Thlaſpidioides.) *Burm. zeyl.* 55. *t.* 25. (Carpinus) *Maregr. bras. l.* 2. *c.* 13.
   Ptelea viſcoſa. *Lin. ſpec.* 173. *Mill. dict. n.* 2.
   Leaves oblong.
2. Dodonæa anguſtifolia. *Narrow-leaved Dodonæa.*
   Lin. ſyſt. 362. *ſuppl.* 218.
   Leaves linear.

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[a] Linn. ſuppl.
[b] Mill. fig.
[c] Gærtner.
[d] Hort. kew.

DESCRIPTIONS, *&c.*

1. This ſends up ſeveral ſtalks from the root, about the ſize of a man's arm, with ſeveral upright branches, covered with a light brown bark, which frequently ſeparates from the wood, and hangs looſe; leaves ſtiff, varying greatly in ſhape and ſize, ſome being four inches long, and an inch and a half broad; others not three inches long, and a quarter of an inch broad; they are ſpear-ſhaped, entire, and of a light green, growing with their points upward, and have very ſhort foot-ſtalks. The flowers are produced at the end of the branches in a ſort of raceme, each ſtanding upon a ſlender foot-ſtalk about an inch long.

[This upright, branched ſhrub, growing about five feet in height, is entirely viſcid and fetid. The younger branches are angular. Leaves oblong, with a bluntiſh point, attenuated at the baſe, quite entire, alternate, with ſcarcely any petiole, on tender plants that come out in the firſt months, uſually repand or ſerrate. Flowers in racemes, frequently varying much on the ſame branches. The natural number of leaflets in the calyx ſeems to be four; it is ſeldom found with five, and when it has only three, which is frequently the caſe, one of the leaflets is always larger than the reſt, and ſcored with a longitudinal groove. The piſtil is frequently deficient in one third part, and then the capſule has only two cells. Sometimes there are only ſeven ſtamens, and even ſix, but that happens very ſeldom. One ſeed in a cell is frequently abortive, and ſometimes both [a].

According to Gærtner, the capſule is membranaceous, thin, netted with veins, two-celled or three-celled, three-valved: the valves boat-ſhaped, the keel widened out into a membranaceous, broad, rounded edge; partitions faſtened to the axis of the fruit, which continues after the valves have fallen off; it is three-ſided, and the ſeeds are fixed to the middle of it by two very ſmall tubercles. Seeds roundiſh, turgidly lenticular, but very ſharp-edged towards the back, hard, ſmooth, black.

Browne ſays that this ſlender ſhrub ſeldom riſes more than ſix or ſeven feet, (ten or twelve, *Sloane*); both the trunk and branches are very flexile and tapering. The taſte of the whole plant is acerb and bitteriſh. In Jamaica it is called the *Switch Sorrel.* Native of the countries between the tropics.

In the Society iſles it is dioecous, in New Zealand hermaphrodite [b].—Introduced in 1690 by Mr. Bentick [c].

2. This reſembles the foregoing, but the leaves are lanceolate-linear. The fructification is polygamous [d]. Native of the Cape of Good Hope. Cultivated 1758, by Mr. Miller. It flowers from may to auguſt [e].]

PROPAGATION AND CULTURE.

1. This plant is propagated by ſeeds, which, if obtained freſh from abroad, will riſe eaſily upon a hot-bed: when the plants are fit to remove, they ſhould be each planted in a ſeparate ſmall pot filled with light loamy earth, and plunged into a hot-bed of tanners' bark, ſhading them from the ſun till they have taken new root; then they ſhould have free air admitted to them every day in proportion to the warmth of the ſeaſon, for they muſt not be drawn up weak, nor ſhould they have too much water. In the autumn the plants muſt be removed into the ſtove, where they ſhould have a temperate warmth in winter, but during that ſeaſon little water ſhould be given them; nor ſhould they have too much heat, for either of theſe will ſoon deſtroy them: as the plants obtain ſtrength, they will become more hardy, and may be ſet abroad in the open air for two or three months in the heat of ſummer, but it ſhould be in a ſheltered ſituation; in winter they muſt be placed in a ſtove, kept to a moderate temperature of warmth, for the plants will not live in a green-houſe here.

This was formerly ſhewn for the Tea-tree in many of the European gardens, where it many years paſſed for it among thoſe who knew no better.

[2. The ſecond ſort is leſs tender, and requires only the protection of a green-houſe or glaſs caſe.

DOGBERRY-TREE. See *Cornus.*

DOG'S-BANE. See *Apocynum.*

DOG'S-GRASS. See *Triticum.*

DOG'S-MERCURY. See *Mercurialis.*

DOG'S-TAIL-GRASS. See *Cynoſurus.*]

DOG'S-TOOTH. See *Erythronium.*

DOGWOOD. See *Cornus.*

DOLĬCHOS. (Δολιχος *of Theophraſtus. From* δολιχος, *long; the pod or legume being generally lengthened out.*)
Lin. gen. n. 867. *Reich.* 941. *Schreb.* 1181. *Gærtn. t.* 150. *Juſſ.* 356.
Claſſ. 17. 4. Diadelphia Decandria.
Nat. order of *Papilionaceæ* or *Leguminoſæ.*

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, very ſhort, four-toothed, equal; the *ſuperior tooth* emarginate.

COR. papilionaceous.

Standard roundiſh, large, emarginate, the whole reflex. Two *calluſes* oblong, parallel and longitudinal, growing to the ſtandard beneath towards the baſe, compreſſing the wings, not hollowed on the back.

Wings ovate, obtuſe, length of the keel.

Keel lunulate, compreſſed, beneath converging cloſely, length of the wings, aſcending at the tip.

STAM. *Filaments* diadelphous, (ſimple and nine-cleft,) the *ſimple* one curved at the baſe. *Anthers* ſimple.

PIST. *Germ* linear, compreſſed; *Style* aſcending. *Stigma* bearded, running on inwardly from the middle to the tip of the ſtyle, which on the fore part is callous, obtuſe.

PER. *Legume* acuminate, large, oblong, two-valved, two-celled.

SEEDS ſeveral, elliptic, uſually compreſſed.

OBS. *The habit is that of* Phaſeolus; *the Keel, which is not ſpiral, diſtinguiſhes the genus.*

ESSENTIAL CHARACTER.

Two parallel, oblong calluſes at the baſe of the ſtandard, compreſſing the wings underneath.

SPECIES.

* *Twining.*

[1. Dolichos benghalenſis.
Lin. ſyſt. 657. *Jacqu. hort.* 2. *t.* 124.
Shrubby, legumes ending in long dagger points.]

2. Dolichos Lablab. *Black-ſeeded Dolichos.*
Lin. ſpec. 1019. *Reich.* 3. 446. *hort. upſ.* 214. *Haſſelqu. itin.* 483. *engl. edit.* 252. *Gærtn. fruct.* 2. 323.
Phaſeolus. *Rivin. tetr. t.* 29. *f.* 4.—ægyptiacus, nigro ſemine. *Bauh. pin.* 341.
P. niger Lablab. *Alpin. ægypt. t.* 75. *Veſl. ægypt.* 27.—peregrinus 14. Lablab. *Cluſ. hiſt.* 2. 227. Lablab Alpini. *Bauh. hiſt. Raii hiſt.* 888.
Legumes ovate-ſabre-ſhaped, ſeeds ovate, with a bowed eye towards one end.

[3. Dolichos ſinenſis. *Chineſe Dolichos.*
Lin. ſpec. 1018. *Reich.* 3. 446. *amœn.* 4. 326. *Jacqu. hort.* 3. 39. *t.* 71. *Rumph. amb.* 5. *t.* 134. *Burm. ind.* 158. *Lour. cochinch.* 436.
Legumes pendulous, cylindric, toruloſe; peduncles erect, many-flowered.]

4. Dolichos uncinatus. *Hook-podded Dolichos.*
Lin. ſpec. 1019. *Reich.* 3. 446. *Plum. ſpec.* 8. *ic.* 221.
Teramnus volubilis. *Swartz prodr.* 105. *Brown. jam.* 290. 1. *Sloan. jam.* 1. 182. (Phaſeolus.)
Legumes cylindric, hirſute, with a hooked ſubulate claw at the end, peduncles many-flowered, ſtem rough with hairs.

[5. Dolichos luteolus.
Lin. ſyſt. 657. *Jacqu. hort.* 1. *t.* 90.
Legumes in ſeveral cylindric heads, ſeeds rounded.

6. Dolichos unguiculatus. *Bird's-foot Dolichos.*
Lin. ſpec. 1019. *Reich.* 3. 446. *hort. upſ.* 214. *Jacqu. hort.* 1. *t.* 23. *Rumph. amb.* 5. 381. *t.* 138? *Lour. cochinch.* 436.
Legumes in ſubcylindric heads, recurved, and concave at the tip.

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[a] Jacquin.
[b] Forſter.
[c] Hort. kew.
[d] Linn. ſuppl.
[e] Hort. kew.

7. Dolichos tranquebaricus.
Lin. ſyſt. 657. *Jacqu. hort.* 2. *t.* 70.
Legumes few, in cylindric heads, with a ſtraight dagger point.

8. Dolichos enſiformis. *Horſe-Bean.*
Lin. ſpec. 1022. *Reich.* 446. *hort. cliff.* 360. *Brown. jam.* 291. 2. *Sloan. jam.* 1. 177. *t.* 114. *f.* 1, 2, 3. (Phaſeolus.) *Rumph. amb.* 5. *t.* 135. *f.* 1. *Rheed. mal.* 8. *t.* 44.
Legumes gladiate, three-keeled at the back, ſeeds arilled.

9. Dolichos tetragonolobus.
Lin. ſpec. 1020. *Reich.* 447. *Lour. cochinch.* 437. *Rumph. amb.* 5. *t.* 133. *Burm. ind.* 159. (Lobus quadrangularis.)
Legumes quadrangular-membranaceous.

10. Dolichos ſeſquipedalis. *Long-podded Dolichos.*
Lin. ſpec. 1019. *Reich.* 447. *Jacqu. hort.* 1. *t.* 67.
Legumes ſubcylindric, even, very long.

11. Dolichos altiſſimus. *Tall Dolichos.*
Lin. ſpec. 1019. *Reich.* 447. *mant.* 101. *Jacqu. amer.* 203. *t.* 182. *f.* 85. *pict.* 100. *t.* 190. *Rheed. mal.* 8. 63. *t.* 36? (Kaku-valli.) *Lour. cochinch.* 438. ſee n. 25.
Legumes racemed, rough-haired, equal, ſeeds ſurrounded with a ſcar, leaves ſmooth on both ſides.]

12. Dolichos pruriens. *Horſe-eye Bean.*
Lin. ſpec. 1019. *ſyſt.* 657. *Reich.* 447. *mant.* 441. *Jacqu. amer.* 202. *t.* 122. *pict.* 99. *t.* 188. *Lour. cochinch.* 438. *Pluk. phyt. t.* 214. *f.* 1. *Sloan. jam.* 1. 37. (Phaſeolus). *Brown. jam.* 290. 1. *t.* 31. *f.* 4. (Stizolobium.) *Rumph. amb.* 6. *t.* 142. *Rheed. mal.* 8. *p.* 61. *t.* 35. *Burm. zeyl.* 191.
Legumes in racemes, valves ſomewhat keeled, rough-haired, peduncles by threes.

13. Dolichos urens. *Cow-itch Dolichos.*
Lin. ſpec. 1020. *ſyſt.* 658. *Reich.* 448. *Jacqu. amer.* 202. *t.* 182. *f.* 84. *pict.* 100. *t.* 189. *Pluk. phyt. t.* 213. *f.* 2. *Plum. ic. t.* 107. *Sloan. jam.* 1. 178. (Phaſeolus). *Brown. jam.* 295. (Zoophthalmum.) *Marcgr. braſ.* l. 1. c. 10. 19. (Mucuna.)
Legumes in racemes, with furrows tranſverſely lanceolate; the ſeeds ſurrounded with a ſcar.

[14. Dolichos minimus. *Small Dolichos.*
Lin. ſpec. 1020. *Reich.* 448. *hort. cliff.* 369. *t.* 21. *upſ.* 214. *Jacqu. obſ.* 1. 34. *t.* 22. *Sloan. jam.* 1. 182. *t.* 115. *f.* 1. *Brown jam.* 294. 7.
Legumes in racemes, compreſſed, with four ſeeds in them, leaves rhomb-ſhaped.

15. Dolichos lineatus.
Lin. ſyſt. 658. *Thunb. jap.* 280.
Legumes in racemes, oblong, three-keeled.

16. Dolichos capenſis.
Lin. ſpec. 1020. *Reich.* 449. *amœn.* 6. *afr.* 44.
Peduncles with one or two flowers, legumes elliptic, compreſſed, leaves ſmooth.

17. Dolichos ſcarabæoides. *Silvery-leaved Dolichos.*
Lin. ſpec. 1020. *Reich.* 449. *fl. zeyl. n.* 282. *Pluk. alm. t.* 52. *f.* 3.
Leaves ovate, tomentoſe, flowers ſolitary, ſeeds two-horned.

18. Dolichos incurvus.
Lin. ſyſt. 658. *Thunb. jap.* 280.
Legumes ſolitary, incurved, three-keeled.

19. Dolichos bulboſus. *Bulbous Dolichos.*
Lin. ſpec. 1021. *Reich.* 449. *Lour. cochinch.* 439. *Pluk. alm. t.* 52. *f.* 4. *Rumph. amb.* 5. *t.* 132. *f.* 2. (Cacara bulboſa.)
Leaves ſmooth, many-angled, toothed.

20. Dolichos trilobus.
Lin. ſpec. 1021. *Reich.* 449. *hort. cliff.* 360. *Lour. cochinch.* 439. *Burm. ind.* 160. *t.* 50. *f.* 1. *Pluk. alm. t.* 214. *f.* 3. (Phaſeolus.)
Lateral leaflets gibbous on the outſide, the middle one three-lobed.

21. Dolichos ariſtatus.
Lin. ſpec. 1021. *Reich.* 449.
Peduncles two-flowered, axillary; legumes linear, compreſſed, ending in a ſtraight awn.

22. Dolichos filiformis. *Cat's-claw Dolichos.*
Lin. ſpec. 1021. *Reich.* 450. *amœn.* 5. 402. *Brown. jam.* 294. *n.* 6.
Leaflets linear, obtuſe, mucronate, ſmooth, pubeſcent underneath.

23. Dolichos purpureus. *Purple Dolichos.*
Lin. ſpec. 1021. *Reich.* 450. *Lour. cochinch.* 438. *Burm. ind.* 160.
Stem ſmooth, petioles pubeſcent, wings of the corolla ſpreading.

24. Dolichos regularis.
Lin. ſpec. 1022. *Reich.* 450. *Gron. virg.* 82.
Leaves ovate, obtuſe, peduncles many-flowered, petals equal in ſize and form.

25. Dolichos lignoſus. *Woody Dolichos.*
Lin. ſpec. 1022. *Reich.* 450. *hort. cliff.* 360. *t.* 20. *Smith ſpicil.* 19. *t.* 21. *Jacqu. amer. pict.* 100? *Rumph. amb.* 5. *t.* 136.
D. altiſſimus. *Lour. cochinch.* 438?
Stem perennial, peduncles forming a head, legumes ſtiff and ſtraight, linear.

26. Dolichos polyſtachios.
Lin. ſpec. 1022. *ſyſt.* 658. *Reich.* 450. *Gron. virg.* 2. 106. 1. 172. *Thunb. jap.* 281.
Stem perennial, racemes very long, pedicels in pairs, legumes acuminate, compreſſed.

27. Dolichos reticulatus. *Netted-leaved Dolichos.*
Ait. hort. kew. 3. 33.
Leaves ovate, acute, wrinkled, netted, villoſe, racemes few-flowered.

28. Dolichos luteus.
Swartz prodr. 105.
Twining, flowers in a ſort of ſpike, legumes ſubcylindric, ſmooth, leaves roundiſh-rhombed, obtuſe, entire, ſmooth.

29. Dolichos montanus.
Lour. cochinch. 440.
Stem ſhrubby, climbing, leaflets ovate-rhombed, five filaments with oblong anthers, and five alternate roundiſh.

30. Dolichos haſtatus.
Lour. cochinch. 442.
Stem procumbent, leaves ſubhaſtate, peduncles many-flowered, erect.

31. Dolichos rotundifolius.
Vahl ſymb. 2. 81. *Rheed. malab.* 8. 83. *t.* 43. (Katu tsjandi.)
Legumes racemed, compreſſed, ſomewhat hairy, ſword-ſhaped, leaflets oval-roundiſh, ſmooth.

* * *Erect.*

32. Dolichos enſiformis. *Scymitar-podded Dolichos.*
Lin. ſpec. 1022. *Reich.* 451. *Lour. cochinch.* 437.
Stem ſuberect, legumes ſcymitar-ſhaped, three-keeled, ſeeds arilled.

33. Dolichos Soja.
Lin. ſpec. 1023. *ſyſt.* 659. *Reich.* 451. *fl. zeyl. n.* 534. *mat. med.* 171. *Kæmpf. amœn. t.* 838. (Phaſeolus). *Thunb. jap.* 282. *Lour. cochinch.* 441. *Rumph. amb.* 5. *t.* 140. (Cadelium).
Stems flexuoſe, racemes axillary, erect, legumes pendulous, hiſpid, containing about two ſeeds.

34. Dolichos Catiang.
Lin. ſyſt. 659. *Reich.* 451. *mant.* 269. *Lour. cochinch.* 442. *Burm. ind.* 161. *Rumph. amb.* 5. *t.* 139. *f.* 1. *Rheed. mal.* 3. *t.* 41.
Legumes double, linear, ſomewhat erect.

35. Dolichos biflorus. *Two-flowered Dolichos.*
Lin. ſpec. 1023. *Reich.* 451. *Lour. cochinch.* 441. *Burm. ind.* 161. *Pluk. alm. t.* 213. *f.* 4. (Phaſeolus).
Stem perennial, even, peduncles two-flowered, legumes erect.

36. Dolichos repens. *Sea-ſide Dolichos.*
Lin. ſpec. 1022. *Reich.* 451. *amœn.* 5. 402. *Brown. jam.* 293. 5.
Stem creeping, leaves pubeſcent, ovate, flowers racemed, in pairs, legumes linear, columnar.

37. Dolichos roſeus.
Swartz prodr. 105. *Brown. jam.* 293. 4.
Stem creeping, aſcending, leaflets roundiſh, ſhining, flowers in racemes, legumes three-keeled at the back.

38. Dolichos fabæformis.

L'Herit. ſtirp. nov. 6. 163. *t.* 78.

Pſoralea tetragonoloba. *Lin. ſyſt.*, 686. *Reich.* 3. 544. *mant.* 104.

Stem erect, angular, leaves villoſe, glaucous, legumes ſtiff and ſtraight, ſubquadrangular.

DESCRIPTIONS, *&c.*

Moſt of the ſpecies are annual, and natives either of the Eaſt or Weſt-Indies.—They are chiefly herbaceous, and furniſhed with twining ſtalks. The leaves are ternate and petioled, with ſtipules diſtinct from the petiole; the end-leaflets are jointed with the terminating petiolule, two-awned below; the ſide ones have only one awn; the awns reſemble ſtipules; the flowers are frequently in ſpikes, and axillary; the legume is often ſmooth, ſometimes but ſeldom villoſe or prurient. The lobes of the corcle are diſtinct from the ſeed-leaves [a]. The ſpecies are numerous. Mr. Miller affirms that he has cultivated more than ſixty, beſides many varieties, and ſuch probably are ſeveral which are reputed to be ſpecies. Some of them, wanting the calluſes, ſhould perhaps be removed to another genus. See *Teramnus.* Gærtner ſays, that the ſpecies may be more accurately determined, by obſerving whether the ſeed has any hilum (eye or umbilical ſcar,) and if it has, whether it is placed on one ſide, or annular.

1. This is a perennial, with a ſtem ſomewhat roughiſh to the touch, and ſcandent, as well as producing ſeveral branches: leaves roundiſh-ovate, ending in a point, furniſhed with a briſtle: ſtipules lanceolate; peduncles racemoſe, four or five inches long; flowers ſeated on very ſhort peduncles, uncertain as to number; ſnow-white, and lightly odorous: Legume oblong, pointed, compreſſed, firſt green, afterwards growing pale: ſeeds few, roundiſh-oblong, compreſſed, brown, with deeper-coloured points, and with a long protuberant, ſnow-white hilum [b].

2. Legumes ſcabrous at the back [c], compreſſed, flat, crenulate at both ſutures, conſiſting of ſeveral cells: partitions very thin, compoſed of a cellular ſnowy-white membrane. Seeds three or five, flatted a little, ſmooth, but not ſhining, black or ferruginous, edged on one ſide with a fungoſe ſnowy-white callus, proceeding from the umbilicus: they have no albumen; the embryo is curved and white; the cotyledons elliptic and plano-convex; the plume two-leaved, the leaflets cordate-acuminate, veined, doubled together; the radicle bent in, and centrifugal [d]. Stems and branches round, ſcabrous backward. Peduncles forming half whorls [e].

Dolichos enſiformis of Thunberg approaches nearer to this, than to the D. enſiformis of Linneus, from which it is certainly different [f].

Alpinus ſays that this grows wild in Egypt. Haſſelquiſt, however, is certain that it does not grow wild in Lower Egypt, but is only cultivated there in gardens. The Egyptians call it *Ful Frangi* or European Bean: hence we might conjecture that the Europeans firſt brought it into Egypt. The inhabitants make pleaſant arbours of it: they not only ſupport it with trellis work, but faſten it with twine, by which means the leaves form an excellent covering, and an agreeable ſhade.

It was cultivated in 1714, by the Dutcheſs of Beaufort [g].

3. Stem annual, long, round, ſlender, twining, ſomewhat branched. Leaves ternate, broad-lanceolate, ſmooth, with two or three lanceolate ſtipules at the baſe of the common petiole. Flowers pale violet, on few-flowered, ſuberect, axillary peduncles: ſtandard aſcending, very blunt. Legume linear, from one to two feet in length, ſubcylindric, toruloſe, ſmooth, pendulous. Seeds oblong-kidney-form, pale, many [h]. Loureiro is of opinion, that D. ſeſquipedalis, n. 18. is not different from this.

Native of India, Amboina, China and Cochinchina.—Introduced 1776, by M. Thouin.

4. This is removed by Browne and Swartz to a new genus, under the name of Teramnus, becauſe it wants the calluſes at the baſe of the ſtandard in the corolla, and differs in other reſpects. See *Teramnus.* It is a native of Jamaica.

5. Stem rather angular, branches round; a ſcandent plant: branches three or four cubits long: leaves ovate, entire, ſubacute, gloſſy. Stipules ſmall and roundiſh: peduncles axillary, ſupporting from ſix to ten elegantly yellow flowers: the ſtigma is much bearded; the legume ſmooth and obtuſe [i]. Native of the Society iſles [k].

6. An annual ſmooth plant, with climbing ſtem: leaves lanced-ovate, and ſharp; peduncles ſupporting but few flowers, and upright; flowers whitiſh. Stigma long and bearded: legume ſmooth, ending in a recurved ſharp-pointed tip, which is channelled on its upper part. Seed whitiſh, with a ſnow-white hilum [l].

Native of the Weſt-Indies. Introduced 1780, by W. Ph. Perrin, Eſq. [m]. Loureiro ſays, it is a native of China, whence it was brought into Portugal.

7. This is extremely like the Dolichos unguiculatus, but flowers at a different time of the year, and is more climbing. The whole plant is very ſmooth: the vexillum or ſtandard of the flowers is pale yellow behind, and blueiſh-red in front; the wings more blue, and the keel white. The legume differs from that of the unguiculatus merely in being ſlenderer [n].

8. This is a native of Jamaica, and is diſtinguiſhed by its large falcated legume, and white ſeeds, with a ſaffron-coloured hile. The ſtem is three or four feet high: the ſhoots run much farther: the legumes are between ten and fourteen inches in length, and generally contain ten or eleven ſeeds [o].

9. Stem herbaceous, round, ſlender, ſcandent, long, branching. Leaflets broad-lanceolate, ſmooth, pale green: ſtipules lanceolate, minute. Flowers pale blue, on long, lateral, few-flowered peduncles. Legume thick, half a foot long, with a thin, lacerated, connate membrane at each of the four corners. Seeds about eight [p]. Native of the Eaſt-Indies, China and Cochinchina.

10. Appearance of a Phaſeolus. Standard of the flower pale above, reddiſh within. Legume more than a foot and half in length, roundiſh, with a little obtuſe gibbous hook at the end [q].—Native of the Weſt-Indies. Introduced 1781, by Mr. Francis Maſſon [r].

11. This climbs the higheſt trees, whence hang elegant wreaths of flowers in cloſe racemes, on peduncles frequently more than twelve feet in length. The proper pedicels are ſhort, and in threes: the flowers void of ſcent, an inch and half long, with a ferruginous calyx, a violet-blue ſtandard and wings, and a yellowiſh keel; the whole of the ſtamens and piſtil riſe ſurpriſingly, and are incloſed within the convoluted ſtandard. Native of the iſland of Martinico [s].

Loureiro applies Rumphius's ſynonym of Cacara perennis, t. 136, which Linneus gives to D. lignoſus (ſee n. 25.), to his D. altiſſimus; which he ſays agrees better, if the perennial ſtalk be excepted, with the altiſſimus of Linneus than with the lignoſus: he ſuſpects that this and the lignoſus may not be ſpecifically different.

12. Leaflets rough with hairs underneath. Calyx campanulate, five-toothed, the middle tooth ſhorter. Banner very ſhort, three times leſs than the other petals, ovate: keel linear, acute, boat-ſhaped at the end. Four alternate filaments, ſomewhat club-ſhaped, larger. Legume compreſſed, inflex at the baſe, reflex at the tip [t].

Common in all parts of the Weſt-Indies, and riſing to the top of the talleſt trees, or ſpreading wide among lower buſhes. Stems round and ſlender. Leaflets oval and villoſe, always three on every foot-ſtalk. Flowers dark purple, in ſpikes at the axils of the ribs. Legumes beſet thickly with ſhort, rigid hairs, occaſioning an itching when handled. A decoction of the roots is reckoned a powerful diuretic, and cleanſer of the kidneys. A vinous infuſion of the pods (twelve to a quart) is ſaid to be a certain remedy for the dropſy: the doſe half a pint, when made in beer. In the Windward iſlands, they make a ſyrup of the pods, which is ſaid to be very effectual againſt worms [u].—Native of both Indies, according to Linneus, and of Cochinchina, according to Loureiro. Introduced in 1781, by Mr. Gilbert Alexander [x].—This may be true of the Kew garden; but had it not been cultivated before by Mr. Miller and others?

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[a] Juſſieu.
[b] Jacqu. hort.
[c] Linn. ſpec.
[d] Gærtner.
[e] Linn. ſpec.
[f] Kæmpf. ic. ſelect.
[g] Hort. kew.
[h] Loureiro.
[i] Jacqu. hort.
[k] Forſter.
[l] Jacqu. hort.
[m] Hort. kew. Brown. jam.
[n] Jacqu. hort.
[o] Linn. hort. cliff. and
[p] Loureiro.
[q] Linn. ſpec.
[r] Hort. kew.
[s] Jacqu. amer.
[t] Linn. mant.

13. Stems round. Leaflets ſubovate, quite entire, acuminate, the upper ſurface ſmooth, the lower covered with a ſhining ſilvery down that is hardly perceptible. Racemes ſimple, pendulous, ſcarcely ever longer than the leaves. Proper peduncles one-flowered, in threes, placed cloſely at the end of the raceme, and hence forming a very elegant pendulous wreath of about eighteen flowers; theſe have no ſcent, are about two inches long, have a ferruginous calyx, and a yellow corolla, with the lower edge of the wings red. Legume ſeven inches long, wrinkled. The ſeeds, from their reſemblance to an eye, are called by the French *Yeux bourrique*, or Aſs's eye [y]. In our Weſt-India iſlands, for the ſame reaſon, they have the name of *Ox-eye Bean*.

This alſo climbs to the top of the talleſt trees, throwing down its long ſlender flower-ſtalks to a moderate diſtance from the axils of the upper ribs, from whence they generally riſe: theſe are not above the thickneſs of a common packthread, but ſeldom under four or five feet in length, and bear the flowers in cluſters at their extremities [z]. Jacquin, however, thinks it probable, that by this deſcription Browne may have confounded this ſpecies with the altiſſimus.

Native of the Weſt-Indies. Cultivated 1691, by the Dutcheſs of Beaufort [a]. This and the foregoing are perennial and ſhrubby. The ſurface alſo of the legumes are covered with prurient hairs.

14. This climbs three or four feet in height, and has numerous branches. Leaves glaucous. Racemes ſtiff. Wings of the corolla yellow; ſtandard browniſh red, turning blue as it withers. Legumes villoſe and brown, commonly containing only two ſeeds. According to Linneus there are four [b]. Browne calls it ſmall fetid Dolichos. In Curaçoa it has the name of *Vrattekruyt* or Wart-herb, the leaves bruiſed with ſalt, being reputed to cure warts.

Native of Jamaica, and according to Jacquin of all the Caribbee iſlands. Introduced 1776, by Monſ. Thouin [c].

15. Stem ſubangular, ſmooth. Leaflets ſmooth, ovate, obtuſe with a point, marked with lines, equal, an inch and half in length, the ſide ones on ſhort, the middle one on a long petiole. Stipules very ſmall, briſtle-form. Legumes rounded in front, ſtraight at the back, marked with three lines, the ſide ones larger than the middle line, acute, ſmooth, two inches long.—It differs from *D. enſiformis* in the leaves being ovate-oblong, not gibbous; obtuſe, not acute; thick, and marked with lines, not three-nerved: in having the legumes ſtraight at the back and oblong, not ſcymitar-ſhaped and curled. Native of Japan [d]. Thunberg aſcribes the *Reedſu* of Kæmpf. amoen. 5. 836. to this ſpecies. See n. 32.

16. Stem filiform, angular, even. Stipules ovate, acute, ſtriated, very ſmall. Leaves petioled; leaflets ovate-oblong, acuminate, veined. Peduncles long. Legumes acute at both ends, the back ſuture ſtraighteſt, ſmooth, containing uſually two ſeeds [e]. Native of the Cape of Good Hope.

17. Stem ſcabrous. Leaves petioled; leaflets obtuſe, veined underneath, ſoft. Flowers ſingle from the axils. The ſeeds have two proceſſes like the antennas of a beetle, whence the name [f]. Native of the Eaſt-Indies. Introduced 1773, by Joſ. Nich. de Jacquin, M. D. [g].

18. Stem ſtriated, ſmooth. Leaflets oblong, acute, entire, ſmooth, paler underneath, nerved, two inches broad, a hand in length, equal; the ſide ones on very ſhort petioles, the middle leaflet on a longer. Flowers axillary, ſolitary, peduncled. Peduncle round, bent round at the end, and ſmooth. Legume enſiform, with a point at the end bent in, ſmooth, a ſhort ſpan in length.—It differs from *D. enſiformis* in having the flowers ſolitary from the axils; the leaves oblong, and not gibbous on one ſide; the legumes bent in, not ſcymitar-ſhaped, and bent back; and the peduncle bending round:—from *D. lineatus*, in the leaves being broad at the baſe, gradually acuminate, three-nerved, thinner; the legume inflex, enſiform, acuminate, waved, ſolitary. Native of Japan [h].

19. Stem perennial, ſuffruticoſe, long, round, ſmooth, branched, without any ſtipules. Leaves roundiſh-angular, ternate, acuminate, petioled. Flowers terminating, in long racemes. Calyx cup-ſhaped, four-cleft, the upper ſegment ſhorter, emarginate. Corolla pale violet, with an ovate, entire, converging ſtandard. Legume compreſſed, linear, four inches long, ſlightly bowed, divided acroſs. The root conſiſts of roundiſh, tailed, juicy, white tubers in bundles: theſe are eaten both raw and dreſſed, but not the ſeeds [i].

Native of both Indies. Introduced 1781, by Mr. Francis Maſſon [k].

20. Stem perennial, ſuffruticoſe, round, very long, branched, twining or creeping when it lies on the ground, hirſute. Leaves petioled, with two-horned ſtipules: leaflets three-lobed, acuminate, pubeſcent. Flowers purple, in long terminating and lateral ſpikes; with a large yellow ſpot on the middle of the ſtandard. Legume four inches long, linear, ſtraight, compreſſed, divided acroſs between the ſeeds, which are about eight in number, and of a rufous colour. The root is compoſed of a few long tubers in bundles, they are two feet long, ſubcylindric, fibroſe-fleſhy, of a pale colour, and eatable when boiled; but not the legumes [l]. Loureiro doubts whether this be the plant of Plukenet and Burman, ſince theſe authors make no mention of the remarkable large tubers.

Native of the Eaſt-Indies. Cultivated in China and Cochinchina.

21. Stem round. Leaflets even, ovate-oblong, acuminate. Legumes ſtraight and ſtiff, ending in a filiform, ſtiff, ſharp awn, an inch in length. Native of America [m].

22. This grows among buſhes, but ſeldom ſtretches above three or four feet in length. The pods are long and compreſſed; the ſtigma or top of the ſtyle is almoſt naked. It is uſed as a purgative ingredient in diet-drinks, and is ſaid to anſwer well in hydropic caſes. Native of Jamaica, where it is called Cat's-claws [n].

23. Stem purpliſh. Leaflets ſubcordate, ſmooth, netted underneath with purple veins. Calyxes covered with two bractes. Corolla bright purple: keel violet below the tip. Legume compreſſed [o]. Loureiro adds, that the ſtem is perennial, hiſpid, and branched: the leaflets ſharp, ſhort, with purple veins, on hairy petioles: ſtipules in fours, awl-ſhaped: the calyx of the ſame colour with the corolla: the flowers in long, erect, terminating ſpikes: legumes three inches long, broad and flat, ſmooth, purpliſh: ſeeds compreſſed-ovate, ſurrounded with a ſcar. The legumes, when young and freſh, are ſapid and ſalubrious. Native of both Indies. Cultivated in China and Cochinchina.

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[u] Browne.
[x] Hort. kew.
[y] Jacqu. amer.
[z] Browne.
[a] Hort. kew.
[b] Jacqu. obſ.
[c] Hort. kew.
[d] Thunberg.
[e] Linn. amoen.
[f] Linn. zeyl.
[g] Hort. kew.
[h] Thunberg.
[i] Loureiro.
[k] Hort. kew.
[l] Loureiro.
[m] Linn. ſpec.
[n] Browne.
[o] Linn. ſpec.

Loureiro has another ſort, which he calls *D. albus*, and is not very different from this, only more tender and ſapid. It is *Carara alba* of Rumphius, 5. t. 137. The ſtem is ſmooth and white: the leaflets three-cornered-rounded, pubeſcent, ſoft, pale, on ſmooth petioles: ſtipules in pairs, acute, ſhort: flowers white, in ſhort ſubterminating racemes, with a very wide, reflex ſtandard: legumes ſmooth, but tubercled on the back, and beaked. This is alſo cultivated in China and Cochinchina.

24. Native of Virginia.

25. Root woody, perennial. Stem woody, ſupple, much branched, roundiſh, ſtriated, ſmooth: branches alternate, very long and ſlender, but little ſubdivided, round, ſtriated, ſomewhat downy, leafy, many-flowered. Leaves alternate, on long foot-ſtalks, ternate or rather binate with an odd leaflet: common foot-ſtalk roundiſh, channelled above, ſwelling and purpliſh at the baſe; partial ones very ſhort, ſwelled, incurved: leaflets rhomboid, elongated, acute, entire, obſoletely three-nerved; bright green and ſhining above, glaucous beneath. Stipules entire, ſharp, ſomewhat triangular, downy on the margin, dark purple at the baſe, two larger at the bottom of the common foot-ſtalk, and two ſmaller, lanceolate at the inſertion of the partial foot-ſtalks. Racemes axillary, ſolitary, erect, having from three to ſix flowers in a little head. Peduncle ſimple, very long, ſtriated, angular in the upper part; pedicels generally two together, ſhort, downy, one-flowered. Bractes lanceolate, acute, hairy. Flowers nodding a little, roſe-coloured with a purpliſh keel. Calyx ſmooth, thickly ciliated on the edge. Legume an inch long, a little recurved, browniſh, ſmooth. Seeds black [p].

Native of the Eaſt Indies. Introduced 1776, by M. Thouin [q].

26. Stem becoming ſhrubby, often round, ſmooth, very long. Leaves alternate, unequally pinnate, ſmooth: leaflets about ſix pairs, oppoſite, on very ſhort petioles, ovate, acuminate, entire, ſmooth, pale underneath, an inch long, the odd lobe on a longer petiole. The flowers from the ſame bud with the leaves, in racemes often a foot in length. Pedicels ſcattered, oppoſite and alternate, ſhort, one-flowered. It varies with white and with purple corollas; with larger hirſute, and with ſmaller ſmooth legumes.

Native of Japan, where it is frequently cultivated for arbours [r]. Alſo of Virginia.

27. Native of New South Wales. Introduced 1781, by Sir Joſeph Banks, Bart.—Shrubby [s].

28. Native of Jamaica [t].

29. Roots ſubtuberous, hard, long, in bundles. Stem long, branched. Leaflets large, tomentoſe, entire. Flowers wholly purple, in long lateral ſpikes. Stamens five longer, with oblong anthers, five alternately ſhorter, with roundiſh anthers. Legume linear, ſtraight, compreſſed, ſeparated between the ſeeds; which are compreſſed and ſuborbiculate.

Native of the mountain woods of Cochinchina.

This ſpecies is very nearly allied to D. bulboſus and trilobus, eſpecially in the tuberous root, linear legumes divided between the ſeeds, ſtyles and ſtigmas not pubeſcent. Had not Linneus ranged theſe under Dolichos, Loureiro would have ſuppoſed that all three belonged to another genus.

30. Stem annual, long, round, branched. Leaves three-nerved, ſmooth. Flowers yellow, axillary, on long, ſtriated peduncles. Legume linear, ſtraight, ſubcylindric. Seeds ovate, pale, eſculent. Cultivated on the eaſtern coaſt of Africa [u].

31. Stem ſmooth, woody, angular at top. Leaflets oval, the end one roundiſh; entire, emarginate, veined: petiole a little longer than the leaflets, ſcarcely hairy; petiolules purple, hairy. Racemes axillary, half a foot long. Peduncles with remote tubercles, almoſt as big as Coriander ſeeds, purple at top. Flowers two or three at each tubercle, on very ſhort pedicels. Bractes two, roundiſh, caducous, at the baſe of the flower. Calyx bell-ſhaped, ſmooth. Corolla large, purple. Legumes three inches long, oblique at both ends, acute, with very minute hairs preſſed cloſe. — D. altiſſimus differs from this in having the calyxes and wings villoſe at the baſe [x].

32. Stem perennial, ſuffruticoſe, ſcandent, long, branched, ſmooth. Leaflets acute, wrinkled, ſmooth. Stipules briſtleſhaped, very ſmall. Flowers violet-coloured, on many-flowered, axillary peduncles. Calyx tubular, two-lipped: upper-lip bifid; lower three-toothed, ſhorter. Wings and keel ſickle-ſhaped, equal to the ſtandard. Filaments equal, with ovate, nodding anthers. Legume large, compreſſed, thicker at the back, three-nerved, reflex at the tip, acuminate. Seeds five or ſix, large, compreſſed-ovate.

Native of China and Cochinchina; cultivated for arbours, not for food.—There is a variety, with legumes twice as long, and flatter, with blunter leaves, and other minute differences [y].

Here are two ſpecies, this and n. 8. bearing the ſame name. They are however different; that probably from the Weſt, this from the Eaſt Indies. The plant of Rumphius (t. 135. f. 1.) probably belongs to this; but whether it is Thunberg's enſiformis (p. 279.) I cannot ſay. Kæmpfer's *Reedſu* is referred by him to D. lineatus. See Kæmpf. ic. ſelect. t. 25.

Native of the Eaſt Indies. Introduced 1778, by Mr. William Roxburgh [z].

33. Stem round at bottom and ſmooth; above ſtriated, very hirſute, a foot and more in height. Leaves petioled, hirſute: leaflets petioled, ovate, obtuſe with a point, entire, the middle one on a longer petiole and larger, an inch in length: petiole ſtriated, hirſute, a finger's length. Flowers in ſhort, erect, hirſute racemes: ſubſeſſile; from three to five together. Corollas purple, ſcarcely larger than the calyx [a].

Native of the Eaſt Indies, Ceylon, Japan, &c.

The ſeeds, which are uſually called *Miſo* in Japan, are put into ſoups, and are the moſt common diſh there, inſomuch that the Japoneſe frequently eat them three times a day. The *Soja* of the Japoneſe, which is preferred to the *Kitjap* of the Chineſe, is prepared from theſe ſeeds, and is uſed in almoſt all their diſhes, inſtead of common ſalt. The Chineſe alſo have a favourite diſh made of theſe ſeeds, called *Teu hu* or *Tau hu*, which looks like curd, and though inſipid in itſelf, yet with proper ſeaſoning is agreeable and wholeſome [b].

34. Stem annual, a foot and half high, roundiſh, rugged, branched. Leaflets broad-lanceolate, ſmooth. Common petiole long. Stipules lanceolate, minute. Flowers ſubterminating, two or three together, on a very long peduncle. Legume linear, four inches long, ſubcylindric, ſlender, ſmooth. Seeds oblong-ovate, ſomewhat compreſſed, with a ſcar of a different colour. There are ſeveral varieties differing in the colour of the flower and ſeed, all which are much cultivated for food [c].

Native of the Eaſt Indies.

35. Stem ſuffruticoſe, a foot and half high, erect, branched, hairy. Root an ovate brown tuber. Leaves linear-lanceolate, quite entire, veined, pubeſcent on both ſides, ſubſeſſile. Flowers yellow, axillary. Peduncles erect. Stipules in pairs, lateral, ſubulate, long. Legume hirſute, coriaceous, inflated, two-ſeeded [d].

Native of India, (and China.) Introduced 1776, by M. Thouin [e].

36. Common by the ſea-ſide in Jamaica. The root is a ſtrong purgative [f].

37. Native of Jamaica.

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[p] Smith ſpicil. [q] Hort. kew. [r] Thunberg. [s] Hort. kew. [t] Swartz. [u] Loureiro.

[x] Vahl. [y] Loureiro. [z] Hort. kew. [a] Thunb. and Linn. [b] Thunb. and Loureiro. [c] Loureiro. [d] Ibid. [e] Hort. kew. [f] Browne.

38. Root annual. Stem ſimple, with lines running down from the petiole, villoſe, rugged, herbaceous, a foot high, the thickneſs of a quill. Leaves alternate, ſpreading, four inches long; lateral leaflets oppoſite, ſcarcely petioled, the end one more produced and petioled; they are ovate, acute with a minute point, ſubangular and toothed, nerved, thick, brittle, two inches and a half long. Petioles three-ſided, channelled. Stipules linear, very acute, villoſe, erect, permanent. Spikes axillary, ſolitary, erect, villoſe, ſhorter than the petioles: flowers ſubſeſſile, erect, purple. Bracte awl-ſhaped, erect, under each flower. Filaments all connate, five ſcarcely ſhorter than the others, with peltate anthers; on the longer ones ovate, acuminate, two-celled. Legumes acuminate, compreſſed, ſilky. Seeds ſeven or eight, orbicular, ſubcompreſſed, brown, ſeparated by tranſparent membranes.

Native of the Eaſt Indies[g].

PROPAGATION AND CULTURE.

Moſt of the ſpecies, coming from the Eaſt and Weſt Indies, are tender, and ſeldom perfect their ſeeds in England. Being moſtly annual plants, they are frequently loſt in our ſtoves, and recovered again as the ſeeds are ſent over. Mr. Miller had probably cultivated moſt of the above, and perhaps many others not known at preſent, in the long courſe of his practice.]

The 12th and 13th are ſometimes preſerved in botanic gardens, eſpecially the latter, whoſe pods are cloſely covered with ſtinging hairs, commonly known by the title of Cow-itch; but theſe are too tender to thrive in the open air in this country, ſo that whoever is deſirous to have the plants, ſhould ſow their ſeeds in a hot-bed in march; and when the plants are come up, they ſhould be each planted in a ſeparate pot, and plunged into the hot-bed again, being careful to ſhade them till they have taken root; after which they muſt have freſh air every day admitted to them, in proportion to the warmth of the ſeaſon; and when the plants are too tall to remain in the hot-bed, they ſhould be removed into the bark-ſtove, where, if they are allowed room to run, they will flower and perfect their ſeeds.

2. 4. Theſe, with ſeveral other ſpecies are cultivated in warm countries for the table, but in England theſe ſeldom perfect their ſeeds; and were they to thrive here as well as in the warm countries, they would be little eſteemed, becauſe we have much better ſorts in our gardens already; for the ſcarlet flowering Kidney Bean is preferable to all of them for eating, and deſerves our care to cultivate it more than any other.

[25. This is eaſily propagated by ſeed, and produces abundance of flowers during ſummer in a ſtove[h].

38. This alſo ripens its ſeed, and may be propagated that way[i]. And ſo doubtleſs may many of the other ſorts, in a good ſtove.

Dolichos trilobatus. See *Glycine triloba.*

DOLIOCARPUS.

Rolander in act. holm. 1756. *Lin. gen. Schreb. n.* 874. *Juſſ.* 433.
Calinea. *Aubl. t.* 221. *Juſſ.* 434.
Claſſ. 13. 1. Polyandria Monogynia.

GENERIC CHARACTER.

Cal. *Perianth* five-leaved: *leaflets* oblong-rounded, concave, unequal, coloured, permanent.

Cor. *Petals* three, roundiſh, concave, plaited.

Stam. *Filaments* very many, inſerted into the receptacle, capillary. *Anthers* compreſſed.

Pist. *Germ* globular. *Style* long, incurved. *Stigma* compreſſed, flat, ſubbifid.

Per. *Berry* globular, one-celled, crowned with the ſtyle.

Seeds two, arilled, oblong-rounded, flat on one ſide, convex on the other.

Obs. *Aublet aſcribes to his* Calinea *a one-leafed, three-parted calyx, with two ſmaller acceſſary ſegments, which he calls bractes; it ſeems however not to be generically diſtinguiſhed from* Doliocarpus.

Soramia *of Aublet* 219. *differs in having the ſegments of the calyx almoſt equal; five petals; a one-celled berry; and a ſingle ſeed; but it may be doubted whether theſe diſtinctions be ſufficient to make it a different genus.*

ESSENTIAL CHARACTER.

Cal. five-leaved. *Cor.* three-petalled, plaited. *Stigma* ſubbifid. *Berry* globular, crowned with the ſtyle, one-celled, two-ſeeded.

SPECIES.

1. Doliocarpus Rolandri.
Gmel. Linn. ſyſt. 2. 805. *Roland. in act. holm.* 1756. *p.* 261.
Stem ſtiff and ſtraight, leaves ovate-lanceolate toothed, flowers terminating.

2. Doliocarpus major.
Gmel. Linn. ſyſt. 2. 805. *Roland. in act. holm.* 1756. *p.* 261,
Stem ſcandent, leaves ovate toothed, peduncles lateral one-flowered.

3. Doliocarpus Calinea.
Gmel. Linn. ſyſt. 2. 805. *Aubl. guian.* 1. 557. *t.* 221.
Stem ſcandent, leaves ovate quite entire, flowers axillary in bundles.

DESCRIPTIONS, &c.

1. This grows to a ſhrub: ſtem and branches upright: leaves hanging. They are of an oval-lanceolate ſhape, and dentated.

2. The flowers are aromatic, but rather nauſeous; the berries of this plant are pernicious. Stem ſlender and flexuoſe; branches at right angles: leaves ſpreading[a].

3. A ſhrub, with ſeveral knotty ſpreading twigs, ſcattering over the neighbouring trees: the branches are garniſhed with alternate, oval, ſhining green leaves terminating in a point: the largeſt are four inches long. The flowers ſpring from the boſoms of the leaves on the branches, and are arranged alternately in little heaps. The corolla conſiſts of three white petals, which are large and rounded.

Native of Guiana[b].

DOMBEYA. (*So named in memory of Joſ. Dombey, who travelled into Peru, Chili, &c.*)
Claſſ. 22. 13. Dioecia Monadelphia.
Nat. order of *Coniferæ*.
Lin. gen. Schreb. n. 1551. *Lamarck. encycl.* 2. 301.
Araucaria. *Juſſ.* 413.

GENERIC CHARACTER.

* *Male.*

Cal. *Ament* ovate-cylindric, imbricate with very many woody ſhort *ſcales*, each terminated by a lanceolate, acute coriaceous *leaflet*, concave at bottom, narrower and recurved at top.
Perianth none.

Cor. none.

Stam. *Filaments* none, except the amentaceous ſcales. *Anthers* ten or twelve, heaped about each amentaceous ſcale, linear, grooved, the length of the ſcale, faſtened to the top of it, below the leaflet by the upper extremity, approximating and converging round the ſcale, ſeparating by the lower extremity when the ſcale is broken.

* *Female.*

Cal. *Ament* large, roundiſh ovate, cloſely imbricate with very many germs, reſembling ſcales.
Perianth none.

Cor. none.

Pist. *Germ* each wedge-form-oblong, ſubcompreſſed, contracted at the baſe into a point, with a broad, thick, callous termination. *Style* none. *Stigma* bivalve, the valves unequal; the inner very ſmall, obtuſe, the outer very large, broad at the baſe, thick, curved inwards above the inner one, terminated by a linear, acute, ſlender, aſcending ſtrap, almoſt the length of the germ, bent in at a right angle above the germ.

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[g] L'Heritier.

[h] Smith.

[i] L'Heritier.

[a] Rolander.

[b] Aublet.

Per. none.

Seeds very many, heaped into a roundiſh ſtrobile, imbricate; each oblong, ſubcylindric, towards the baſe obtuſely four-cornered, with a ſhort broad ſpatulate wing or ſtrap at the top, thickened at the edge, incurved, aſcending: the ſhell coriaceous, coloured, valveleſs; the kernel oblong, ſubangular at the baſe. *Receptacle* naked, villoſe, here and there alveolate.

ESSENTIAL CHARACTER.

Male. Calyx of the *ament* ſcales, terminated by a leaflet. *Cor.* none. *Anthers* ten or twelve without filaments.

Fem. *Cal.* Ament with many germs. *Cor.* none. *Stigma* bivalve, unequal. *Seeds* many, in a roundiſh ſtrobile.

SPECIES.

1. Dombeya Chilenſis.

Lamarck. encycl. vol. 2. p. 301.

Turbinate imbricate leaves, mucronated on one ſide: the branches quaternate, and cruciate.

DESCRIPTION.

This is a tree as yet very little known; a native of Chili, of a reſinous nature, in ſome reſpects allied to Protea; and alſo to the Pines in ſome particulars of its fructification. The trunk is ſtraight and of conſiderable height: the wood white, ſolid, and clothed with a kind of double bark. The boughs are covered with very numerous leaves, ſeſſile, oval, very pointed, entire, ſmooth and coriaceous: a little concave inwards, and convex outwards; they have a ſharp point, and are ranged on the branches in the manner of ſcales. The flowers are male and female, borne on different individuals, and hang in ſeſſile ſolitary catkins from the tops of the branches.

Dombeya L'Herit. See *Tourrettia.*

DONATIA. (*So named by Forſter from Vitaliano Donati of Padua, profeſſor of botany at Turin. He travelled into Egypt and Arabia, and died in his journey.*)

Forſt. gen. 5. *Lin. gen. Schreb. n.* 1716. *p.* 787. *Juſſ.* 300.

Claſſ. 3. 3. Triandria Trigynia.

GENERIC CHARACTER.

Cal. *Perianth* three-leaved: *leaflets* awl-ſhaped, ſhort, remote.

Cor. *Petals* nine (eight to ten), linear-oblong, twice as long as the calyx, ſpreading.

Stam. *Filaments* three, awl-ſhaped, the length of the calyx. *Anthers* ſubglobular, twin.

Pist. *Germ* inferior? *Styles* three, filiform, a little longer than the ſtamens. *Stigmas* bluntiſh.

Per.

Seeds

ESSENTIAL CHARACTER.

Cal. three-leaved. *Pet.* nine, twice as long as the calyx, linear-oblong. *Anthers* ſubglobular, twin.

SPECIES.

1. Donatia faſcicularis.

Forſt. gen. 10.

DESCRIPTION, &c.

This is a ſimple undivided plant, a finger's length, with imbricate leaves. It differs from Polycarpon in its habit, and having about nine petals to the corolla.

Donatia Loefl. See *Avicennia.*

Donax. See *Arundo.*

DORÆNA.

Lin. gen. Schreb. n. 264. *Thunb. nov. gen.* 3. & *jap.* 6. *Juſſ.* 420.

Claſſ. 5. 1. Pentandria Monogynia.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, five-cleft, ſhorter than the corolla: *diviſions* ovate, concave.

Cor. one-petalled, ſubcylindric-wheel-ſhaped; *border* five-cleft, ſegments ovate, obtuſe, erect.

Stam. *Filaments* very ſhort, ſo as to be ſcarcely any; inſerted into the tube of the corolla. *Anthers* oblong, ſubquadrangular, included.

Pist. *Germ* conic, ſmooth, ſuperior. *Style* filiform, the length of the corolla. *Stigma* truncate, emarginate.

Per. *Capſule* ovate, acute, one-celled.

Seeds very many.

ESSENTIAL CHARACTER.

Cor. five-cleft. *Stigma* emarginate. *Capſ.* one-celled.

SPECIES.

1. Doræna japonica.

Lin. ſyſt. 194. *Thunb. jap.* 84.

DESCRIPTION, &c.

A tree of about a fathom in height. Branches alternate, round, aſh-coloured, ſmooth, divaricate. Leaves alternate, petioled, oblong, acuminate, remotely and obſcurely ſerrate, nerved, ſmooth, ſpreading, the length of a finger: petioles ſemicylindric, grooved on the upper part, ſmooth, half an inch in length. Flowers in racemes, white, minute. Racemes axillary, ſcarcely half an inch long. Capſule the ſize of a pepper-corn.—Native of Japan *.]

Doria. See *Senecio, Solidago, Othonna.*

DORONICUM. (*Doronigi or Durungi; an Arabic name.*)

Lin. gen. n. 959. *Reich.* 1039. *Schreb.* 1297. *Gærtn. t.* 173. *Tourn.* 277. *Vaill. A. G.* 1720. *f.* 41. 14. *Juſſ.* 182. Bellidiaſtrum. *Mich.* 29.

Claſſ. 19. 2. Syngeneſia Polygamia Superflua.

Nat. order of *Compoſitæ Diſcoideæ.—Corymbiferæ.* Juſſ.

GENERIC CHARACTER.

Cal. *Common* with leaflets lance-ſubulate, about twenty in number, equal, upright, of a double ſeries, length generally of the ray of the corolla.

Cor. *Compound* rayed. *Corollules* hermaphrodite tubular, numerous, in the diſk. *Females* ligulate, of the number of calycular leaves, in the ray.

Proper of the hermaphrodite funnel-form: *border* five-cleft, patulous.

Female ligulate, lanceolate, three-toothed.

Stam. in the hermaphrodites: *Filaments* five, capillary, very ſhort. *Anther* cylindric, tubular.

Pist. in the hermaphrodites: *Germ* oblong. *Style* filiform, length of the ſtamens. *Stigma* emarginate. In the females: *Germ* oblong. *Style* filiform, length of the hermaphrodite. *Stigmas* two, reflex.

Per. none. *Calyx* ſlightly converging.

Seeds in the hermaphrodite ſolitary, obovate, furrowed, a little compreſſed. *Down* hairy.

In the *females* ſolitary, obovate, furrowed, a little compreſſed. *Down* none.

Rec. naked, flat.

ESSENTIAL CHARACTER.

Cal. ſcales in two rows equal, longer than the diſk. *Seeds* of the ray naked and deſtitute of down. *Down* to thoſe of the diſk ſimple. *Recept.* naked.

SPECIES.

1. Doronicum Pardalianches. *Great Leopard's-bane.*

Lin. ſpec. 1247. *ſyſt.* 768. *Reich.* 3. 835. *mat. med.* 187. *hort. cliff.* 411. *Gærtn. fruct.* 2. 458. *Hudſ. angl.* 650. *With.* 925. *Lightf. ſcot.* 485. *Hall. helv. n.* 88. *Scop. carn. n.* 1085. *Allion. pedem. n.* 747. *Krock. ſileſ. n.* 1421. *Jacqu. auſtr.* 4. *t.* 350. *Villars dauph.* 3. 205. *Mill. fig. t.* 128. *Berg. phyt.* 47. *Blackw. t.* 239.

D. maximum. *Ger. emac.* 762. *Raii hiſt.* 276.—auſtriacum. *Park. theat.* 321. 7.—fol. caulem amplexantibus. *Bauh. pin.* 185. *Camer. epit.* 823. *Mor. hiſt. ſ.* 7. *t.* 24. *f.* 4.

D. 7. auſtriacum 3. *Cluſ. hiſt.* 2. 19.

β. D. radice ſcorpii. *Bauh. pin.* 184. *Mor. f.* 1.

D. latifolium. *Cluſ. hiſt.* 2. 16.

D. vulgare. *Park. theat.* 319. *f.* 1. *Raii hiſt.* 274.

D. majus offic. *Ger.* 620. *f.* 1. *emac.* 759. *f.* 2.

γ. D. auſtriacum. *Jacqu. auſtr.* 2. *t.* 130.

Leaves cordate obtuſe toothletted; thoſe next the root petioled, on the ſtem embracing.

2. Doronicum plantagineum. *Plantain-leaved Leop.*

Lin. ſpec. 1247. *Reich.* 3. 836. *hort. cliff.* 411. *Gouan monſp.* 446. *Berg. phyt.* 71.

D. minus. *Dalech. hiſt.* 1202. *Park. theat.* 319. 2. *Ger.* 620. *f.* 2. *emac.* 759. *f.* 1. *Raii hiſt.* 277.

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* Thunberg.

D. plantaginis fol. *Bauh. pin.* 184. *Mor. t.* 24. *f.* 9.

β. D. pl. fol. luſitanicum. *Tournef. inſt.* 488.

Leaves ovate acute ſomewhat toothed, branches alternate.

3. Doronicum Bellidiaſtrum. *Daiſy-leaved Leop.*
Lin. ſpec. 1247. *Reich.* 3. 836. *hort. cliff.* 500. *Krock. ſileſ. n.* 1422. *Jacq. auſtr.* 4. *t.* 400. *Hall. helv. n.* 92. (Arnica). *Scop. carn. n.* 1074. (Aſter).

Bellidiaſtrum alpinum, &c. *Mich. gen.* 32. *t.* 29.

Bellis media. *Cluſ. hiſt.* 2. 44. *Camer. epit.* 654.—ſylveſtris, caule carens. *Bauh. pin.* 261. 6.

β. B. caule pedali, &c. fol. latis, fl. rubris & albis. *Mentz. pug. t.* 8.

Stem naked very ſimple one-flowered.

DESCRIPTIONS, *&c.*

1. Great Leopard's Bane has thick fleſhy roots, divided into many knots, ſending out ſtrong fleſhy fibres, which penetrate deep into the ground. Root-leaves heart-ſhaped, hairy, petioled: among theſe ariſe the flower-ſtalks, which are channelled and hairy, near three feet high, putting out one or two ſmaller ſtalks from the ſide; theſe grow erect, and have one or two heart-ſhaped leaves cloſely embracing the ſtalk; this and each branch is terminated by one large yellow flower. Theſe appear in may; and the ſeeds ripen in july.

[The ſcales of the calyx are about twenty-ſix. The florets of the ray are ſtreaked with green lines, and are from twenty-two or twenty-four to thirty in number; in the diſk are about 178. Seeds of the ray nearly triangular, and ſtreaked with ten lines: thoſe of the diſk roundiſh, hairy and crowned with a down which is ſlightly plumoſe. Receptacle convex and hairy. From the burſting of the anthers to the ripening of the ſeeds takes up the ſpace of one month[a]. The ſtem-leaves towards the baſe become narrower, and then again widen into ears claſping about the ſtem, ſo as to be in a manner appendicled. In the great ſmooth variety, they are obſcurely ſerrate, three or four inches broad, and near a ſpan in length; whereas in the ſmaller one they are ſcarcely half the length and breadth[b].

Native of France, Switzerland, Germany, Auſtria, Carniola, Hungary, Savoy, where I gathered it on M. Saleva, Piedmont. This is one of the plants which from the facility with which it propagates itſelf has lately eſcaped from the gardens to increaſe the Britiſh Flora. Mr. Lightfoot remarked it in Scotland, but always near houſes; and Dr. Stokes near Duplin houſe.

This plant has been ſtigmatiſed as poiſonous, ſeemingly without much reaſon. It had its name *Pardalianches* (παρδαλις, *a leopard,* and αγχω, *to ſtrangle*) from this ſuppoſed noxious quality. The famous Conrad Geſner however took two drams of the root without injury. Others on the contrary would perſuade us that it is an antidote to poiſon, but they are ſtill farther from the truth. It is not uſed in the preſent practice. Dr. Stokes informs us that two drams occaſioned a ſenſe of inflation in the ſtomach, and of general weakneſs, but that theſe ſymptoms were of ſhort duration. That it has been recommended in vertigo, epilepſy, and menſtrual obſtructions, but that theſe powers want the confirmation of a more accurate experiment[c].

As the Auſtrian plant differs from the common one chiefly in having a more woody root that ſpreads but little, it is no more than a variety[d].]

2. The leaves of Plaintain-leaved Leopard's Bane are indented on their edges towards their baſe, but their upper parts are entire. The ſtalks riſe about two feet high; each is terminated by a large yellow flower, like that of the preceding: they have two or three alternate, embracing leaves, not ſo hairy as thoſe of the former ſort. It flowers about the ſame time; and grows naturally in Germany, France, Spain, and Portugal.

[Theſe were both cultivated in 1597 by Gerarde.]

3. This has a perennial root, as well as the two preceding. The leaves are like thoſe of the common Daiſy, but longer, and not ſo broad. The flower grows on a naked ſtalk near a foot long, and the root ſeldom ſends out more than one ſtalk. The ray of the flower is white, and very like that of Common Daiſy; the diſk is yellow.

[Root-leaves many, gradually leſſening to the petiole, lanceolate or obovate, quite entire or toothed here and there, hirſute, thickiſh, pale green. Among theſe ariſe the ſcapes, half a foot or a ſpan in height, ſlender, hirſute, round, purpliſh, erect, one-flowered. Calyx ſmoothiſh, the length of the diſk of the flower; leaflets eighteen or twenty. Florets in the ray quite entire or with two teeth, ſpreading very much. Germ crowned only with a down, not with ſcales. Down of the ſeeds ſeſſile, plumoſe. Receptacle convex[e].—The ſeeds of the ray are downy in this[f].

On the Swiſs, Tyroleſe and Italian alps; in Auſtria, Carniola, Sileſia. I gathered it by the Bois de Batie near Geneva, april 22, 1779, in flower. Haller found it in the lower alps with a deep red flower. Cultivated by Mr. Miller, in 1759[g].] He received it from Verona.

PROPAGATION AND CULTURE.

1. This plant multiplies very faſt by its ſpreading roots, and if the ſeeds are permitted to ſcatter, they will produce plants wherever they happen to fall, ſo that it becomes a weed where it is once eſtabliſhed; it loves a moiſt ſoil and a ſhady ſituation.

2. The ſecond is equally hardy, and multiplies in as great plenty.

3. This is propagated by parting the roots, for the ſeeds do not ripen well in England. It muſt have a ſhady ſituation and a moiſt ſoil. The flowers do not make a much better appearance than thoſe of the common Daiſy, only they ſtand on much taller ſtalks.

Doronicum. See *Arnica, Rudbeckia, Senecio, Septas,* and *Tuſſilago.*

——— helveticum. See *Senecio Doronicum.*

DORSTENIA. (*So named by Plumier, from Theodorus Dorſtenius, a German phyſician, who publiſhed a hiſtory of plants, or Botanicon,* 1540.)
Lin. gen. n. 158. *Reich.* 166. *Schreb.* 209. *Plum.* 8. *Houſt. A. A.* 421. *t.* 12. *Juſſ.* 401.
Claſſ. 4. 1. Tetrandria Monogynia.
Nat. order of *Scabridæ.*—*Urticæ* Juſſ.

GENERIC CHARACTER.

Cal. *Receptacle common* one-leafed, flat, cornered, very large, covered by the receptacle, with very numerous floſcules inhabiting the diſk, very ſmall.
Perianth proper four-cornered, concave, imbedded in the receptacle and united with it.

Cor. none.

Stam. *Filaments* four, filiform, very ſhort. *Anthers* roundiſh.

Pist. *Germ* roundiſh. *Style* ſimple. *Stigma* obtuſe.

Per. none. *Receptacle common* becoming fleſhy.

Seeds ſolitary, roundiſh, acuminate.

Obs. *Thoſe who have opportunity of examining the living plant would do well to obſerve whether any other female floſcules are intermixed with the hermaphrodites, as in* Parietaria; *for* Dorſtenia *ſeems intermediate between* Ficus *and* Parietaria, *and as it were a Fig expanded.——Swartz has obſerved monoecous flowers.*

ESSENTIAL CHARACTER.

Recept. common one-leafed, fleſhy, in which ſolitary ſeeds neſtle.

SPECIES.

1. Dorſtenia Houſtoni.
Lin. ſpec. 176. *Reich.* 1. 341. *Houſt. philoſ. tranſ.* 421. *f.* 2. *Plenck, ic. t.* 103.

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[a] Lightfoot.
[b] Krocker.
[c] Withering's arrangem.
[d] Murr in ſyſt.
[e] Krocker.
[f] Haller.
[g] Hort. kew.

Scapes rooted, leaves heart-ſhaped angled acute, receptacles quadrangular.

2. Dorſtenia Contrajerva.
Lin. ſpec. 176. *Reich.* 342. *mat. med.* 53. *hort. cliff.* 32. *Houſt. phil. tranſ.* 421. *f.* 1. *Plum. gen.* 29. *ic.* 119. *Blackw. t.* 579. *Woodv. med. bot.* 140. *t.* 51. *Hern. mex.* 147. *Plenck, ic. t.* 67.
Drakena radix. *Cluſ. exot.* 83.
Cyperus longus odoratus peruanus. *Bauh. pin.* 14.
Scapes rooted, leaves pinnatifid-palmate ſerrate, receptacles quadrangular.

3. Dorſtenia Drakena.
Lin. ſpec. 127. *Reich.* 342. *Plenck, ic. t.* 102.
Scapes rooted, leaves pinnatifid-palmate quite entire, receptacles oval.

[4. Dorſtenia cauleſcens.
Lin. ſpec. 176. *Reich.* 342. *hort. cliff.* 32. *Plum. ſpec.* 10. *ic.* 120. *f.* 1.
Peduncles on a ſtem.

5. Dorſtenia lucida.
Forſt. fl. auſtr. n. 58.
Elatoſtema pedunculatum. *Forſt. ch. gen.* 106. *t.* 53. *n.* 1.
Cauleſcent, leaves obliquely ovate entire, even, peduncles in cymes axillary.

6. Dorſtenia pubeſcens.
Forſt. fl. auſtr. n. 59.
E. ſeſſile. *Forſt. ch. gen.* 106. *t.* 53. *n.* 2.
Cauleſcent, leaves obliquely ovate ſerrate pubeſcent, peduncles axillary bearing heads.

7. Dorſtenia cordifolia.
Swartz prodr. 34. *obſ.* 51. *Lamarck encycl.* 2. 317. 2.
Scapes rooting, leaves cordate ovate toothletted, receptacles orbiculate.

8. Dorſtenia chinenſis.
Lour. cochinch. 90.
Peduncles cauline, petioles three or five-leaved.]

DESCRIPTIONS, *&c.*

1. This ſort ſends out ſeveral angular heart-ſhaped leaves from the root, which have foot-ſtalks eight or nine inches in length and very ſlender; the leaves are about three inches and a half long, and almoſt four broad at their baſe, the two ears having two or three angles which are acute, and the middle of the leaves are extended and end in acute points like a halbert; theſe are ſmooth and of a lucid green; the foot-ſtalk which ſuſtains the placenta is nine inches long, and about half an inch ſquare, and the upper ſurface cloſely ſet with ſmall flowers.

Native of Campeachy in South America. Found there on rocky grounds by Dr. Houſtoun, and cultivated by Mr. Miller before 1733.

2. The ſecond ſends out ſeveral leaves from the root, which are about four inches long, and as much in breadth; theſe are deeply laciniated into five or ſeven obtuſe parts, ſtanding upon foot-ſtalks near four inches long; they are ſmooth, and of a deep green. The ſtalk ariſes from the root, and grows near four inches high, upon which the fleſhy placenta is vertically placed; this is of an oval form about one inch long, and three quarters broad. Upon the upper ſurface of this, the ſmall flowers are cloſely ſituated, the fleſhy part becoming an involucre to them; theſe are very ſmall, and ſcarce conſpicuous at a diſtance, being of an herbaceous colour.

[Native of New Spain, Mexico, Peru, the iſlands of Tobago and St. Vincent *.] Mr. Miller ſays that it was diſcovered by his ingenious friend Dr. William Houſtoun, near old Vera Cruz in New Spain.

3. The third ſort ſends out leaves of different forms; ſome of the lower leaves are heart-ſhaped, having a few indentures on their edges, and ending in acute points, but the larger leaves are deeply cut like the fingers on a hand, into ſix or ſeven acute ſegments. Theſe leaves are five inches long, and ſix broad in the middle; they are of a deep green, and ſtand upon long foot-ſtalks. The placenta is very thick and fleſhy, an inch and a half long, and three quarters broad, having four acute corners; theſe have a number of ſmall flowers, placed on the upper ſurface like the other ſpecies.

Linneus ſays it is a native of Vera Cruz; but Mr. Miller informs us that it was found in great plenty in the iſland of Tobago, by Mr. Robert Millar, ſurgeon. He alſo affirms, that the roots of all the three ſpecies are brought over indifferently, to be uſed in medicine and in dyeing; and that it was not known what the plant was, the roots of which were imported, and had been long uſed in medicine, until Dr. Houſtoun informed us; for although father Plumier had diſcovered one ſpecies, and had given the name of Dorſtenia to it, yet he ſeems not to have known, that the Contrayerva was the root of that plant.

[4. This appears to be a ſmall plant, with leaves proceeding irregularly from the ſtem, which is ſhort; they are ovate-acute and pretty ſtrongly dentated at the edges. The male flowers are collected into little heads, and the females into a kind of ſharply lobed or irregular flattiſh heads. The leaves ſtand on remarkably long foot-ſtalks [b].

5, 6. Theſe are natives of the Society Iſles. Forſter, ſuppoſing them to be of a different genus from this, named them Elatoſtema, from ελατος elaſtic, and στημα a ſtamen; becauſe the ſtamens are elaſtic.

7. Receptacle plano-convex, with a crenate dotted margin, and fleſhy. Diſk a little concave. Male flowers in the diſk towards the ray. Calyxes immerſed in the receptacle, or four-toothed holes. Filaments two, three, or four ſhort; with twin anthers. Flowers in the middle of the diſk female: calyxes immerſed, or four-toothed, four-cornered holes. Germ ovate: ſtyle bifid: ſtigmas reflex. When the germ is ripe it is concealed within the receptacle, and opens into two parts, dropping the ſeed, which is roundiſh. It is clearly allied to Urtica and Parietaria.

Native of Jamaica and St. Domingo [c].

8. Root fuſiform, three inches long, white within and without, fleſhy, aromatic. Stem perennial, ſuberect, round, ſimple, whitiſh. Leaves ternate or quinate, lanceolate, quite entire, ſmooth, on a long common petiole. Receptacle of the flowers lateral, fleſhy, ſuboval, with many florets put forth at the top: the calyx is funnel-form, and three-toothed.

Native of China in the northern provinces; and called there *Pechi* and *Bach-chi*. The root is aromatic, and is uſed in medicine [d].]

PROPAGATION AND CULTURE.

It will be difficult to obtain theſe plants, becauſe the ſeeds are ſeldom to be found good; nor will they grow, if they are kept long out of the ground; ſo that the only ſure method to obtain them is, to have the roots taken up at the time when their leaves begin to decay, and planted pretty cloſe in boxes of earth, which may be brought very ſafe to England, provided they are preſerved from ſalt water, and are not over-watered with freſh water in their paſſage. When the plants arrive, they ſhould be tranſplanted each into a ſeparate pot filled with freſh earth, and plunged into the bark-ſtove, which ſhould be kept of a moderate heat; and the plants muſt be frequently refreſhed with water during the ſummer ſeaſon; but in winter, when the leaves are decayed, it ſhould be given to them more ſparingly. With this management theſe plants may not only be maintained, but may alſo be increaſed by parting their roots in the ſpring, before the plants put out their leaves.

[DORTMANNA. See *Lobelia.*]

DORYCNIUM. See [*Anthyllis, Aſpalathus, Convolvulus, Coronilla,*] *Lotus, Pſoralea.*

DOVE'S-FOOT Crane's-bill. See *Geranium.*

[DOUGLASSIA. (*So named in honour of James Douglas, M. D.*)
Lin. gen. Schreb. n. 1761. *p.* 809. Aiouea. *Aubl. t.* 120. *Juſſ.* 80.
Claſſ. 18. 4. Polyadelphia Polyandria.

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* Linn.

[b] Plumier.

[c] Swartz.

[d] Loureiro.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, turbinate, half-ſix-cleft, permanent: *ſegments* ovate, acute, coloured.
Cor. none.
Nectaries ſix, ovate on the outſide with two oblong pits, on the inſide convex, anther-bearing; terminated by two glands, convex without, concave within; ending at bottom in a capillary pedicel, ſhorter than the calyx, inſerted at the baſe of the ſegments, with a villoſe gland on each ſide at the inſertion of it.
Stam. *Filaments* none. *Anthers* very many, minute, one-celled, with the valve opening at the baſe.
Pist. *Germ* ovate, ſuperior. *Style* filiform, the length of the ſtamens. *Stigma* ſix-cleft.
Per. *Berry* ovate, acute, one-celled.
Seed ſingle, with a brittle ſhell.

Obs. *It is allied to* Poroſtema. *The fructification is extremely ſingular. The fruit aromatic.*

ESSENTIAL CHARACTER.

Cal. half-ſix-cleft. *Cor.* none. *Nect.* ſix. *Filaments* none. *Germ* ſuperior. *Stigma* ſix-cleft. *Berry* ovate, one-celled. *Seed* one, with a brittle ſhell.

SPECIES.

1. Douglaſſia Guianenſis. *Guiana Douglaſſia.*
With alternate, lanceolate leaves.

DESCRIPTION, &c.

1. This, the only ſpecies, is a middling ſized ſhrub, growing in Guiana; it is about five feet high, and branching at top: its diameter five or ſix inches: the wood white and compact. The branches are ſubdivided into ſmaller ones; the flowers grow at their extremities in a kind of ſtraggling cluſters, and are ſmall and yellowiſh.

Douglassia Houſt. See *Volkameria.*

DRABA. (*From* δραβη, *acrid,* Lin. *It is a name of Dioſcorides.*)
Engl. *Whitlow-graſs.* Fr. *Drave.*
Lin. gen. n. 800. *Reich.* 864. *Schreb.* 1076. *Gærtn. t.* 141. *Dill. gen.* 122. *Juſſ.* 240.
Claſſ. 15. 1. Tetradynamia Siliculoſa.
Nat. order of *Siliquoſæ* or *Cruciformes. Cruciferæ* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* four-leaved; *leaflets* ovate, concave, from erect ſpreading; deciduous.
Cor. four-petalled, cruciform. *Petals* oblong, ſomewhat ſpreading; with very ſmall claws.
Stam. *Filaments* ſix, length of the calyx: of theſe the four oppoſite ones ſomewhat longer, from erect ſpreading. *Anthers* ſimple.
Pist. *Germ* ovate. *Style* ſcarce any. *Stigma* headed, flat.
Per. *Silicle* elliptic-oblong, compreſſed, entire, deſtitute of ſtyle, two-celled; *diſſepiment* parallel with the valves. *Valves* plano-concave.
Seeds ſeveral, ſmall, roundiſh.

Obs. *In ſome ſpecies the petals are two-parted to the very claws, in others only emarginate at the tip, in others perfectly entire.*

The eſſential character conſiſts in the ſilicle, which is of an oval-oblong compreſſed form, almoſt deſtitute of ſtyle: hence it is eaſily diſtinguiſhed from Alyſſum, Subularia, *and* Lunaria.

ESSENTIAL CHARACTER.

Silicle entire, oval-oblong; valves flattiſh, parallel to the diſſepiment. *Style* none.

SPECIES.

1. Draba aizoides. *Hairy-leaved Alpine Whitlow-graſs.*
Lin. ſyſt. 585. *Reich.* 3. 212. *mant.* 91. *Gouan illuſtr.* 39. *Jacqu. auſtr.* 2. 55. *t.* 192. *Hall. helv. n.* 498. *Villars dauph.* 3. 280. *Krock. ſileſ. n.* 1013. *Curt. mag.* 170.
D. alpina. *Jacqu. vind.* 254. *Scop. carn. n.* 786. *Crantz. auſtr.* 14. *crucif.* 95. *n.* 2. *Mill. dict. n.* 1. *Raii hiſt.* 789. *n.* 3. (Paronychia).
Alyſſum alpinum hirſutum luteum. *Mill. dict. edit.* 1. *fol. n.* 3. *fig. t.* 20. *f.* 2. *Bauh. pin.* 284. *n.* 11. (Sedum).
Leucoium luteum aizoides montanum. *Col. ecphr.* 2. 62.
Scape naked ſimple, leaves enſiform keeled ciliate.

[2. Draba ciliaris.
Lin. ſyſt. 585. *Reich.* 213. *mant.* 91. *Ger. prov.* 344. *n.* 2. *t.* 13. *f.* 1.
Stem almoſt naked, leaves linear ciliate about the edge and along the keel, petals entire.

3. Draba alpina.
Lin. ſpec. 896. *ſyſt.* 585. *Reich.* 213. *fl. lapp. n.* 255. *ſuec. n.* 570. *hort. cliff.* 333. *Fl. dan. t.* 56. *Gouan. illuſt.* 39. *not.*
Scape naked ſimple, leaves lanceolate quite entire; petals emarginate.]

4. Draba verna. *Common* or *Spring Whitlow-graſs.*
Lin. ſpec. 896. *Reich.* 213. *hort. cliff.* 333. *fl. ſuec. n.* 567. *Gærtn. fruct.* 2. 284. *Hudſ. angl.* 278. *With.* 668. *Curt. lond.* 1. 49. *abr. t.* 9. *Lightf. ſcot.* 337. *Relh. cant. n.* 470. *Hall. helv. n.* 496. *Scop. carn. n.* 792. *Neck. gallob.* 273. *Gunn. norv. n.* 2. *Pollich. pal. n.* 604. *Krock. ſileſ. n.* 1014. *vol.* 2. *t.* 28. *Berg. phyt. t.* 13. *Villars dauph.* 3. 281.
Burſa paſtoris minor loculo oblongo. *Bauh. pin.* 108. *Mor. ſ.* 3. *t.* 20. *f.* 6. *Bauh. hiſt.* 2. 937. 2.
Alyſſon vulgare, polygoni fol. caule nudo. *Segu. veron.* 1. 575. *t.* 4. *f.* 3.
Alſine minima. *Tabern.* 708.
Piloſella minor. *Thal. harc.* 84. *t.* 7. *f.* E.
Paronychia vulgaris. *Dod. pempt.* 112. *Ger.* 499. 1, 2. *emac.* 624. 1. *Raii hiſt.* 789. *ſyn.* 292.—alſines fol. *Park. theat.* 556. *f.* 3. *Pet. brit. t.* 48. *f.* 6, 7. *Lob. ic.* 1. 469. 1.
Scapes naked, leaves ſomewhat ſerrate, often very entire, petals divided.

5. Draba pyrenaica.
Lin. ſpec. 896. *ſyſt.* 585. *Reich.* 214. *Scop. carn. n.* 790. *Crantz. auſtr.* 13. *t.* 1. *f.* 5. *crucif.* 95. *t.* 1. *f.* 5. (D. rubra). *Ger. prov.* 344. *n.* 4. *Jacqu. vind.* 255. *auſtr.* 5. *t.* 228. *Allion. pedem. n.* 894. *t.* 8. *f.* 1. *Villars dauph.* 3. 282. *Fl. dan. t.* 143.
Alyſſum pyrenaicum. *Tournef. inſt.* 217.
Scape naked, leaves wedge-ſhaped palmate three-lobed.

6. Draba muralis. *Wall Whitlow-graſs.*
Lin. ſpec. 897. *ſyſt.* 585. *Reich.* 214. *fl. ſuec. n.* 569. *mant.* 424. *Hudſ. angl.* 278. *Crantz. crucif.* 95. *n.* 4. *With.* 669. *Hall. helv. n.* 499. *Neck. gallob.* 273. *Pollich pal. n.* 605. *Krock. ſileſ. n.* 1015. *Villars dauph.* 3. 283. *Ger. prov.* 345. *n.* 5. *Thunb. jap.* 259. *Barrel. ic.* 816. (Myagroides).
Burſa paſtoris major loculo oblongo. *Bauh. pin.* 108. *prodr. t.* 50. *Raii hiſt.* 790. *ſyn.* 292. *Pet. brit.* 48. 5. *Mor. ſ.* 3. *t.* 20. *f.* 5.——ſublongo loculo. *Bauh. hiſt.* 2. 938. *f.* 939. 1.
Thlaſpi veronicæ fol. *Park. theat.* 843. 13.
Alyſſon veron. fol. *Tournef. inſt.* 217. *Garid. aix.* 27.
β. Draba nemoroſa. *Lin. ſpec. ed.* 1. 643. *Allion. pedem. n.* 897.
D. minima muralis diſcoides. *Col. ecphr.* 1. 274. *t.* 272.
Stem branched, leaves ovate, ſeſſile, toothed.

[7. Draba hirta.
Lin. ſpec. 897. *Reich.* 215. *Hall. helv. n.* 497. *Allion. pedem. n.* 896. *Fl. dan. t.* 142. *Villars dauph.* 3. 282. *Krock. ſileſ. n.* 1016. *Ger. prov.* 345. *n.* 6. *Gunn. norv. n.* 697.
D. ſtellata. *Jacqu. vind.* 256. *t.* 4. *f.* 3. *obſ.* 1. 48. *auſt.* 5. *t.* 432.
D. auſtriaca. *Crantz. auſtr.* 12. *t.* 1. *f.* 4.—hirſuta. *crucif.* 95. *n.* 5. *t.* 1. *f.* 4.
Burſa paſtoris alpina hirſuta. *Bauh. pin.* 108. *prodr. t.* 51.
Alyſſon alpinum polygoni folio incano. *Tournef. inſt.* 217.
β. D. norvegica. *Fl. dan. t.* 143. *Gunn. norv. n.* 846.
Scape one-leafed, leaves ſubhirſute, ſilicles oblique pedicelled.

8. Draba fladnizenſis.
Lin. ſyſt. 585. *Jacqu. miſc.* 1. 147. *t.* 17. *f.* 1.
Scape two-leaved, leaves ſmooth ciliate, ſilicles ſtraight pedicelled.]

9. Draba incana. *Hoary Whitlow-graſs.*
Lin. ſpec. 897. *Reich.* 215. *fl. lapp. n.* 254. *ſuec. n.* 568. *hort. cliff.* 334. *Hudſ. angl.* 279. *With.* 669. *Lightf. ſcot.* 338. *Gunn. norv. n.* 3. *Fl. dan. t.* 130.
Leucoium ſ. Lunaria vaſculo oblongo intorto. *Pluk. alm. t.* 42. *f.* 1.
Lun. contorta major. *Petiv. brit. t.* 48. *f.* 3. *Raii ſyn.* 291.
β. Paronychiæ ſimilis ſed major, perennis alpina repens. *Raii ſyn.* 292. *Petiv. f.* 4.
Stem-leaves numerous hoary, ſilicles oblong oblique ſubſeſſile.

DESCRIPTIONS, *&c.*

1. [It very much reſembles *D. alpina*, from which however it differs, in the leaves being even, linear, keeled, ciliate; not oval-oblong, rough-haired, without any keel. It differs from *D. ciliaris* in having the root-leaves forming a cloſe tuft, giving it the air of a Sedum; the keel even; not alternate leaves on the branches ſpreading, and a ciliate keel. The flowers alſo are yellow, as in *D. alpina*, not white [a].

Root perennial. Stem three inches high. Petals entire. Silicle hairy, rough, ovate, ſharp at both ends, ending in a long ſtyle [b]; four lines in length; the cells having ſix to eight ſeeds, which are round and flatted [c].

The leaves are extremely ſmooth, ſhining green, ſet round with ſtiff hairs regularly diſpoſed, ſome only two lines long and half a line broad; others an inch long and a line broad. Scape even, one and two inches high, or more. Flowers in a ſort of corymb, which becomes a raceme when the fruit is ripe. Calyx ſmooth; leaflets fleſhy, green, commonly coloured on the edge, which is membranaceous. Petals yellow, uſually entire. Silicle a line and half wide, five lines long with the point, green, ſometimes pubeſcent with hairs preſſed cloſe, but more frequently ſmooth or netted-veined [d].

It is well adapted to rockwork, and is a pretty plant with a pleaſant ſmell.

Native of the mountains of France, Switzerland, Savoy, Auſtria, Carniola, Sileſia, *&c.* I gathered it on M. Saleve near Geneva, april 13, 1779; where Ray alſo mentions that it grows. In our gardens it flowers ſo early as february.—Cultivated in 1731, by Mr. Miller [e].

2. Root perennial. Root-leaves forming a cloſe tuft, imbricate, crowded, even, keeled, diſtinctly ciliate. Petals obovate, white. Style longer than the ſtamens. It differs from the foregoing, in the leaves being narrower and ſmooth, and the petals not in the leaſt emarginate. In a ſtate of cultivation it branches out with remote leaves [f].

Gerard (in fl. Gallo-Provinc.) thus deſcribes it. Stem flaccid, ſlender, diffuſed, diaphanous, half a palm in height, branched at bottom, naked at top. Leaves elegantly ciliate, forming roſes next the ground, and gradually becoming more remote higher up, ſeſſile, keeled beneath, ending in a ſharpiſh point. Peduncle naked, the length of the ſtem, filiform, few-flowered. Flowers terminating, ſubſeſſile: leaflets of the calyx erect, almoſt equal, lanceolate, obtuſe, green on the outſide, yellowiſh on the inſide. Petals obovate, twice as long as the calyx, with claws the length of the calyx. Filaments erect, briſtle-ſhaped, almoſt equal, the length of the petals: anthers oblong, pale. Germ ovate: ſtyle longer than the ſtamens.

Native of Provence, in dry rocky places.

3. Perennial. All the root-leaves ſpreading, ſprinkled with hairs on the upper ſurface, diſpoſed as in *Androſace*; by no means imbricate, linear, ciliate, or ſmooth on the upper ſurface. Stem leafleſs, with a few hairs ſcattered about it; not one-leafed or ſmooth. Petals ſlightly emarginate, not entire [g].

Gouan thus diſtinguiſhes this from the firſt ſort. It has fewer leaves, ovate, a little longer, very often toothed towards the end, and rough with hairs. Stem often naked, but ſometimes it has a leaf or two on it; this alſo is rough with hairs. Flowers ſubracemed, at firſt corymbed. Calyx hairy; the leaflets membranaceous and coloured at the edge, as in D. aizoides. Petals a little emarginate. The leaves are repreſented quite entire in Oeder's figure, which is otherwiſe a good one.

Native of the Alps of Europe.

4. *Root* annual. *Stems* about three inches high, one to five, or more from the ſame root in a rich ſoil; ſmooth after flowering, but hairy when young. *Leaves* ovate-lanceolate, narrower at the baſe; ſome entire, others ſubſerrate, ſpreading on the ground, ſomewhat ſcabrous, hirſute, ſome of the hairs bifurcate, others trifurcate. *Peduncles* alternate, bearing one flower only. Leaflets of the *calyx* obtuſe and ſomewhat hairy. *Corolla* petals white, twice the length of the calyx, two-parted. *Filaments* bending forward; the four longer ones the height of the piſtil. It is difficult to find the full complement of ſtamens when the flower is fully expanded, as they drop when the germ begins to enlarge. *Silicle* terminated by a ſhort blunt point. *Seeds* ovate, brown, fixed to the edge of the partition [h]: from three to ſix in a cell, according to Scopoli, but ſometimes as many as twenty-four [i]. By theſe it propagates itſelf prodigiouſly, and is a weed hardly to be eradicated in dry paſtures, gravel-walks of gardens, &c.

Linneus obſerves that the flowers hang down in the night and in wet weather: that in Smoland they ſow Rie when this plant is in bloſſom; and that in dry ſoils whole fields are covered with the flowers early in the ſpring. With us it is common on walls, dry banks, fields, and paſtures, flowering in march and april, or earlier if the weather be mild.—In ſome countries abundance of this little plant is ſuppoſed to prognoſticate dearneſs of corn; which may have ſome foundation, as a wet ſeaſon produces a great crop of this little weed, which according to ſome is agreeable to ſheep [k].

Gerarde calls it Whiteblowe, or Whitlowe-graſſe, or Naile woort.

This ſmall plant may ſerve as an index of the difference of climates; for in Sweden it flowers in the month of april; in Germany a month earlier; in England, Holland, and France in february; whilſt in Sicily it flowers all the winter.]

5. This is a perennial plant, ſeldom more than two inches high; it has a ſhrubby ſtalk, dividing into many ſmall heads. Leaves ſmall; the lower ones have five ſhort narrow lobes, the upper have but three. The flowers come out in cluſters, ſitting cloſe to the leaves: they are of a bright purple colour, and appear early in the ſpring.

[Root creeping, putting out erect branching ſhoots, which at the end bear thick ſhining ſtiffiſh ſpreading leaves, half-three-lobed, narrowed at the baſe into a ſort of half-embracing erect petiole, marked with three lines; the lobes ſpreading oblong ſharpiſh, ciliate at the tip and interruptedly on the edge. Scape round erect ſcarce half an inch high, from the centre of the branchlet, five-flowered; and from the ſame point, at the ſides of it, ſpring two other branchlets deſtined to bear flowers the following year. The proper peduncles higher than the ſcape form a corymb. Calyx greeniſh purple. Petals roundiſh, large, flat, ſpreading much, quite entire, veined, purple, on ſhort claws. Filaments purple. There is a roundiſh, large, bifid gland on each ſide within the ſhorter ſtamens. Style almoſt the length of the germ. Silicle obovate, compreſſed at top and bottom different ways. Seeds two [l].

Native of the mountains of Switzerland, in the

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[a] Linn. mant.
[b] Haller.
[c] Scopoli.
[d] Gouan.
[e] Hort. kew.
[f] Linn. mant.
[g] Linn. ſyſt.
[h] Curtis and Withering.
[i] Gærtner.
[k] Krocker.
[l] Jacqu. vind.

Canton of Appenzel, Provence, Carniola, Auſtria, and Piedmont: flowering in may.

6. Root annual. Root-leaves entire at the baſe, toothed upwards. Leaves and ſtem hairy. Stem-leaves rather heart-ſhaped. Fruit-bearing peduncles horizontal, longer than the ſilicles. Corollas pale yellow or white, with the petals ſlightly emarginate. Silicles exactly elliptic, ending in a ſhort blunt knob. Seeds reddiſh brown[m].]

It riſes with an upright branching ſtalk about ten inches high. Leaves heart-ſhaped, indented, embracing. The ſtalks are terminated by looſe ſpikes of white flowers, which appear the beginning of may.

[Native of Sweden, Switzerland, Germany, South of France, Italy, in fiſſures of rocks. Mr. Ray found it near Montpellier, and between Lucca and Piſa, in hedges. With us, in Derbyſhire, Yorkſhire, and Weſtmoreland. Common about Malham.

β. The *wood* variety being ſowed with the *muralis* in a garden, they became ſo alike as not to be diſtinguiſhed by any means, the yellow flowers becoming white[n].

7. Reſembles *D. incana* very much, but the ſtem is naked with a ſingle lanceolate leaf in the middle of it. Petals white emarginate. Silicles more ſmooth and ovate; with the peduncles only half their length; but ſubſeſſile[o].

Perennial. Root-leaves elliptic, ſmooth, ciliate, tongue-ſhaped: ſtem-leaves ſeſſile ovate-acuminate, having only two teeth. Silicles ſmooth, like thoſe of *D. verna*. It varies in the leaves, which are ſometimes ſmooth and ciliate only about the edge, or hairy all over and hoary; ſometimes toothed, at others quite entire[p].

It differs from *D. nemoroſa* (n. 6. β.) in having a perennial root, entire leaves, and white flowers[q].

It has very much the air of *D. verna*; the leaves ſhorter, covered with a ſhort down, and ſcarcely toothed. Oftentimes, but not always, there is one leaf on the ſtem, and ſometimes two. Scapes flexuoſe, three inches high and more. Peduncles ſhorter than in the common ſort. Calyx ſubhirſute, browniſh. Petals entire. Silicles narrower than in *D. verna*, otherwiſe like them, terminated by the ſhort ſtyle with a headed ſtigma. Seeds ovate, acuminate[r].

Native of Lapland, Denmark, Provence, Switzerland, Sileſia, Auſtria, Piedmont, in the fiſſures of rocks: flowering in may. Mr. Dickſon has found the Draba ſtellata or hirta of Jacquin in Scotland, on Ben Lawers.

Jacquin, in his Obſervationes, ſays that his *ſtellata* is the *hirta* of Linneus, but that in the Auſtrian plants the ſilicles are uſually ſtraight, very ſeldom oblique. Though he gave up his *ſtellata* as a ſpecies, yet it ſeems to be different from Linneus's *hirta*[s]. He thus deſcribes it.—This little plant has the habit and ſize of *D. pyrenaica*. Leaves obverſely lanceolate, blunt, attenuated at the baſe into a ſort of petiole half-embracing the ſtalk; they are thick, either quite entire, or with a ſingle tooth on each ſide, ſeldom more, ciliate and having on both ſides white hairs radiating like a ſtar at top, more than in *Leontodon hiſpidum*. Scape round, erect, with ſimilar hairs at bottom, but more thinly diſpoſed, at top more naked, there is a ſingle ſeſſile ſubovate toothed leaf on it, ſometimes two, and ſometimes ſo low as to be loſt among the root-leaves. Corymb terminating, made up of about ſeven longiſh peduncles, the lower ones not reaching above the ſcape. Calyx yellowiſh. Petals milk-white, roundiſh-obovate, entire, flat, very wide and ſpreading, twice as long as the calyx, on a very ſhort claw. Stamens whitiſh, the length of the calyx. Gland within each ſhorter filament. Style ſhort. Silicle oblong[t].

8. Root fuſiform, perennial. Root-leaves forming roſes, lanceolate, bluntiſh, quite entire, flat, ſhining, ſmooth, firm, ciliate with diſtant hairs. Stems from the centre of the roſes, erect, undivided, ſlender, an inch high, naked; they have one or two ſeſſile, lanceolate, ſmooth, entire leaves on them, villoſe-ciliate on the edge. Raceme terminating, few-flowered. Flowers from five to eight, pedicelled. Calycine leaflets naked, half the length of the petals, green. Petals ſnowy-white, ſlightly emarginate. Filaments awl-ſhaped, white, with ovate, yellow anthers. Silicle naked. It has no ſcent.

Native of Carinthia[u].

9. Root biennial. Root-leaves very numerous, ſpreading like the flower of a roſe, lanceolate, tomentoſe and ſomewhat hairy, entire, acute. Stem a hand in height, ſtraight and ſtiff, hoary, cloathed with many leaves (frequently more than thirty), very like the root-leaves, but ſhorter, ſo that the uppermoſt are ovate, ſeſſile, and have a few teeth; on the lower part of the ſtem they are more crowded. Flowers in a ſmall terminating corymb: petals white, obſcurely emarginate. Silicles in a raceme, erect, ovate-oblong, oblique, twiſted in a direction contrary to the ſun's diurnal motion, compreſſed, naked; peduncles hoary, three times ſhorter than the ſilicles, ſtiff, approaching to the ſtem. It flowers with the Anemone[x].

Stems from five or ſix to nine inches in height, ſlightly tomentoſe, ſimple moſt commonly, but frequently branched, crooked.]

Mr. Miller ſays, that the upper part of the ſtalk puts out two or three ſhort branches, which are almoſt naked of leaves, as is alſo the upper part of the ſtalk.

[Leaves oval-lanceolate, a little hairy, the lower ſlightly the upper deeply toothed. Peduncles nearly as long as the ſilicles, which are lanceolate, ſmooth, twiſted, terminated by the blunt ſtigma[y].

Native of Lapland, Sweden, Denmark, Norway, Britain, as in Weſtmoreland, Yorkſhire about Settle, and near the ſummit of Ingleborough; Scotland, as in Iſla, Skye, &c. Wales in Caernarvonſhire. It flowers in may and june.]

PROPAGATION AND CULTURE.

1, 2, 3, 5. Theſe plants are eaſily propagated by parting the heads in autumn; for they ſhoot up to flower very early in the ſpring. They will thrive and flower annually, in a moiſt ſoil, and ſhady ſituation; and require no other culture but to be kept clean from weeds.

With reſpect to the reſt, if the ſeeds are ſown in autumn in a ſhady border, the plants will come up in the ſpring; or where the ſeeds are permitted to ſcatter, the plants will riſe without any trouble.

[Some of the ſpecies are proper to adorn rock-work, and they all proſper beſt in that ſituation.

DRABA. See *Arabis*, *Cochlearia*, *Iberis*, *Lepidium*, *Lobelia*, *Siſymbrium*.

DRACÆNA. (Δρακαινα, *the female of* δρακων, *a dragon.)*

Lin. gen. Reich. n. 458. *Schreb.* 574. Auth. Vandellio. *Gærtn.* 16. *Juſſ.* 40. Oederia and Stoerckia. *Crantz.* Dianella. *Lamarck* and *Juſſ.* 41.

Claſſ. 6. 1. Hexandria Monogynia.

Nat. order of *Sarmentaceæ.—Aſparagi* Juſſ.

GENERIC CHARACTER.

CAL. none.

COR. *Petals* ſix, oblong, ſomewhat upright, equal, cohering by the claws.

STAM. *Filaments* ſix, inſerted into the claws, ſubulate, thicker in the middle, membranaceous at the baſe, length ſcarcely of the corolla. *Anthers* oblong, incumbent.

PIST. *Germ* ovate, ſix-ſtriated. *Style* filiform, length of the ſtamens. *Stigma* three-cleft, obtuſe.

PER. *Berry* ovate, ſix-furrowed, three-celled.

SEEDS ſolitary, ovate-oblong, incurved at the tip.

OBS. *The character is almoſt that of* Aſparagus, *the habit different.*

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[m] Linn. With. Stokes, Woodw. Mſs.

[n] Linn. ſuec.

[o] Linn. ſpec.

[p] Allioni.

[q] Ger. prov.

[r] Haller.

[s] Dickſon in Linn. tranſ. 2. 288.

[t] Enum. vind. obſ. p. 256.

[u] Jacqu. miſc.

[x] Linn. ſpec.

[y] Woodw. Mſs.

ESSENTIAL CHARACTER.

Cor. ſix-parted, erect. *Filaments* ſomewhat thicker in the middle. *Berry* three-celled, one-ſeeded.

SPECIES.

1. 1. Dracæna Draco. *Dragon Tree.*
Lin. ſyſt. 333. *Reich.* 2. 71. *Plenck, ic. t.* 268.
Aſparagus Draco. *Lin. ſpec.* 451. *Vandell. monogr.*]
Palma Draco. *Mill. dict. n.* 11.
[Draco arbor. *Bauh. pin.* 505. *Cluſ. hiſt.* 1. 1. *Blackw. t.* 358. *Park. theat.* 1531. *Ger.* 1339. *emac.* 1523. *Raii hiſt.* 1598.
Arboreous: leaves ſomewhat fleſhy with a thorny end.

2. Dracæna ferrea. *Purple Dracæna.*
Lin. ſyſt. 334. *Reich.* 2. 72. *Oſb. it.* 251. *engl. edit.* 2. 14. *Lour. cochinch.* 196. *Rumph. amb.* 4. 79. *t.* 34. *f.* 2. (Terminalis rubra).
Arboreous: leaves lanceolate acute.

3. Dracæna ſtriata.
Lin. ſyſt. 334. *ſuppl.* 204.
Fruteſcent; cauleſcent, erect; leaves lanceolate obliquely ſickle-form ſtriated; ſtem flexuoſe.

4. Dracæna terminalis.
Lin. ſyſt. 334. *Reich.* 72.
Aſparagus terminalis. *Lin. ſpec.* 450.
Terminalis. *Rumph. amb.* 4. 79. *t.* 34.
Herbaceous, cauleſcent; leaves lanceolate.

5. Dracæna enſifolia. *Sword-leaved Dracæna.*
Lin. ſyſt. 334. *Reich.* 72. *mant.* 63. *Gærtn. fruct.* 57. *t.* 16. *Lour. cochinch.* 197.
Dianella nemoroſa. *Lamarck encycl.* 2. 276.
Gladiolus odoratus indicus. *Rumph. amb.* 5. 185. *t.* 73.]
G. indicus. *Mill. dict. n.* 4.
[*Herbaceous, ſubcauleſcent, leaves enſiform.*

6. Dracæna undulata.
Lin. ſyſt. 334. *ſuppl.* 203.
Herbaceous, cauleſcent, erect; leaves ovate acute, many-nerved; flowers axillary, peduncled.

7. Dracæna Medeoloides.
Lin. ſyſt. 334. *ſuppl.* 203.
Herbaceous, twining; leaves ovate, nerved.

8. Dracæna erecta.
Lin. ſyſt. 334. *ſuppl.* 204.
Herbaceous, cauleſcent, erect; leaves lanceolate, ſubulate, ſeſſile.

9. Dracæna volubilis.
Lin. ſyſt. 334. *ſuppl.* 204.
Herbaceous, twining; leaves lanceolate.

10. Dracæna graminifolia.
Lin. ſyſt. 334. *Reich.* 72.
Aſparagus graminifolius. *Lin. ſpec.* 450.
Herbaceous, ſtemleſs; leaves linear.

11. Dracæna marginata. *Aloe-leaved Dracæna.*
Ait. hort. kew. 1. 454.
Aloe purpurea. *Lamarck encycl.* 1. 85.
Shrubby; leaves tooth-ſpiny; racemes axillary, berries many-ſeeded.

12. Dracæna borealis. *Oval-leaved Dracæna.*
Ait. hort. kew. 1. 454. *t.* 6.
Herbaceous, ſubcauleſcent; leaves elliptic.

13. Dracæna indiviſa.
Forſt. eſcul. n. 33. *fl. auſtr. n.* 150.
Arboreous; leaves enſiform, acute, raceme (lateral?) compound.

14. Dracæna auſtralis.
Forſt. fl. auſtr. n. 151.
Arboreous; leaves enſiform, acute; raceme terminating, erect, ſuperdecompound.]

DESCRIPTIONS, *&c.*

1. This riſes with a thick trunk nearly equal in ſize the whole length; the inner part very pithy, next to this a circle of ſtrong fibres, and the outſide ſoft; height twelve or fourteen feet, nearly of the ſame diameter the whole length, which is rarely more than eight or ten inches; circular marks or rings are left the whole length, where the leaves have fallen off. The top ſuſtains a large head of theſe, coming out ſingly all round it; they are ſhaped like thoſe of the common Iris, but are much longer, being often four or five feet in length, and an inch and half broad at their baſe, where they embrace the trunk; they leſſen gradually and terminate in a point: theſe leaves are pliable, and hang down; they are entire, of a deep green, ſmooth on both ſurfaces. It has the habit of the Palms.

[The peduncles are furniſhed with a joint.—Crantz has made two genera out of this ſpecies, under the names of Oedera and Störckia[a].

Native of the Eaſt Indies.]

Mr. Miller received a plant of it from the Cape Verd iſlands, and ſeeds from Madeira.

It is called Dragon-tree, becauſe the inſpiſſated juice becomes a red powder very like the eaſtern Dragon's blood.

[Cultivated in 1640, by Parkinſon[b]; who ſowed the ſeeds, but they did not abide the winter.

2. Stem ſhrubby, almoſt ſimple, eight feet high, erect, round, with cloſe protuberant rings from the fallen leaves; theſe are quite entire, a foot and half in length, erect, ſmooth, on ſtem-claſping petioles, and of a duſky-red colour. Flowers red-purple, ſubterminating: ſpadix diffuſed; ſpathe long, awl-ſhaped, permanent: proper perianth trifid, cup-ſhaped, ſmall, permanent. Corolla bell-ſhaped, ſix-parted, inferior; ſegments oblong, obtuſe, ſpreading. Anthers ſagittate, ſharp and bifid at the end. Style awl-ſhaped, thick, trifid, equal to the ſtamens: ſtigmas ſimple. Berry red. The ſeed is uſually abortive. It ſeems to approach the Palms[c].

In Chineſe it is called *Tat-ſio* or *Tſiet-tſao*; and is planted in gardens both there and in Cochinchina.

Native of China. Introduced 1771, by Benjamin Torin, Eſq. It flowers in march and april[d].

3. Found at the Cape of Good Hope, by Thunberg[e].

4. Leaves almoſt like thoſe of *Canna.* Raceme terminating, compoſed of a few branched racemes. Pedicels alternate, ſolitary, ſhorter than the flower, ſurrounded at the baſe by an obtuſe glume. It is a hard tree.

Native of the Eaſt Indies[f], and the Society iſles[g].

5. Leaves enſiform-lanceolate, nerveleſs, keeled underneath, petioled. Scape or ſtem branching, panicled, with two coloured leaflets at the origin of the branches[h].

Root perennial, horizontal, creeping, ſomewhat woody, odoriferous, ſimple. Root-leaves heaped, thick, ſtriated, ſhining, reflex, a foot long. Scape three feet high, leafy at bottom, naked at top, round, ſlender, declining; flowers terminating, ſubumbelled. Corolla bell-ſhaped, ſpreading; petals lanceolate, blue on the outſide, white within, ſmall. Filaments ſpreading, dilated at the baſe. Berry roundiſh, blue, three-grooved, containing many minute ſeeds[i].

Gærtner deſcribes the fruit as a ſuperior ſubglobular berry, of a violet purple colour, fleſhy, but when ripe drying up to a thin, obovate cruſt, marked with three grooves, gibbous at the ſeeds, having three cells but no valves; partitions membranaceous drawn from the grooves to the axis. Seeds rounded kidney-form, or beaked at the navel, compreſſed like a lens with a conical boſs in the middle on both ſides, very ſmooth, ſhining and black; two in each cell; fixed to the inner angle. Embryo monocotyledonous, roundiſh, ſlender, placed near the navel. This ſpecies perhaps more properly belongs to the genus *Medeola,* for it differs remarkably from *D. Draco* in the fruit. The ſynonym of Rumphius is doubtful, for he attributes nine ſeeds to his Gladiolus.—Cultivated 1759, by Mr. Miller[k].

Native of the Eaſt Indies, and Cochinchina.—Loureiro ſays, that if he had followed his own opinion, he ſhould rather have referred this plant to the genus Ornithogalum.

6, 7, 8, 9. Found at the Cape of Good Hope by Thunberg[l].—Dracæna Medeoloides and Medeola aſparagoides are probably one and the ſame plant[m].

10. Stature of *Anthericum Phalangium.* Leaves like thoſe of graſs, very much ſtreaked, a ſpan in

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[a] Linn. ſyſt.
[b] Hort. kew.
[c] Loureiro.
[d] Hort. kew.
[e] Linn. ſuppl.
[f] Linn. ſpec.
[g] Forſter.
[h] Linn. mant.
[i] Loureiro.
[k] Hort. kew.
[l] Linn. ſuppl.
[m] Retz. 5. p. 3.

length. Scape ſcarcely longer than the leaves. Four or five flowers at each tooth of the raceme, on pedicels ſhorter than the flower itſelf, coming out from a kind of obſcure glume.

Native of Aſia[n].

11. Native of the iſland of Bourbon. Introduced 1776, by Monſ. Richard. It flowers in april[o].

12. Native of Newfoundland, Hudſon's Bay, and Canada. Introduced 1778, by Dan. Charles Solander, L. L. D. It flowers in june[p].

13. Native of New Zealand, in woods on the coaſt of Duſky Bay.

Trunk round, full of ſmall chinks, undivided, leafy at top, from ſix to nine feet high. Leaves half-ſtem-claſping, imbricate at the baſe, quite entire, ſpreading, ſtriated, bright green, two feet long and a hand broad. Raceme apparently lateral, but perhaps this was owing to the next ſet of leaves deſtined for the enſuing year coming out; it is ovate, nodding, with the partial racemes digeſted into a cylindric thyrſoid form. Univerſal peduncle two or three feet long, round, even, herbaceous, an inch and half in diameter: partial peduncles a ſpan long, approximating, from erect ſpreading, round, even, having a lanceolate leaf at the baſe, the length of the peduncle; they come out ſcatteringly on every ſide from the univerſal peduncle. Pedicels one-flowered, very ſhort, horizontal. Bractes at the baſe of the pedicel two, very ſmall, lanceolate, acute, concave. Petals ſubreflex. Germ ſuperior. Style ſhort. Berry globular, blue, marked above with three hollow dots, mucronate with the permanent ſtyle, having about ſeven ſeeds in each cell, involved in an aril or membrane, ſo as to appear only one; they are black, ſmooth, ſemilunar and three-ſided. The generic character conſtructed from the firſt ſpecies does not agree very well with this or *D. terminalis*, which have many ſeeds in their berries. Perhaps the berry of the firſt alſo may be involved in an aril, and this may conſtitute the eſſential difference between *Aſparagus* and *Dracæna*.

The berries of this ſpecies are eaten by the natives, they are ripe in may, that is at the beginning of their winter. The young leaves, or rather the hybernacle concealed among them, is an excellent ſalad; and this, together with Areca oleracea and ſapida, Apium graveolens or Smallage, Tetragonia halimifolia, Lepidium oleraceum and piſcidium, and Sonchus oleraceus or Sowthiſtle, was found to be of great ſervice to our circumnavigators in reſiſting the putrid ſcurvy.

14. Native of New Zealand[q].

PROPAGATION AND CULTURE.

See PALMS.

DRACO ARBOR. See *Dracæna* and *Pterocarpus*.

DRACOCEPHALOS. See *Chelone*.]

DRACO HERBA. See *Artemiſia*.

DRACOCEPHĂLUM. (*From δρακων, a dragon, and κεφαλη, a head; the form of the flowers being ringent, or like a gaping mouth.*)

Lin. gen. n. 729. *Reich.* 787. *Schreb.* 984. *Gærtn.* 66. *Juſſ.* 116. *Tourn.* 83. *Hire. A. G.* 1712. 11. Moldavica. *Tourn.* 85. Ruyſchiana. *Mill. dict.*

Claſſ. 14. 1. Didynamia Gymnoſpermia.

Nat. order of *Verticillatæ.—Scrophulariæ.* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, tubular, permanent, very ſhort.

COR. one-petalled, ringent. *Tube* length of the calyx. *Throat* very large, oblong, inflated, gaping, a little compreſſed on the back. *Lip ſuperior* ſtraight, arched, complicated, obtuſe. *Lip inferior* three-cleft; *lateral diviſions* upright, as it were the ſegments of the throat; the *intermediate* one hanging down, ſmall, prominent forwards at the baſe, roundiſh, emarginate.

STAM. *Filaments* four, ſubulate, hid beneath the upper lip of the corolla, of which two are a little ſhorter. *Anthers* ſomewhat cordate.

PIST. *Germ* four-parted. *Style* filiform, in the ſituation of the ſtamens. *Stigma* two-cleft, ſharp, ſlender, reflex.

PER. none. *Calyx* cheriſhing the ſeeds in its bottom.

SEEDS four, ovate-oblong, three-ſided.

OBS. Dracocephalum T. *has a tubular calyx, which is inflected, five-toothed, and equal.*

Moldavica T. *has a ventricoſe calyx, ſtraitened at the neck, two-lipped at the mouth, with the upper-lip three-cleft and wider; lower-lip ſmaller, ſharper, and two-parted.*

That the calyx is of no conſequence in the generic marks, appears from ſome ſpecies of Moldavica *of Tournefort, which are furniſhed with ſuch calyx as in* Dracocephalum.

ESSENTIAL CHARACTER.

Cor. throat inflated, upper-lip concave.

SPECIES.

* *In Spikes.*

1. Dracocephalum virginianum. *Virginian Dragon's-head.*
Lin. ſpec. 828. *Reich.* 3. 86. *hort. cliff.* 308. *Sabb. hort.* 3. *t.* 26. *Breyn. ic.* 33. *t.* 27. *Riv. mon.* *Mor. hiſt.* 3. 417. *ſ.* 11. *t.* 4. *f.* 1. *Bocc. ſic. t.* 6. *f.* 3. (Pſeudodigitalis). *Barr. ic.* 1152. (Lyſimachia.)
Flowers crowded, leaves linear-lanceolate ſerrate.

[2. Dracocephalum denticulatum. *Denticulated Dragon's-head.*
Ait. hort. kew. 2. 317. *Curtis, magaz. t.* 214.
Flowers remote, leaves obovate-lanceolate denticulate above.]

3. Dracocephalum canarienſe. *Canary Dragon's-head,* or *Balm of Gilead.*
Lin. ſpec. 829. *Reich.* 86. *hort. cliff.* 308. *mat. med.* 153. *Volk. norib. t.* 145. *Mor.* 3. 366. *t.* 11. *f.* ult. (Camphoroſma). *Pluk. alm. t.* 315. *f.* 5. *Sabb. hort.* 3. *t.* 27. (Meliſſa). *Comm. hort.* 2. *t.* 41. (Cedronella).
Leaves compound.

[4. Dracocephalum pinnatum.
Lin. ſpec. 829. *Reich.* 86. *hort. upſ.* 165. *Gmel. ſib.* 3. 234. *t.* 52.
Leaves cordate pinnate-ſinuate.

5. Dracocephalum peregrinum. *Prickly-leaved Dragon's-head.*
Lin. ſpec. 829. *Reich.* 87. *amœn.* 4. 318. *Gmel. ſib.* 3. 237. *L'Herit. ſtirp. nov.* 2. *t.* 28. ined. *Mor.* 364. *n.* 9. *ſ.* 11. *t.* 5. *f.* 9.
Flowers ſomewhat ſpiked, ſtem-leaves ovate-oblong gaſhed, bractes linear-lanceolate denticulate-ſpiny.]

6. Dracocephalum auſtriacum. *Auſtrian Dragon's-h.*
Lin. ſpec. 829. *Reich.* 87. *Jacqu. ic. collect.* 1. 119. *hort. cliff.* 364. *Herm. lugdb.* 330. (Hyſſopus).
Ruyſchiana laciniata. *Mill. dict. n.* 2.—hirſuta. *Amm. ruth.* 50.
Chamæpithys auſtriaca. *Cluſ. hiſt.* 2. 185.—cærulea auſtr. *Bauh. pin.* 250.
Leaves and bractes linear parted ſpiny.

7. Dracocephalum Ruyſchiana. *Hyſſop-leaved Drag.*
Lin. ſpec. 830. *Reich.* 87. *fl. ſuec. n.* 537. *hort. upſ.* 165. *Hall. helv. n.* 254. *Gmel. ſib.* 3. 236. *n.* 59. *Fl. dan. t.* 121.
Ruyſchiana ſpicata. *Mill. dict. n.* 1.
R. glabra. *Amm. ruth.* 50.
R. fl. cæruleo magno. *Boerh. lugdb.* 1. 172. *Zanon. nov. t.* 146.
Pſeudo-chamæpithys auſtriaca. *Riv. mon.* 146. *Mor.* 364. *t.* 5. *f.* 9. (Prunella).
Leaves and bractes lanceolate undivided awnleſs.

** *In Whorls.*

8. Dracocephalum ſibiricum. *Siberian Dragon's-head.*
Lin. ſpec. 830. *Reich.* 88. *hort. upſ.* 164. *Gmel. ſib.* 3. 234. *t.* 51. *Buxb. cent.* 3. 27. *t.* 50. *f.* 1.
Ruyſchiana verticillata. *Mill. dict. n.* 3.
Flowers ſubverticilled, peduncles bifid pointing one way, leaves cordate-oblong acuminate naked.

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[n] Linn. ſpec. [o] Hort. kew. [p] Ibid. [q] Forſter.

9. Dracocephalum Moldavica. *Moldavian Dragon's-head* or *Balm.*
Lin. ſpec. 830. *Reich.* 88. *hort. upſ.* 166. *mat. med.* 153. *hort. cliff.* 303. *Blackw. t.* 551.
Meliſſa peregrina, fol. oblongo. *Bauh. pin.* 229.
M. moldavica. *Cam. epit.* 576.
Leaves dotted underneath; bractes lanceolate, the ſerratures capillaceous.

10. Dracocephalum caneſcens. *Hoary Dragon's-head.*
Lin. ſpec. 831. *Reich.* 89. *hort. upſ.* 66. *hort. cliff.* 308. *Mill. fig. t.* 129. *Comm. rar. t.* 28. (Moldavica). *Volk. norib. t.* 353. *Mor.* 389. *t.* 4. *f.* 18? (Sideritis).
Bractes oblong with ſpiny ſerratures, leaves ſubtomentoſe.

11. Dracocephalum peltatum. *Willow-leaved Drag.*
Lin. ſpec. 831. *Reich.* 89. *hort. upſ.* 166. *cliff.* 309.
Moldavica orient. ſalicis folio, parvo fl. cæruleo. *Tournef. cor.* 11.
Bractes orbiculate ſerrate-ciliate.

12. Dracocephalum grandiflorum. *Great-flowered D.*
Lin. ſpec. 830. *ſyſt.* 543. *Reich.* 88. *ſuppl.* 274. *Gmel. ſib.* 3. 233. *n.* 56. *Act. petrop.* 1770. 556. *t.* 29. *f.* 3.
D. altaienſe. *Lin. ſyſt. ed.* 13. 454. *Reich.* 89. *Act. petrop.* 15. 555. *t.* 29. *f.* 3.
Leaves crenate; root-leaves cordate, ſtem-leaves orbiculate ſeſſile; bractes acuminate-toothed

13. Dracocephalum nutans. *Nodding Dragon's-head.*
Lin. ſpec 831. *Reich.* 89. *hort. upſ.* 167. *n.* 2. *Gmel. ſib.* 3. 231. *t.* 49.
Bractes oblong ovate quite entire, corollas rather large nodding.

14. Dracocephalum thymiflorum. *Small-flowered D.*
Lin. ſpec. 831. *Reich.* 90. *hort. upſ.* 167. *Gmel. ſib.* 3. 233. *t.* 50. *Gærtn. fruct.* 1. 319.
Bractes oblong quite entire, corollas ſcarcely larger than the calyx.

[15. Dracocephalum cochinchinenſe.
Lour. cochinch. 371.
Flowers in ſpikes, bractes roundiſh acute, leaves ovate-lanceolate, quite entire.

DESCRIPTIONS, &c.

The ſpecies of this genus are moſtly herbaceous, ſome few however are underſhrubs. The ſtalks are ſquare; the leaves oppoſite in pairs. The flowers are either in whorls forming all together a ſpike at the end of the ſtalk, or axillary on one-flowered or many-flowered peduncles; they are ſupported by bractes, which are generally broad, and ſometimes ciliate; in the firſt ſpecies however they are narrow and very ſmall.]

1. This riſes with an upright ſtalk, near three feet high. Leaves about three inches long, and half an inch broad, ſeſſile; they are uſually in pairs at each joint, but ſometimes there are three together. The flowers are purple, in terminating ſpikes, and make a pretty variety among other hardy plants. It is perennial, and flowers from july to ſeptember.

It is a native of North America, in woods, and by the ſides of rivers.

[Cultivated in 1683, by Mr. James Sutherland[a].

2. Allied to the firſt ſpecies, but inferior in point of beauty. It ſpreads more on the ground; its flowering ſtems are not altogether ſo upright, nor ſo tall; the leaves are broader, and the flowers in the ſpikes leſs numerous. It flowers in auguſt and ſeptember. Mr. Curtis received ſeeds of it from Philadelphia, collected at a conſiderable diſtance from that city, about the year 1786. And Mr. Watſon, nurſeryman at Iſlington, obtained the plant from Carolina, about the ſame period[b].]

3. This is a perennial plant, riſing with ſeveral ſtalks to the height of three feet or more, becoming woody at the lower part. Leaves at each joint, having three or five, oblong, pointed, ſerrate leaflets. The flowers come out in ſhort thick ſpikes on the top of the ſtalks; they are of a pale blue colour, and are produced from july to ſeptember. [The leaves are on petioles from an inch to two inches in length, triangular, two of the angles and the joints moderately hairy. Leaves ſoft, wrinkled like thoſe of Mint, veined, moſtly ternate, the middle leaflet much longer than the other two; ſome of the lower ones have five leaflets, ſomewhat like thoſe of Hemp; each leaflet an inch wide, and two inches long, mucronate and toothed. (A plant which I have now before me, october 3, 1795, has not one leaf but what is ternate, but it is an old plant, and has loſt the lower leaves. The young petioles are quite white with hairs, on thoſe which are far advanced the hairs are diſtinct, and perpendicular to the petiole; the lower ſurface of the young leaves is alſo very hairy, but the upper ſurface is bald: the petioles are not triangular, but flat and channelled above, and convex beneath. Stiff pellucid hairs, or rather tender prickles, are thinly ſcattered along the angles of the ſtem, and there are thick tufts of long white hairs at the joints.) Spikes broadiſh, from an inch to two inches in length. Calyx long, ſtriated, (hairy, on a very ſhort pedicel.) Corolla fleſh-colour or pale purple, with white lines.

Native of the Canary iſlands, whence it was brought to Europe, by the name of *Permento de Tana*[c]. The old writers call it *Camphoroſma* and *Cedronella*, and we *Balm of Gilead*, from its rich odour, on being gently rubbed.

It was deſcribed by Moriſon in 1690[d], and was cultivated in 1697, by the Dutcheſs of Beaufort[e].

4. Stems ſhrubby, decumbent. Leaves tranſverſely pinnatifid, obtuſe with remote lobes, on long petioles. The ſpike is like that of *Melampyrum arvenſe*. The bractes are lanceolate with briſtly teeth, and are often red. Corollas ſmall; ſtyles twice as long as the flowers.

Native of Jerkatſch, in Siberia[f].

5. Root perennial. Stems ſeveral, a long ſpan in length, with the joints an inch aſunder. Leaves like thoſe of common Hyſſop or Roſemary, moderately hoary underneath; from the axils of theſe come out branches with ſimilar leaves, but ſmaller, and flowers at the end, with rigid calyxes, and corollas of a very elegant blue-purple colour. Seeds oblong, angular, blackiſh[g].

Native of Siberia. Cultivated before 1699, by Mr. Jacob Bobart[h].]

6. Root perennial. Stalks hairy, a foot and half high, ſending out ſeveral ſide-branches. Leaves hairy, linear, cut into three parts. Flowers terminating in ſhort whorled ſpikes, with ſome very narrow leaves (bractes) under each whorl. Tube of the corolla longer and more equal than that of the next ſpecies, and the middle ſegment of the lower lip not ſo much reflexed.

[This is a beautiful plant and grows in Auſtria, where it was firſt obſerved by Cluſius. It varies according to its ſoil in point of number of ſtems, *&c.* The ſtems are annual, ſquariſh, and villoſe: the leaves oppoſite; hoary below, ſmooth and green above, and are deeply lobed or cut in a pinnatifid manner. The flowers are axillary on the upper part of the plant, commonly in pairs, ſometimes in threes; and are of a violet-purple colour, paler without[i].

Native of Auſtria and Hungary. Introduced 1788, by Joſ. Nich. de Jacquin, M. D.[k]—If ſo, it is not the ſame with Miller's or Amman's plant.]

7. Root perennial. Stems about two feet high with two ſmooth linear leaves at each joint, about an inch long, and one-eighth of an inch broad, with a deep furrow along the middle: at each joint, at the other ſides of the ſtem, come out two or three very narrow ſmall leaves of the ſame ſhape. The calyxes are cut into five ſegments at top, of which four are narrow and acute; and the fifth, which is on the upper ſide of the flower, is broader and

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[a] Hort. kew.
[b] Curtis magaz.

[c] Moriſon.
[d] Linn. ſyſt.
[e] Hort. kew.
[f] Linn. ſpec.
[g] Moriſon.
[h] Hort. kew. from Mor.
[i] Jacquin.
[k] Hort. kew.

rounded at the point. The tube of the corolla is longer than the calyx, ſwelling and large at the chaps; the upper lip broad, erect and arched over the tube; the lower ſhorter, with two ſhort, erect ſide ſegments, but the middle ſegment is broad, rounded and indented at the point, and reflex. The flowers appear in june, and are of a fine blue colour.

[Stems numerous, a foot in height, with a branch from the axil of each leaf. The leaves are apt to contract their edges. Whorls on two branches, having about ſix flowers in each, on ſhort peduncles. Theſe whorls on the topmoſt branches are continued into ſpikes. Corolla an inch long and hirſute; the wings of the chaps ovate and lanceolate; beard bifid, ſerrate, ſpotted. Anthers black; pollen white[l].

Native of Norway, Sweden, Switzerland, Siberia. Cultivated in 1758, by Mr. Miller[m].

This and the foregoing ſpecies, were ſeparated by Boerhaave, and made a diſtinct genus, under the name of *Ruyſchiana*, in honour of Dr. Ruyſch, who was profeſſor of anatomy and botany at Amſterdam.]

8. The ſtalks of this do not grow erect, like the preceding, but ſpread nearer to an horizontal poſition; they divide into ſeveral branches, which have a pair of large leaves at each joint, and four ſmaller, two on each ſide; they are ſmooth, have ſharp indentures on their edges, and ſtand erect. The flowers come out from the ſide of the ſtalks at the baſe of the leaves, two or three together on each ſide. Calyx purple, cut into five acute ſegments, three broad in the upper lip, two narrower in the lower. Upper lip of the corolla broad, indented at the point and erect; lower trifid, but the middle ſegment not ſo much reflexed as that of the preceding; and the whole of a paler blue.

[The chaps of the corolla are broad and almoſt inflated; the upper lip is compreſſed and bifid; the lower toothletted, and villoſe in front: the two upper ſtamens are hirſute at the baſe.

Native of Siberia[n].—Introduced in 1760, by Mr. James Gordon[o].

This, and all the foregoing ſpecies, are perennial. The third is marked in the Kew catalogue as biennial.]

9. This is an annual plant, riſing with branching ſtalks a foot and half high, with oblong leaves, deeply ſerrate on their edges. The flowers come out in whorls round the ſtalks at every joint; they are blue, and appear in july, continuing to the middle of auguſt. The ſeeds ripen in ſeptember. The plant has a ſtrong balſamic odour, which to ſome perſons is very agreeable.

Native of Moldavia. [Cultivated in 1596, by Gerarde.]

10. This has hoary ſtalks, a foot and half high, putting out two or three ſide branches, with hoary leaves near two inches long, and half an inch broad, a little indented on their edges; they are placed juſt under the whorls of flowers, which ſit cloſe to the ſtalk: the corolla is large, of a fine blue colour, and makes a pretty appearance among the hoary leaves. It flowers and ſeeds about the ſame time as the foregoing ſort, and is generally treated as an annual, but the roots will live two years in a dry ſoil. There is a variety with white flowers.

Diſcovered by Tournefort in the Levant.

[Cultivated in 1712[p].]

11. This is an annual plant, about a foot high, ſending out two ſmall branches from the lower part. Leaves lanceolate, crenate, petioled. Flowers ſmall, purpliſh; coming out at the ſame time with the two foregoing.

Native of the Levant, whence Tournefort ſent the ſeeds to the royal garden at Paris.

[Cultivated in 1731[q].

The fourth ſpecies of Miller ſeems not to differ from this.]

12. Root-leaves like thoſe of Betony, petioled, obtuſe, wrinkled, pubeſcent; ſtem-leaves almoſt wedge-ſhaped, rounded, very obtuſe, crenate-toothed. Bractes two on each ſide, very obtuſe, the length of the calyx; beſides two minute, lanceolate little bractes, belonging to the lateral flowers. [The bractes and floral leaves are ſomewhat of a violet colour[r].

The whorls have the flowers by threes on each ſide. Calyxes ſubpeduncled, five-cleft, the three upper teeth leſs divided. Corollas large, blue; the chaps much inflated, with a riſing ſtreak at the back on each ſide: upper lip bifid; lower trifid; the middle ſegment larger, dark-blue, reflex, bearded at the end. Anthers oblong.

Native of the Siberian alps.—That which was deſcribed in the *Species plantarum* is a mere variety of this[s]. Native of Siberia. Introduced in 1783, by Mr. John Bell[t].]

13. This alſo is annual. Stalks many, weak, about nine inches high, having at bottom ovate-lanceolate leaves about two inches long, and an inch and quarter broad, crenate, and on pretty long foot-ſtalks. The upper part of the ſtalks has ſmaller leaves, ſitting cloſe at the joints, and from theſe come out the flowers in whorls; they are of a deep blue colour, and hang down, appear at the ſame time with the preceding, and the ſeeds ripen in autumn.

Native of Siberia, whence the ſeeds were ſent to the Imperial garden at Peterſburgh. Dr. Amman ſent the ſeeds to Mr. Miller, who cultivated them before 1768.

14. The ſtalks of this riſe a foot and half high. The lower leaves are very like thoſe of Betony, and ſtand upon very long foot-ſtalks: the upper leaves are ſmall, and ſit cloſer to the ſtalks. The flowers come out in whorls at every joint, they are of a pale purple or blue colour, and being ſmall make little appearance.

[Seeds ſmall, ovate-oblong, ſlightly convex on one ſide, angular on the other, dark cheſtnut colour[u].

Native of Siberia. Cultivated by Mr. Miller in 1759[x]

15. Stem herbaceous, ten inches high, erect, grooved, villoſe. Leaves villoſe, few. Flowers violet-coloured, in terminating ſpikes. Bractes many-flowered. Filaments hairy.

Native of Cochinchina[y].]

PROPAGATION AND CULTURE.

1. This will live in the open air, but requires a moiſt ſoil, or ſhould be duly watered in dry weather, otherwiſe the leaves will ſhrink, and the flowers make little appearance. It may be allowed a place in the ſhady borders of a garden, for it will not ramble, nor take up much room; and may be propagated by parting the roots in autumn.

[2. This, as well as the firſt, is a hardy perennial, multiplying conſiderably by its roots, which creep in ſome degree; it muſt be planted in a moiſt ſoil and ſhady ſituation[z].]

3. Balm of Gilead is uſually kept in the greenhouſe; but in mild winters the plants will live abroad in warm borders; and thoſe which are kept in pots will thrive much better when ſheltered under a frame than in a greenhouſe, where the plants are apt to draw up weak; for they ſhould have as much free air as poſſible in mild weather, and only require to be ſheltered from ſevere froſt. This may be propagated by ſeeds, which, if ſown in autumn, will more certainly grow, than thoſe which are ſown in the ſpring; but if theſe are ſown in pots, they muſt be ſheltered under a frame in the winter, and if the plants do not come up the ſame autumn, they will ariſe in the ſpring; but if the ſeeds are ſown in the full ground, it ſhould be in a warm border; and in hard froſt they ſhould be ſheltered, otherwiſe the young plants will be de-

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[l] Haller. [m] Hort. kew. [n] Linn. ſpec. [o] Hort. kew. [p] Ibid. [q] Ibid. from Mill. dict. edit. 1.

[r] Linn. ſyſt. [s] Linn. ſuppl. [t] Hort. kew. [u] Gærtner. [x] Hort. kew. [y] Loureiro. [z] Curtis magaz.

ſtroyed. The plants may alſo be propagated by cuttings; which, if planted in a ſhady border any time in ſummer, will very ſoon take root, and furniſh plenty of rooted plants.

6, 7, 8. Theſe plants are propagated by ſeed, which ſhould be ſown the latter end of march, in a bed of freſh light earth in an open expoſure, and in about five or ſix weeks after, the plants will appear, when they ſhould be carefully cleared from weeds; and if the ſeaſon ſhould prove dry, they muſt be refreſhed now and then with water, which will greatly promote their growth. When the plants are about two inches high, they ſhould be carefully tranſplanted into a bed or border of freſh, light, undunged earth, obſerving to ſhade them from the ſun until they have taken root, as alſo to refreſh them with water until they are well eſtabliſhed in this bed; after which time they will require no farther care, but to keep them conſtantly clear from weeds till michaelmas, when they are to be removed into the places where they are deſigned to remain for good.

When the plants are firſt tranſplanted from the ſeed-bed into the nurſery-bed, they ſhould be planted about ſix inches aſunder every way, which will be ſufficient room for them the firſt ſeaſon; and this will admit of the hoe to come between the plants to deſtroy the weeds, which is by much a better method than pulling out the weeds by hand, and is much ſooner performed. For as the hoe ſtirs the ground between the plants, it not only cuts down the weeds which were up and viſible, but alſo deſtroys all thoſe whoſe ſeeds were ſprouted, and would have ſoon after appeared; ſo that one hoeing, if well performed, and in dry weather, will more effectually deſtroy the weeds than two hand-weedings would do, were they performed ever ſo carefully; beſides, the ſtirring the ground is of great ſervice to the plants.

At michaelmas, when the plants are tranſplanted for good, they ſhould be carefully taken up with balls of earth to their roots; and they muſt be planted in the middle of the borders in the pleaſure-garden, in freſh light earth, intermixing them with other hardy plants of the ſame growth, where they will make a pretty appearance when they are in flower, and will continue three or four years; and in ſome poor ſtony ſoils I have known the roots live ſix or ſeven years, but theſe did not produce ſo large ſpikes of flowers as thoſe which were younger and more vigorous plants. Therefore, as theſe plants do not continue many years, it will be proper to raiſe a ſupply of young plants to ſucceed them, for the old plants will produce ſeeds plentifully, which are ripe the latter end of auguſt or the beginning of ſeptember, when they ſhould be gathered in dry weather, and kept in a warm dry room till the time for ſowing them.

9—14. All theſe ſorts may be propagated by ſeeds, which may be ſown either in the ſpring or autumn in ſmall patches upon the borders where they are to remain. When the plants come up, they ſhould be thinned where they grow too near together, and kept clear from weeds.

DRACOCEPHALUS. See *Dracocephalum* and *Chelone.*

DRACONTIUM. (Δρακοντιον *of Theophraſtus, and Dioſcorides; from* Δρακων, *a dragon.*)

Lin. gen. n. 1029. *Reich.* 1120. *Schreb.* 630. *Juſſ.* 24.

Claſſ. 20. 8. Gynandria Polyandria—Heptandria Monogynia. *Schreb.*

Nat. order of *Piperitæ.*—*Aroideæ.* Juſſ.

GENERIC CHARACTER.

CAL. *Spathe* boat-form, leathery, one-valved, very large.

Spadix extremely ſimple, cylindric, very ſhort, coated on all ſides with fructifications diſpoſed into a head, of each of which the

Perianth proper none, unleſs you call the corolla ſo.

COR. *proper* five-petalled, concave: *Petals* ovate, obtuſe, ſomewhat equal, coloured.

STAM. In each *filaments* ſeven, linear, depreſſed, upright, equal, longer than the corollet. *Anthers* four-cornered, twin, oblong, obtuſe, upright.

PIST. *Germ* ſomewhat ovate. *Style* columnar, ſtraight, length of the ſtamens. *Stigma* obſcure, three-ſided.

PER. in each a roundiſh *Berry.*

SEEDS very many.

ESSENTIAL CHARACTER.

Spathe boat-form. *Spadix* covered. *Cal.* none. *Petals* five. *Berries* many-ſeeded.

SPECIES.

1. Dracontium polyphyllum.
Lin. ſpec. 1372. *Reich.* 4. 74. *hort. cliff.* 434. *Thunb. jap.* 234. *Herm. par. t.* 93. *Pluk. alm. t.* 149. *f.* 1. (Arum).
Scape very ſhort, petiole rooted, torn, leaflets three-parted, diviſions pinnatifid.

2. Dracontium ſpinoſum.
Lin. ſpec. 1372. *Reich.* 74. *Fl. zeyl. n.* 328.
Arum zeylanicum, &c. *Herm. par.* 75. *Raii ſuppl.* 575.
Leaves ſagittate, peduncles and petioles prickly.

[5. Dracontium foetidum. *Fetid Dragon,* or *Scunk-weed.*
Lin. ſpec. 1372. *Reich.* 74. *Cold. noveb.* 214. *Kalm. itin.* 3. 47. *edit. engl.* 2. 90. *Gron. virg.* 141—186. *Cateſb. car.* 2. *t.* 71. (Arum).
Leaves roundiſh.]

4. Dracontium camſchatcenſe.
Lin. ſpec. 1372. *Reich.* 74. *amœn.* 2. 360.
Leaves lanceolate.

5. Dracontium pertuſum. *Perforate-leaved Dragon.*
Lin. ſpec. 1372. *Reich.* 74. *Mill. fig. t.* 296. *Plum. amer.* 40. *t.* 56, 57. (Arum).
Leaves perforated, ſtem climbing.]

DESCRIPTIONS, *&c.*

1. This has a large knobbed irregular root, covered with a rugged brown ſkin. The ſtalk riſes about a foot high, is ſmooth, and of a purple colour, full of ſharp protuberancies of different colours, ſhining like the ſkin of a ſerpent; it is naked to the top, where it has a tuft of leaves, which are divided into many parts. The flower-ſtalk riſes immediately from the root, and is ſeldom more than three inches high; having an oblong ſwelling hood (or ſpathe) at top, which opens lengthwiſe, ſhowing the ſhort thick pointed ſtyle within, upon which the flowers are cloſely ranged.

It grows naturally in ſeveral of the iſlands of America. Mr. Miller received roots of it from Barbuda: [alſo in Surinam, and Japan, where they prepare a medicine from the acrid roots, which they call Konjakf, and eſteem as a great emmenagogue; diſſolute women uſe it there to procure abortion[a]. In the Society iſles it is cultivated for the ſake of the roots, which are eaten in a ſcarcity of the Bread-fruit, notwithſtanding their extreme acrimony[b].]

2. This has an oblong thick root full of joints, from which ariſe ſeveral leaves, ſhaped like thoſe of the common Arum, but their foot-ſtalks are covered with rough protuberancies. The ſtalk which ſupports the flower is ſhort, and ſet with the like protuberancies, and at the top is a ſpathe, about four inches long, as thick as a man's finger, which opens longitudinally, and expoſes the ſpadix, which is ſet with flowers.

It grows naturally in the iſland of Ceylon, and in ſeveral parts of India.

[3. The flowers appear firſt; after they are arrived to a ſtate of perfection, the leaves come out at a ſmall diſtance, in a conic form, very cloſely rolled together. They are nearly ovate when expanded, and petioled. The plant has no ſtem. The globe of flowers is nearly the colour of the ſpathe, which is beautifully variegated with ſcarlet and yellow. The corolla has four, erect, very thick, narrow, obtruncated petals. The ſtamens have four flattiſh filaments riſing from the receptacle, longer than the corolla. Style rather longer than the ſtamens: ſtigma bifid. Seeds large, roundiſh, ſingle, incloſed within the receptacle.

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[a] Thunb. jap. & trav. 3. 163. engl. edit.

[b] Forſter. eſcul. 61.

Native of North America, in ſwamps and borders of meadows; april and may.—The vulgar names of Scunk Cabbage and Scunkweed are taken from its rank ſmell, nearly reſembling that of a Scunk or Polecat.

The roots dried and powdered are an excellent remedy in aſthmatic caſes. It may be given with ſafety, to children, in doſes of four, five or ſix grains, and to adults, in doſes of twenty grains and upwards. It appears to be antiſpaſmodic, and bids fair to be uſeful in many diſorders. In collecting the roots, particular care ought to be taken that the *white hellebore*, or *poke-root*, which ſome call Scunkweed, be not miſtaken for this.—There is an obvious diſtinction, the former has a ſtalk, but this has none[c].

Cattle do not touch it during the ſummer. The Swedes ſettled in North America call it *Byorn-blad*, or *Byorn-retter* (Bear's-leaf or Bear's-root): becauſe the Bears, when they leave their winter habitations in the ſpring, are very fond of it[d].]

4. This has roots like the common Arum, and the leaves come out each on a ſeparate foot-ſtalk, immediately from the root, as in that plant. It has not flowered in England. Siberia is its native country.

5. This has ſlender jointed ſtalks, which put out roots at every joint, that faſten to the trunks of trees, walls, or any ſupport which is near them, and thereby riſe to the height of twenty-five or thirty feet. The leaves are placed alternately, ſtanding upon long foot-ſtalks; they are four or five inches long, and two and a half broad, having ſeveral oblong holes in each, ſo that on the firſt view they appear as if eaten by inſects. The flowers are produced at the top of the ſtalk, which always ſwells to a larger ſize in that part than in any other; theſe are covered with an oblong ſpatha (or hood) of a whitiſh green colour, which opens longitudinally on one ſide, and ſhews the ſpadix cloſely covered with flowers, of a pale yellow, inclining to white. When this plant begins to flower, it ſeldom advances farther in height, ſo that theſe ſeldom are more than ſeven or eight feet high; but the leaves are much larger on theſe, than thoſe of the plants which ramble much farther.

It grows naturally in moſt of the iſlands in the Weſt-Indies, [and in the iſland of Tanna in the South Seas; and was cultivated by Mr. Miller in 1752[e].

Quebitea of Aublet (guian. t. 327.) is probably to be referred to this genus[f].]

PROPAGATION AND CULTURE.

1, 2. Theſe ſorts being tender, require a warm ſtove to preſerve them in England. The roots muſt be planted in pots filled with light kitchen-garden earth, and plunged into the tan-bed in the ſtove, where they ſhould conſtantly remain; in the winter they muſt be watered very ſparingly, but in warm weather, when the plants are in vigour, they muſt be often refreſhed, but it ſhould not be given them in too great quantities; with this management the plants will flower, but their roots do not increaſe here.

4. This requires a ſhady ſituation, and will bear the greateſt cold of this country.

5. This plant is eaſily propagated by cuttings, which, if planted in pots filled with poor ſandy earth, and plunged into a hot-bed, will ſoon put out roots, if they had none before; but there are few of the joints which have not roots: the plants being tender, will not live in the open air in England, therefore the pots ſhould be placed near the walls of the hot-houſe, againſt which the plants will climb, and faſten their roots into the wall, and thereby ſupport the ſtalks. They ſhould have but little water given them in the winter, but in warm weather it muſt be given them three or four times a week, and in the ſummer the free air ſhould be admitted to them in plenty. The plants have no particular ſeaſon of flowering, for they ſometimes flower in autumn, and at other times in the ſpring, but they do not ripen their ſeeds in England.

Theſe plants are preſerved in the gardens of the curious in England and Holland, more for the ſake of variety than for beauty; for except the fifth ſort, there is not any of them which make much appearance; that indeed may be ſuffered to have a place againſt the wall of the ſtove, over which it will ſpread, and cover the nakedneſs of the wall; and the leaves, which are ſo remarkably perforated, remaining all the year, make a ſingular appearance.

All the other ſorts of Dragon being tender plants, will not live in this country, unleſs they are preſerved in the warmeſt ſtoves; the ſeveral American ſorts grow naturally in the woods in Jamaica, and other hot parts of America; the climbing ſorts twiſt themſelves round the trunks of trees, into which they faſten their roots, which are ſent forth from their joints, and riſe to the height of thirty or forty feet. Theſe climbing ſorts are eaſily propagated by cuttings, which, being very ſucculent, may be brought over to England in a box of dry hay, if they are packed up ſeparate, ſo as not to injure each other by the moiſture, which is apt to flow out at the part where they are cut off, which may occaſion a fermentation, and thereby rot the cuttings. When the cuttings arrive, they ſhould be planted in ſmall pots filled with light freſh earth, and plunged into a hot-bed of tanner's bark, being very careful not to let them have too much moiſture until they have taken root, leſt it rot them: when they have taken root, they muſt be frequently refreſhed with water; and when they are grown pretty large, they ſhould be placed in the bark-bed in the ſtove, where they muſt be placed near ſome ſtrong plants, to which they may faſten themſelves, otherwiſe they will not thrive; for though they will ſend forth roots at their joints, which will faſten to the mortar of the ſtove, when placed againſt the wall, yet they will not thrive near ſo well as againſt a ſtrong plant, which will afford them nouriſhment.

The other ſorts are propagated by off-ſets from their roots; theſe may be procured from the countries of their growth, and ſhould be planted in tubs of earth, about a month before they are put on board the ſhip to tranſport them; theſe tubs ſhould be placed in a ſhady ſituation until they have taken root. In their paſſage great care ſhould be had to keep them from ſalt water, as alſo not to let them have too much water given them; for if they have a little water once or twice a week at moſt, while they are in a hot climate, and when they are come into a cooler climate, once in a fortnight, this will be ſufficient for them; and it ſhould be done ſparingly, leſt it rot them; for if the tops of the plants ſhould decay for want of water in their paſſage, if the roots are not rotted, they will ſoon recover with proper care.

When the plants arrive, they ſhould be tranſplanted into pots filled with light freſh earth, and plunged into a hot-bed of tanner's bark, and gently watered until they have taken good root, after which time they will require to be frequently refreſhed with water; but as their ſtems are very ſucculent, they muſt not have too much moiſture. Theſe plants ſhould be conſtantly kept in the ſtove, where, in hot weather, they ſhould have freſh air admitted to them; but in winter they muſt be kept very warm, otherwiſe they cannot be preſerved in this country.

Theſe plants will riſe to the height of three, four, or five feet, and will afford a very agreeable variety amongſt other tender exotic plants in the ſtove.

DRACONTIUM. See *Arum* and *Pothos*.

DRACUNCULOIDES. See *Hæmanthus*.

DRACUNCULUS. See *Achillea*, *Artemiſia*, *Arum Calla*, *Pothos*, *Rudbeckia*.

DRAGON. See *Arum* and *Dracontium*.

DRAGON'S-HEAD. See *Dracocephalum*.

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[c] Cutler in mem. amer. acad. 1. 407.
[d] Kalm.
[e] Hort. kew.
[f] Juſſieu.

Dragon Tree. See *Dracæna.*

Draining. See *Land.*

Drakena. See *Dorſtenia.*

Drilling. See *Hoeing.*

Dropwort. See *Spiræa.*

———, Water. See *Oenanthe.*

DROSERA. (*From* δροσερος, *Dewy, which is from* Δροσος, *Dew. Drops hanging on the leaves, like Dew.*)

Fr. *Roſſelis.* Engl. *Sundew.*

[*Lin. gen. n.* 391. *Reich.* 421. *Schreb.* 531. *Gærtn.* 61. *Juſſ.* 245. *Ros Solis. Tourn.* 127.

Claſſ. 5. 5. Pentandria Pentagynia.

Nat. order of *Gruinales.—Capparides.* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, five-cleft, ſharp, upright, permanent.

Cor. funnel-form. *Petals* five, ſomewhat ovate, obtuſe, rather larger than the calyx, and alternate with it.

Stam. *Filaments* five, ſubulate, length of the calyx, and alternate with the petals. *Anthers* ſmall, growing to the filaments.

Pist. *Germ* ſuperior, roundiſh. *Styles* five, ſimple, length of the ſtamens. *Stigmas* ſimple.

Per. *Capſule* ſurrounded with the calyx, ſomewhat ovate, one-celled, three, four or five-valved at the tip.

Seeds very many, very ſmall, ſomewhat ovate, ſcabrous, fixed to a branching looſe receptacle in the centre at bottom.

Obs. *In* Droſera luſitanica *there are ten ſtamens.* R. *In* D. rotundifolia *and* longifolia, *ſix ſtyles*; *in* longifolia β. 8. *ſtyles.* H. *The number of openings in the capſule uncertain.*

ESSENTIAL CHARACTER.

Cal. five-cleft. *Pet.* five. *Capſ.* one-celled, five (or three) valved at the tip. *Seeds* very many.

SPECIES.

1. Droſera acaulis.
Lin. ſyſt. 303. *ſuppl.* 188.
Flower radical, without any ſcape, ſolitary, leaves oblong.

2. Droſera cuneifolia. *Wedge-leaved Sun-dew.*
Lin. ſyſt. 304. *ſuppl.* 108.
Scapes radicate, leaves wedge-form-rounded.

3. Droſera rotundifolia. *Round-leaved Sun-dew.*
Lin. ſpec. 402. *Reich.* 1. 766. *fl. lapp. n.* 109. *ſuec. n.* 273. *mat. med.* 91. *fl. zeyl. n.* 120. *Hudſ. angl.* 135. *With.* 331. *Relh. cant. n.* 255. *Lightf. ſcot.* 175. *Pollich. pal. n.* 322. *Villars dauph.* 2. 549. *Krock. ſileſ. n.* 493. *Blackw. t.* 432. *Plenck, ic. t.* 247. *f.* 1. *Lour. cochinch.* 186.
Rorella rotundifolia. *Allion. pedem. n.* 1601. *Hall. helv. n.* 834.
Roſſolis ſeptemtrionalis. *Scop. carn. n.* 390.
Ros ſolis. *Bauh. hiſt.* 3. 761. 2. *Burm. zeyl.* 207. *t.* 94. *f.* 2.—major. *Ger.* 1366. 1. *Park. theat.* 1052. 1. b. c.—fol. rotundo. *Bauh. pin.* 357. *Ger. emac.* 1556. 1. *Raii hiſt.* 1100. *ſyn.* 356. *Barrel. ic.* 251. 1. *Petiv. brit. t.* 63. *f.* 10.
Rorida, ſ. Ros ſolis major, *Lob. ic.* 811.
Salſirora ſ. Ros ſolis. *Thal. herc. t.* 9. *f.* 1.
β. Rorella rotundifolia perennis. *Raii ſyn.* 356. *hiſt.* 1100.
Scapes radicate, leaves orbiculate (*ſtyles* 6. *H.*)

4. Droſera longifolia. *Long-leaved Sun-dew.*
Lin. ſpec. 403. *Reich.* 766. *fl. lap. n.* 110. *ſuec. n.* 274. *Hudſ. angl.* 135. *With.* 332. *Relh. cant. n.* 256. *Lightf. ſcot.* 175. *Pollich. pal. n.* 323. *Krock. ſileſ. n.* 494. *Villars dauph.* 2. 549. *Gærtn. fruct.* 291. *Plenck, ic. t.* 247. *f.* 2.
Rorella longifolia. *Allion. pedem. n.* 1600. *Hall. helv. n.* 833.
Ros ſolis. *Dod.* 474. 2.—minor. *Ger.* 1366. 2. *Bauh. hiſt.* 3. 761. 1.—ſylveſtris longifolius. *Park. theat.* 1052. 1. a.—fol. oblongo. *Bauh. pin.* 357. *Ger. emac.* 1556. 2. *Raii hiſt.* 1100. *ſyn.* 356. *Petiv. brit. t.* 63. *f.* 11. *Mor. hiſt. ſ.* 15. *t.* 4. *f.* 2.—major ſ. longifolius. *Barrel. ic.* 251. 11.
Salſirora, ſ. ſponſa ſolis, ſ. ros ſolis, ſ. rorella. *Thal. herc.* 116. *t.* 9. *f.* 2.
β. Dr. anglica. *Hudſ. angl.* 135. *With.* 332.
Rorella longifolia maxima. *Raii hiſt.* 1100. *ſyn.* 356. *Mor.* 15. 4. *fig. laſt. row.* 1. *Pet.* 63. 12. *Park.* 1052. 2.
γ. R. longif. perennis. *Raii ſyn.* 356. *hiſt.* 1100.
Scapes radicate, leaves ovate-oblong; (*ſtyles ſix*; in var. β. 8. *Hudſ.*)

5. Droſera capenſis. *Cape Sun-dew.*
Lin. ſpec. 403. *Reich.* 767. *mant.* 360. *Berg. cap.* 81. *Burm. afr.* 209. *t.* 75. *f.* 1. *Raii ſuppl.* 515. *Herm. afr.* 19. (Ros ſolis.)
Scapes radicate; leaves lanceolate, ſcabrous underneath.

6. Droſera luſitanica. *Portugueze Sun-dew.*
Lin. ſpec. 403. *ſyſt.* 304. *Reich.* 767. *mant.* 360.
Ros ſolis luſitanicus, fol. aſphodeli minoris. *Mor. hiſt.* 3. 620. *ſ.* 15. *t.* 4. *f.* 4. *Pluk. alm. t.* 117. *f.* 2. *Raii ſuppl.* 551.
Scapes radicate; leaves ſubulate, convex underneath, flowers ten-ſtamened.

7. Droſera ciſtiflora. *Ciſtus-flowered Sun-dew.*
Lin. ſpec. 403. *ſyſt.* 304. *Reich.* 767. *amœn.* 6. *afr.* 7. *Burm. afr.* 210. *t.* 75. *f.* 2. *Breyn. prodr.* 3. *t.* 22. *f.* 2. *Raii ſuppl.* 515. 1. (Ros ſolis.)
Stem ſimple, leafy, leaves lanceolate.

8. Droſera indica.
Lin. ſpec. 403. *Reich.* 768. *fl. zeyl. n.* 121. *Rheed. mal.* 10. *t.* 20. *Burm. zeyl.* 207. *t.* 94. *f.* 1.
Stem branched, leafy, leaves linear.

9. Droſera umbellata.
Lour. cochinch. 186.
Scapes rooted, leaves ovate, flowers umbelled.

DESCRIPTIONS, &c.

Theſe are herbs of a ſmall ſize, and ſingular ſtructure. The leaves, in moſt of the ſpecies, only next the root, furniſhed with glandulous hairs on the upper ſurface, and fringed with them round the edge: theſe hairs have each a ſmall globule of a pellucid liquor like dew, continuing even in the hotteſt part of the day, and in the fulleſt expoſure to the ſun. Hence their Engliſh name of *Sun-dew.*

1. This is ſingular for having a ſeſſile flower in the boſom of the root-leaves[a].

2. It reſembles the next ſpecies, but is larger, and has ſeſſile leaves, rounded at the ſummit, but gently attenuated towards the baſe. This and the foregoing are natives of the Cape of Good Hope, where they were firſt obſerved by Thunberg[b].

3. Root perennial, black. Root-leaves many, forming a tuft, two or three lines in length and breadth, ſet with red hairs about the edge, and on the upper ſurface, the under ſurface ſmooth; the petioles red, and half an inch or eight lines in length, ciliate at the baſe. Scape erect, round, ſlender, ſimple, three or four inches in height. Flowers in a kind of racemed ſpike, bent in at the top before flowering time; they point one way, are alternate, erect, and from ſix to eleven in number; the peduncles are half a line or a line in length. Corolla white: calyx ſmooth: ſtigmas obtuſe, white. Bractes none.—Flowers open from nine to twelve[c]. The young leaves, before they are expanded, are rolled inwards, and at the ſame time bent in to the very peduncle. *Droſera* and *Utricularia* are the only two plants which are common to Sweden and the Eaſt-Indies, and they are both water plants[d]. And Linneus remarks that Droſera is a native of all the four continents[e], on bogs. The Eaſt-Indian plant, however, is probably different from the European, and Vahl has ſeparated it under the name of Droſera Burmanni; with radicate ſcapes and ſmooth calyxes, the leaves ſpatulate and ſeſſile. He adds,

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[a] Linn. ſuppl.

[b] Ibid.

[c] Pollich & Krocker.

[d] Ibid & Linn. ſuec.

[e] Linn. zeyl.

adds, that the leaves are attenuated at the baſe, a quarter of an inch in length, and that the cilias are ſlender and equal. It is diſtinct from the preceding ſpecies (D. cuneifolia) in the ſmoothneſs of the ſcape and pedicels, and in being only one third of the ſize[f]. If this be a genuine ſpecies, the ſynonyms of the Flora Zeylanica, Burmann and Loureiro muſt be applied to it.

With us D. rotundifolia flowers in july and auguſt: and is found on Hampſtead heath; at Battle's well near Harefield, and Iver heath; on Hinton and Teverſham moors and Gamlingay bogs in Cambridgeſhire: on Malvern chace—Birmingham heath —Selborne in Hampſhire—Ludgvan Lee, on the Barton and Moors; and Senan, in Torvorian Commons; Cornwall.—Halſton in Northamptonſhire. —Near Mansfield and Oxton in Nottinghamſhire. In Scotland frequent.

β. Obſerved in Devonſhire by Tho. Willifel.

The whole plant is acrid and ſufficiently cauſtic to erode the ſkin; ſome ladies, however, know how to mix the juice with milk, ſo as to make it an innocent and ſafe application to remove freckles and ſun-burn. The juice that exſudes from it unmixed will deſtroy warts and corns.—The plant has the ſame effect upon milk as the *Pinguicula vulgaris*; and like that, too, is ſuppoſed to occaſion the rot in ſheep. Is not the ſour coagulated milk of the Syrians, called *Leban* or *Leven*, at firſt prepared with ſome plant of this kind[g]?

It is called in Engliſh *Sun-dew*, *Youth-woort*; in the north parts *Red-rot*, and in Yorkſhire *Mooregräſſe*[h]; in German, *Sonnenthau*, *Sindau*, *Lofflein-kraut*; in Dutch, *Zonnedaauw*, or *Loopigkruid*; in Daniſh, *Soeldug* or *Himmeldug*; in Swediſh, *Mariæ-Sileſhar*; in Smoland, *Daggort*; in Italian, *Rugiada del Sole*; in Spaniſh, *Rociada*, or *rocio del ſol*; in Portugueze, *Roſſolina*; in Ruſſian, *Solneznaja trawa*.

4. Linneus is of opinion that this is ſcarcely ſpecifically diſtinct from the foregoing, ſince they agree in every thing except the form of the leaves. Pollich affirms that the former has no bractes. Lyons (M. S. in Relh. cant.) writes that the latter has very ſmall, ſharp bractes, the length of the peduncles.—According to Hudſon they have both ſix ſtyles, and three-valved capſules. Gærtner informs us that the capſule opens to the middle into three, four or five valves. Scopoli does not heſitate to join this and the round-leaved Sun-dew together, and affirms that he has many ſpecimens ſhowing a gradual change from the one to the other. Haller will not allow that they ever change one to the other.—This ſeems not to be ſo common as the round-leaved ſort; Mr. Woodward, however, informs us that it is frequent in Norfolk; and Mr. Lightfoot, that it is ſo alſo in Scotland. On Brigſtear moſs near Kendal, it grows to twice or thrice the ſize it does about London.—It is alſo found on Hinton moor near Cambridge: on Bagſhot heath in Surrey; and at Selborne in Hants.

β. Great Sun-dew, which Mr. Hudſon makes a diſtinct ſpecies, becauſe it is larger, has eight ſtyles, and four-valved capſules: is common, as he informs us, in the northern counties; alſo in Devonſhire, Hampſhire and Norfolk; three miles from Carliſle towards Scotland; where Mr. Dickſon found it near Fort Auguſtus. Near Elleſmere in Shropſhire, and in Ireland.

γ. Found by Tho. Willifel in Yorkſhire between Doncaſter and Bautrey; and by Mr. J. Sherard on Weſtfield down near Haſtings.

Theſe plants have the ſame property with *Dionæa Muſcipula*, of entrapping ſmall inſects within their folded leaves. It was diſcovered by Mr. Whately, a ſurgeon, in auguſt 1780. On inſpecting ſome of the contracted leaves, he obſerved a fly in cloſe impriſonment; and on centrically preſſing other leaves, yet in their expanded form, with a pin, he obſerved a ſudden elaſtic ſpring of them, ſo as to become inverted upwards, and as it were encircling the pin. The ſame account occurs in a German author (Wroth. beytrog. p. 64.) in july 1779. An ant was placed on the middle of a leaf; the inſect endeavoured to eſcape, but was held faſt by the clammy juice at the points of the hairs: in ſome minutes the ſhort hairs on the diſk of the leaf began to bend, then the long hairs, and laid themſelves upon the ant: after a while the leaf began to bend, and in ſome hours the end of the leaf was ſo bent inwards as to touch the baſe. The ant died in fifteen minutes[i].

5. Root putting out ſpiral threads. Leaves ſcabrous, with tubercles underneath. Flowers violet-coloured. Native of the Cape of Good Hope[k].

6. The ſtem has a few leaves on it, and from two to four peduncled flowers at the end. Capſule twice as long as the calyx. The whole plant has briſtles glandular at the tip[l]. Ray will not allow it to be a ſpecies of this genus. Alſtroemer obſerved that it had conſtantly ten ſtamens; and therefore it would be an *Oxalis*, if the flowers were in an umbel, and the peculiar property of the leaves, together with its one-celled capſule, did not detain it in this genus.—Native of Portugal[m]. Collected there by Tournefort.

7. Stems a foot high, pubeſcent. Leaves alternate, with glutinous hairs. Flowers terminating, one to three, large, on peduncles[n]. The bottom of the corolla dark. Stamens black, the length of the calyx: anthers yellow, cordate. Piſtil black: germ ovate, and round the top, but not on the top of it, five black ſtyles, the length of the corolla, ſtigmas ſeveral times dichotomous, even into hairs[o]. Native of the Cape of Good Hope.

8. Stem herbaceous, a little branched. Leaves alternate, petioled. Peduncles axillary, with two or three flowers[p]. Native of the Eaſt-Indies.

The Ceyloneſe call it *Kandulaeſſa*, from *Kandula*, a tear: the leaves being ſurrounded by drops, as in our European ſpecies. The ſtem is half a foot high, and very ſlender. The leaves are extremely fine, and come out alternately all over the ſtem and branches, and are bent upwards at the ends. The peduncles are the length of the leaves, or longer, and ſuſtain three flowers or more; but the weaker only one[q].

9. Stem none. Leaves next the ground only on long petioles. Scapes various, naked, five inches long, terminated by an umbellule of about five flowers, with corollas of five petals. Native of China[r].

PROPAGATION AND CULTURE.

Theſe plants are not eaſily preſerved in gardens. They muſt be taken from their native bogs, with a ſufficient quantity of bog-earth and water moſs, and planted in pots, ſet in pans conſtantly ſupplied with water. They will ſucceed better if defended from the ſun, and well enveloped in moſs kept conſtantly wet.

DRYANDRA. (*So named by Thunberg in honour of his moſt beloved friend Jonas Dryander, M. A. a Swede, and moſt excellent botaniſt*[s]. *Now Librarian to Sir Joſeph Banks, and the Royal and Linnean Societies.*)

Thunb. gen. nov. 60. Fl. jap. 13. Juſſ. 389. Lin. gen. ed. Schreb. n. 1557.

Claſſ. 16. 4. Dioecia Monadelphia.

Nat. order of *Tricoccæ*.—*Euphorbiæ*. Juſſ.

GENERIC CHARACTER.

* *Male.*

Cal. *Perianth* two-leaved; *diviſions* ovate, acute, ſhorter than the corolla.

Cor. five-petalled. *Petals* obovate-oblong, from reflex patulous, unguicular.

Stam. *Filaments* nine, united below into one body, unequal, ſhorter by half than the corolla. *Anthers* minute.

* *Female.*

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[f] Symb. 3. 50.

[g] Withering.

[h] Gerarde.

[i] With. arr. p. 322 to 334.

[k] Bergius.

[l] Linn. mant.

[m] Linn. ſpec.

[n] Linn. amoen.

[o] Linn. ſyſt.

[p] Linn. zeyl.

[q] Burm.

[r] Loureiro.

[s] Thunb. jap.

Per. tricoccous or tetracoccous, three-grooved or four-grooved, wrinkled, fleſhy.

Seeds ſolitary, oblong.

Obs. *What Thunberg calls the corolla, Juſſieu names the calyx.*

ESSENTIAL CHARACTER.

Cal. two-leaved. *Cor.* five-petalled.—Or, *Cal.* five-leaved, reſembling a corolla, ſurrounded by a two or three-leaved calycle. *Stam.* nine. *Fruit* three or four-grained.

SPECIES.

1. Dryandra cordata.
Lin. ſyſt. 612. *Thunb. jap.* 267. *t.* 27. *Kæmpf. amœn.* 5. 789. *ic. ſelect. t.* 23.
D. oleifera. *Lamarck encycl.* 2. 329.

DESCRIPTION, &c.

Stem arboreous, a fathom or more in height. Branches round, with a wrinkled back, dotted, ſmooth. Leaves at the ends of the twigs, approximate, alternate, petioled, cordate, acute, entire, five-nerved, the nerves branching, ſmooth, paler underneath, ſpreading, a hand in length and breadth. Petioles almoſt the length of the leaf, round. Flowers terminating, in a panicle, the branches of which are dichotomous or trichotomous, and patulous. Petals yellow. From the ſeeds they expreſs an oil for lamps, and the table[b].

Stipules caducous; the end of the petiole glandulous. Peduncles among the leaves terminating, three or four-flowered.—*Elæococca* of Commerſon, commonly called *Arbre d'huile* or Oil-tree, if not the ſame with this, is of this genus. It has uſually ten ſtamens, the outer ſhorter, and five oily ſeeds[c].

Since Lamarck, from Commerſon's ſpecimens, deſcribes the peduncles on the female tree as ſimple and one-flowered, which in Kæmpfer's figure are compound, we are not certain that the tree cultivated in the royal garden in the iſland of Mauritius is of the ſame ſpecies with that which Thunberg obſerved in Japan[d]: where it is called *Abraſin.*]

DRYAS. (*So called by Linneus, from the Dryades or Nymphs of the oaks; the leaves bearing ſome reſemblance to thoſe of the oak.*)

[*Lin. gen. n.* 637. *Reich.* 693. *Schreb.* 868. *Gærtn.* 74. *Juſſ.* 338.

Claſſ. 12. 5. Icoſandria Polygynia.

Nat. order of *Senticoſæ.*—*Roſaceæ.* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, eight-parted: *diviſions* ſpreading, linear, obtuſe, equal, a little ſhorter than the corolla.

Cor. *Petals* eight, oblong, emarginate, ſpreading, inſerted into the calyx.

Stam. *Filaments* numerous, capillary, ſhort, inſerted into the calyx. *Anthers* ſmall.

Pist. *Germs* many, crowded, ſmall. *Styles* capillary, inſerted into the ſide of the germ. *Stigmas* ſimple.

Per. none.

Seeds numerous, roundiſh, compreſſed, furniſhed with extremely long woolly *ſtyles.*

Obs. *The calyx varies in diviſions from ſix to ten, with as many petals as there are diviſions in the calyx.* S.

ESSENTIAL CHARACTER.

Cal. five to ten-cleft (ſix to ten-cleft. *S.* eight or ten-cleft. *G.*) *Pet.* five to eight. *Seeds* tailed, hairy.

SPECIES.

1. Dryas anemonoides.
Lin. ſyſt. 480. *Pallas it.* 3. 733. *t.* Ec. *f.* 4.
D. pentapetala. *Lin. ſpec.* 717. *amœn.* 2. 353. *Reich.* 2. 553. *Gmel. ſib.* 3. 187. *n.* 43.
Anemone puſilla. *Comm. nov. petrop.* 14. 1. 543. *t.* 19. *f.* 2, 3.
Caryophyllata pentaphyllea. *Bauh. hiſt.* 2. 398. *Raii ſyn.* 254. *hiſt.* 608. 10. *Park. theat.* 137.
C. alpina quinquefolia. *Bauh. pin.* 322. *Ger.* 843. *emac.* 995. 3.
Five-petalled; leaves pinnate, with all the pinnas diſtinct.

2. Dryas octopetala.
Lin. ſpec. 717. *ſyſt.* 481. *Reich.* 2. 553. *fl. lapp. n.* 215. *ſuec. n.* 462. *hort. cliff.* 195. *Hudſ. angl.* 226. *With.* 539. *Penn. hebr.* 33. *p.* 285. *Lightf. ſcot.* 274. *Hall. helv. n.* 1133. *Scop. carn. n.* 631. *Segu. veron.* 512. *Gmel. ſib.* 3. 188. *Fl. dan. t.* 31. *Pallas. it.* 3. 733. *Gærtn. fruct.* 352. *Villars dauph.* 3. 580.
Caryophyllata alpina chamædryos folio. *Mor. hiſt.* 2. 432. *ſ.* 4. *t.* 26. *f.* 9. *Raii ſyn.* 253. *hiſt.* 688. 11.
Chamædrys 3. f. montana. *Cluſ. hiſt.* 2. 351. 2. *pann.* 611.
Ch. alpina ciſti flore. *Bauh. pin.* 248.
Ch. ſpuria montana ciſti fl. *Park. theat.* 106. 1.
Ch. montana durior. *Lob. ic.* 495. 1, 2.
Teucrium alpinum ciſti fl. *Ger.* 533. 4. *emac.* 659. 6.
Eight-petalled; leaves ſimple.

DESCRIPTIONS, &c.

1. This is a very ſmall plant, native of Siberia; the radical leaves are commonly ternate, compound, conſiſting of a middle leaflet longer than the reſt, and two lateral ones: all the leaflets are deeply cut or divided, but vary much in different individual plants as to breadth and length; ſometimes the leaves have more than three diviſions; they are of a bright green, and very ſmooth; the foot-ſtalk is round: the ſtalk is terminated by a ſingle flower, which is large in proportion: the calyx is outwardly green, and inwardly lanuginous, and of a ſilvery appearance: the corolla is pale yellow, the petals ſtriated: the ſtamens are extremely numerous, and ſhort; the germs converge into a globe, and are coated with a white down.

2. This delicate ever-green plant, with its ſnow-white bloſſoms, is a great ornament to alpine heights[b]. The ſtalk and branches are woody and perennial, lying flat upon the ground, and ſpreading wide about the root in tufts[c]. Leaves ever-green, ovate, turned back at the edge, ending very obtuſely, and ſometimes emarginate, deeply and bluntly ſerrate, or more properly crenate, hard and ſtiff, of a dark green, wrinkled ſurface on the upper ſide, and hoary underneath, having woolly foot-ſtalks, and a large halbert-ſhaped ſtipule to each, embracing the ſtem. Peduncles naked, downy, ſcattered with purple hairy glands, each bearing one flower[d], an inch in diameter[e]; conſiſting generally of eight petals, but ſometimes of ten or ſix, ſeldom of five[f]. Seeds oblong, gibbous on one ſide, ſtraightiſh on the other, ſomewhat villoſe, reddiſh brown, narrowing at bottom, ending at top in a feathered flexile tail, eight times the length of the ſeed[g]. The corolla is frequently double. The ſtructure of the ſtipules renders this genus the connecting link between *Roſa* and the reſt of the *Senticoſæ*[h].

Monſ. Villars ſays, it has the leaves of Germander, the petals and fruit of Anemone, the calyx and ſtamens of Geum, with which genus it might be united. It forms large tufts like *Arbutus alpina*, but the leaves are crenate and ſmaller, and the flowers are very different.

Native of high mountains in Lapland, Denmark, Switzerland, where Ray obſerved it on Thuiri, one of the higheſt points of mount Jura; the Griſons, Savoy, Auſtria, Carniola, Stiria, Carinthia, Germany, France, Italy, Siberia, Ireland, Scotland, and the north of England. As between Gort and Galloway, where it was found by Mr. Heaton, and near Sligo in Ireland. Breadalbane, Iſle of Skye; Roſs-ſhire; Sutherland, and Argyleſhire, in Scotland. Arncliff Clowder in Littendale, near Kilnſay; and near Settle, in Yorkſhire. It flowers in june. No cattle eat it[i].

Dryas pentapetala, mentioned by Sibbald as growing in the den of Bethaick, four miles from

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[b] Thunberg. [c] Juſſieu. [d] Kæmpf. ic. ſelect. p. 2.

[b] Linn. ſuec. [c] Lightfoot. [d] Linn. ſuec. Lightf. Woodw. Mſſ. [e] Scopoli. [f] Crantz. [g] Gærtner. [h] Stokes in With. [i] Withering.

Perth, is not now to be found there; poſſibly the *Potentilla argentea* was miſtaken for it[k].

Dryas geoides. See *Geum potentilloides.*

Dryopteris. See *Aſplenium* and *Polypodium.*

DRYPIS. (Δρυπις *of Theophraſtus; a prickly ſhrub:* απὸ του δρυπτειν, *from its prickly tearing quality.*)

Lin. gen. n. 381. *Reich.* 412. *Schreb.* 519. *Gærtn. t.* 128. *Mich.* 23. *Mygind. Jacq. vind.* 304. *Juſſ.* 303.

Claſſ. 5. 3. Pentandria Trigynia.

Nat. order of *Caryophyllei.*

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, tubular, half-five-cleft, permanent.

Cor. *Petals* five. *Claws* length of the calyx, narrow. *Border* flat: plates two-parted: *diviſions* linear, obtuſe: *Throat* crowned with the two toothlets of each petal.

Stam. *Filaments* five, length of the corolla. *Anthers* ſimple, oblong, incumbent.

Pist. *Germ* obovate, compreſſed. *Styles* three, ſimple, patulous; *Stigmas* ſimple.

Per. *Capſule* roundiſh, covered by the calyx, one-celled, ſmall, clipped round.

Seed ſingle, kidney-form, gloſſy.

ESSENTIAL CHARACTER.

Cal. five-toothed. *Pet.* five. *Capſ.* clipped round, one-ſeeded.

SPECIES.

1. Drypis ſpinoſa.

Lin. ſpec. 390. *ſyſt.* 298. *Reich.* 1. 747. *mant.* 359. *Gærtn. fruct.* 2. 218. *Jacqu. hort.* 1. 19. *t.* 49. *vind.* 304. *Scop. carn. n.* 377. *Mich. gen.* 24. *t.* 23. *Dalech. hiſt.* 1480. *Lob. ic.* 789. *Tabern. ic.* 144. *Ger. emac.* 1112. *Mor. hiſt.* 3. 161. *ſ.* 7. *t.* 32. *f.* 8. (Carduus.) *Park. theat.* 982. *f.* 7.

Spina umbella foliis vidua. *Bauh. pin.* 388.

DESCRIPTION, &c.

The firſt ſtems are procumbent, four-cornered, brachiate; the laſt dichotomous and flower-bearing. Freſh green branches puſh forth in the ſpring from the dry ones of the former year, the extreme ones are dichotomous, and bear flowers. Leaves ſubulate, ſomewhat three-cornered, mucronate; thoſe at the ſubdiviſions of the ſtem are lanceolate, with three teeth on each ſide. Peduncles ſhorter than the flower. Calyx erect: corolla crowned, as in *Silene*, purple or white; petals very narrow, ſpreading: ſtamens erect. Biennial[l].—Native of Barbary, Italy, Iſtria.

This plant in its adult ſtate becomes ſhrubby. Branches very frequent, patulous. Upper leaves flat, convex underneath, under the topmoſt branches below the middle on both ſides putting forth ſpiny teeth on the edge. Petals red. Capſule ſo covered with the converging hardened calyx, that they ſhould fall together, without the capſules opening: it is not therefore five-valved, as Micheli aſſerts it to be; nor is it *circumſciſſa*, as Linneus[m].

The fruit is thus deſcribed by the accurate Gærtner. It is a capſule covered by the calyx, ovate, mucronate at top, ſlightly narrowed at bottom, membranaceous, very thin, diaphanous, one-celled, clipped round above the middle. The ſeed is faſtened by a filiform umbilical chord, aſcending from the bottom of the capſule to the emarginate ſide of the ſeed: it is ſingle, the ſame ſize with the capſule, kidney-form, beaked, keeled on the back with a prominent line, compreſſed, lens-ſhaped, ſmooth, ſomewhat ſhining, fulvous, or bay yellow.

Introduced 1775, by Joſ. Nich. de Jacquin[n]. It is named *Sperage Thiſtle* by Johnſon in Gerarde. In Italy they call it *Erba Ciuccia*, or Aſs herb, becauſe that animal feeds freely on it.

Drypis. See *Cucubalus* and *Salſola.*

Duck's-Foot. See *Podophyllum.*

Duck's-Meat. See *Lemna.*

Dudaim. See *Cucumis.*

Duglassia. See *Douglaſſia* and *Volkameria.*

Dulcamara. See *Solanum.*

Dulcis Radix. See *Glycyrrhiza.*

Dung. See *Manure.*]

DURANTA. (*So named by Linneus in memory of Caſtor Durantes, phyſician to Pope Sixtus V. He publiſhed Herbarium,* 1584. *Plumier named the genus Caſtorea.*)

Lin. gen. n. 786. *Reich.* 849. *Schreb.* 1052. *Caſtorea. Plum.* 17. *Gærtn.* 57. *Juſſ.* 109. *Elliſia Brown.* 29. *f.* 11. *Loefl. it.* 174.

Claſſ. 14. 2. Didynamia Angioſpermia.

Nat. order of *Perſonatæ.—Vitices,* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, tubular, ſomewhat truncated, five-cleft.

Cor. one-petalled. *Tube* longer than the calyx, ſomewhat curved. *Border* patulous, five-parted, nearly equal, rounded.

Stam. *Filaments* four, the two longer ones within the tube. *Anthers* roundiſh.

Pist. *Germ* inferior, roundiſh. *Style* filiform, length of the ſtamens. *Stigma* thickiſh.

Per. *Berry* roundiſh, covered by the calyx.

Seed. *Kernels* four, two-celled.

ESSENTIAL CHARACTER.

Cal. five-cleft, ſuperior. *Berry* four-ſeeded. *Seeds* two-celled. (*Cal.* five-toothed. *Cor.* funnel-ſhaped, five-cleft. *Berry* one-celled, containing four two-celled ſtones. *G.*)

SPECIES.

1. Duranta Plumieri. *Smooth Duranta.*

Lin. ſpec. 888. *ſyſt.* 577. *Reich.* 3. 195. *Jacqu. amer.* 186. *t.* 176. *f.* 76. *pict.* 92. *t.* 261. *f.* 53. *Gærtn. fruct.* 272.

D. ſpinoſa. *Lin. ſpec. edit.* 1. 637.

Caſtorea repens ſpinoſa. *Plum. ic. t.* 79.

β. D. inermis. *Lin. ſpec. ed.* 1. 637.

D. racemoſa. *Mill. dict. n.* 2.

C. racemoſa, fl. cæruleo, fr. croceo. *Plum. ic. t.* 79.

Fruiting calyxes twiſted.

2. Duranta Elliſia.

Lin. ſpec. 888. *ſyſt.* 577. *Reich.* 3. 195. *Jacqu. amer.* 187. *t.* 176. *f.* 77. *pict.* 92. *t.* 179. *hort.* 3. *t.* 99. *Swartz obſ.* 247.

Elliſia acuta. *Lin. amœn.* 5. 400. *Loefl. itin.* 194. *Brown. jam.* 262. *t.* 29. *f.* 1. *Mill. dict. edit.* 7. *add. Sloan. jam.* 297. (Jaſminum.)

Fruiting calyxes erect.

[3. Duranta Mutiſii.

Lin. ſyſt. 577. *ſuppl.* 291.

Leaves elliptic, quite entire.

DESCRIPTIONS, &c.

Theſe are ſhrubs with quadrangular branches. The flowers are in looſe ſpikes either from the axils, or at the ends of the branches. They have generally axillary ſpines; and they are ſo alike in their manner of flowering, as well as in the ſtructure and colour of the flower, that it is doubtful whether they may not be all one ſpecies[o].

1. This grows fifteen feet high, with alternate branches, erect or reclining. Spines awl-ſhaped, oppoſite, but very frequently wanting. Leaves lanceolate, on ſhort petioles, acute, bluntly and unequally ſerrate above the middle, ſmooth, oppoſite, two inches long. Racemes looſe, wide, reclining, both axillary and terminating. Flowers ſlightly ſweet-ſmelling, very many, blue, on very ſhort peduncles. Fruit yellow; the calyx alſo then becoming yellow, and like a berry, the whole being changed, and different from its former ſhape[p].

Gærtner thus deſcribes the fruit. It is a ſucculent Berry, involved in the calyx, ovate-globular, red or ſaffron-coloured, one-celled, with four hard, three-ſided ſtones, bowed on the back, and two-celled. Calyx when ripe bellying, marked with four deeper-coloured fillets, and four others that are pale and diaphanous; it is contracted above, and five-toothed; with awl-ſhaped teeth twiſted towards the right hand. There is a ſingle ſeed in each cell, of the ſame ſhape with it, rufeſcent, fixed by its baſe.

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[k] Lightfoot.

[l] Linn. ſpec. ſyſt. & mant.

[m] Scopoli.

[n] Hort. kew.

[o] Juſſieu & Linn. ſuppl.

[p] Jacquin.

Linneus originally made two ſpecies of this, and Miller continues them diſtinct; adding a third, under the name of *Durantia erecta*, which is probably our ſecond ſpecies D. Elliſia. He thus deſcribes them.] 1. Has many trailing branches, armed with hooked thorns at every joint, and having oblong leaves, placed without order, and ſlightly ſerrate. Flowers from the ſide of the ſtalks in pretty long bunches, like thoſe of the common Currant; they are of a pale blueiſh colour, and are ſucceeded by brown berries, not unlike thoſe of the Hawthorn; having one cell, and incloſing four angular ſeeds. 2. (1 β inermis.) Has a branching woody ſtalk, ſeven or eight feet high. Leaves ovate-lanceolate, three inches long, and an inch and half broad in the middle, ſerrate, of a lucid green colour, and oppoſite. Flowers in long, terminating bunches; they are blue, and are ſucceeded by pretty large, round, yellow berries, containing four angular ſeeds. 3. Riſes with a ſtrong, upright, woody ſtem, to the height of ten or twelve feet, covered with a white bark, dividing into many branches, armed with ſharp thorns. Leaves ovate, ſtiff, an inch long, and three quarters of an inch broad, quite entire. Flowers in long terminating bunches; they are blue, and are ſucceeded by ſmall round yellow berries, containing four angular ſeeds.

[Native of South America, and the Weſt-India iſlands.

Introduced before 1733 by William Houſtoun, M. D.[q]

2. This ſhrub is a fathom in height or more, branched and even. Branches long, reclining, quadrangular, ſubdivided, with axillary, oppoſite, awl-ſhaped ſpines, which however are ſometimes wanting. Leaves petioled, oppoſite, ovate-lanceolate, acuminate, ſerrate, nerved, ſmooth on both ſides. Racemes compound, terminating, brachiate, many-flowered, Flowers on ſhort peduncles, and blue.

The ſpecific character of this and the preceding, taken from the contorſion of the calyx above the fruit, is vague and inſufficient; ſince the differences occur frequently in the ſame raceme. They are therefore in all probability not ſpecifically diſtinct[r]. Jacquin alſo remarks, that it is extremely like the firſt ſpecies, except that the fruiting calyx is not twiſted in the upper part, but continues convergent and erect.

Notwithſtanding this approximation, Dr. Patrick Browne made it a diſtinct genus under the name *Elliſia*, from Mr. Ellis the ingenious author of a treatiſe on Zoophytes, or plant-like marine productions of an animal nature. He ſays that this ſhrub riſes frequently to the height of ſix or ſeven feet; that the leaves are very like thoſe of green Tea; and that the branches, though ſometimes beſet with thorns, are often otherwiſe.—Native of the Weſt-Indies. In Jamaica frequent in hedges, between Kingſton and San Jago de la Vega.

Cultivated in 1739, by Mr. Miller.

3. This differs no otherwiſe from the two other ſpecies than in the leaves. Native of South America, and found there by Mutis[s].]

PROPAGATION AND CULTURE.

Theſe plants being natives of warm countries, they require a ſtove to preſerve them in England; they are propagated by ſeeds, which ſhould be ſown in ſmall pots, and plunged into a hot-bed of tanner's bark; and when the plants are fit to remove, they muſt be planted each into a ſeparate ſmall pot filled with light earth, and plunged into the hot-bed again, obſerving to ſhade them till they have taken new root, then they muſt be treated in the ſame manner as other plants from the ſame country.

The ſecond ſort (1 β) may be propagated by cuttings, which may be planted in any of the ſummer months; but theſe ſhould be plunged into a moderate hot-bed, and ſhaded from the ſun till they have taken root, then they may be treated in the ſame manner as the ſeedling plants. This being not ſo tender as the other two, may be placed in the open air in ſummer; and if kept in a moderate temperature of warmth in the winter, will thrive better than in great heat. I kept ſome of the plants of this ſort three winters, in a dry warm glaſs caſe without fires, and they ſucceeded pretty well; but the winter of 1762 proving ſevere, their leaves fell; they put out again, however, very well.

[Theſe, whether they be ſpecies or varieties, may alſo certainly be increaſed by cuttings, which put out roots very readily.] They thrive beſt during winter in a temperate heat; for when they are too tenderly treated, their ſhoots are apt to be weak, and then they are attacked by vermin. In ſummer, place them in a warm ſheltered ſituation in the open air[t].

[DURIO.

Lin. gen. Schreb. 1221. *Reich. n.* 977. *Juſſ.* 244. *Rumph. amb.* 1. *p.* 99.

Claſſ. 18. 4. Polyadelphia Polyandria.

Nat. order of *Putamineæ.—Capparides,* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, pitcher-ſhaped, five-lobed; lobes rounded; deciduous.

COR. *Petals* five, added to the calyx, and leſs than it, concave.

STAM. *Filaments* in five bodies, divided into ſeven, ſubulate, longer than the corolla. *Anthers* twiſted. (Or, according to Juſſieu, *filaments* five, flat at the baſe, ſeven or eight-cleft at the top, the *diviſions* connate, ſubulate, bearing thirty-five to forty twiſted *anthers*.

PIST. *Germ* roundiſh, ſtipitate; *Style* briſtle-form, length of the ſtamens. *Stigma*

PER. *Pome* roundiſh, on all parts muricated with many-ſided dagger points, five-celled, gaping open in five directions; cells one to five-ſeeded.

SEEDS large, ovate, involved in a mucoſe pulp, in a membranaceous aril. *J.*

OBS. *The character of the genus is to be amended by eye-witneſſes.*

ESSENTIAL CHARACTER.

Cal. five-cleft, pitcher-ſhaped, inferior. *Cor.* five-petalled, ſmall. *Style* one. *Stam.* in five bodies. *Pome* five-celled.

SPECIES.

1. Durio Zibethinus.

Lin. ſyſt. 698. *Reich.* 3. 587. *Rumph. amb.* 1. 99. *t.* 29.

DESCRIPTION, *&c.*

A lofty tree with flowers below the leaves, which are alternate. Native of the Eaſt-Indies[a].

The leaves reſemble thoſe of the cherry, but are not dented at the edges, and are therefore in reality more like nutmeg leaves. The flowers are borne in looſe heads. They are large, and of a pale yellow-white colour. The fruit is the ſize of a man's head, and round or oblong; reſembling in ſome degree a rolled-up hedge-hog, with a hard bark or rind; the fleſhy part of the fruit is of a creamy ſubſtance, and of a delicate taſte; but of an unpleaſant heavy ſmell, ſomewhat reſembling that of rotten onions; and the ſmell of the breath of thoſe who eat it is infected alſo in a high degree; but when once a perſon has accuſtomed himſelf to eat this fruit, he generally conſiders it as the moſt excellent of all others[b].

DUROIA. (*So named in memory of Jo. Phil. Du Roi, a phyſician at Brunſwick, author of Obſervationes Botanicæ, and Hortus Harbeccenſis.*)

Lin. ſuppl. 30. *n.* 1384. *Schreb. gen. n.* 592. *Juſſ.* 203.

Pubeta. *Amœn. acad.* 8. 264.

Claſſ. 6. 1. Hexandria Monogynia.

Nat. order of *Rubiaceæ.* Juſſ.

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[q] Hort. kew. from Mill. dict. Caſtorea 1.

[r] Swartz.

[s] Linn. ſuppl.

[t] Miller edit. 7. add. Elliſia.

[a] Linn. ſyſt.

[b] Rumphius.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, cylindric, truncate, contracted, very ſhort, ſuperior.

Cor. monopetalous: *tube* cylindric: *border* length of the tube, ſix-parted; *diviſions* ovate, ſpreading.

Stam. *Filaments* none: *anthers* ſix, oblong, within the tube.

Pist. *Germ* inferior: *ſtyle* filiform, the length of the tube: *ſtigmas* two.

Per. *Pome* globular, umbilicate, covered with erect hairs.

Seeds very many, neſtling, oval, flat, very ſmooth, incumbent, in a double row.

Obs. *The flowers are frequently abortive; nay, there are ſome genuine male flowers without any germ. It ſhould therefore be referred rather to the claſs Polygamia.*

ESSENTIAL CHARACTER.

Cal. cylindric, truncate. *Cor.* ſix-parted. *Filaments* none. *Pome* hiſpid.

SPECIES.

1. Duroia Eriopila.

Lin. ſyſt. 342. *ſuppl.* 209. *Merian. ſurin. t.* 43?

DESCRIPTION, &c.

A tree with thick, unequal branches, hirſute at the end. Leaves terminating, oppoſite, approximating, many, ſubpetioled, a ſpan in length, obovate, quite entire, obtuſiſh, ribbed, pubeſcent above, netted underneath. Petioles very ſhort, hirſute. Flowers at the ends of the branches, ſeſſile, heaped, many, ſeveral of them abortive. Corollas white, like thoſe of *Nyctanthes Sambac.* Fruit ſomewhat larger than a turkey's egg, ſpherical, covered very thick with erect, brown hairs; umbilicate, with the hollow calyx. It is well flavoured, and much eſteemed at Surinam, of which it is a native[a].

Dwale. See *Atropa.*]

DWARF-TREES. Theſe were formerly in much greater requeſt than they are at preſent; for though they have many advantages to recommend them, yet the diſadvantages attending them greatly overbalance; and ſince the introducing of eſpaliers into the Engliſh gardens, Dwarf-trees have been in little eſteem for the following reaſons;

1ſt, The figure of a Dwarf-tree is very often ſo much ſtudied, that, in order to render the ſhape beautiful, little care is taken to procure fruit, which is the principal deſign in planting theſe trees.

2dly, The branches being ſpread horizontally near the ſurface of the ground, render it very difficult to dig or clean the ground under them.

3dly, Their taking up too much room in a garden, eſpecially when they are grown to a conſiderable ſize, ſo that nothing can be ſown or planted between them.

4thly, Theſe trees ſpreading their branches near the ground, continually ſhade the ſurface of the earth; ſo that neither the ſun nor air can paſs freely round their roots and ſtems, to diſſipate noxious vapours, whereby the circumambient air will be continually replete with crude rancid vapours, which, being drawn in by the fruit and leaves, will render its juices crude and unwholeſome, as well as ill taſted.

It is alſo very difficult to get to the middle of theſe Dwarf-trees in the ſummer, when their leaves and fruit are on the branches, without beating off ſome of the fruit, and breaking the young ſhoots; whereas, the trees on an eſpalier can at all times be come at on each ſide, to tie up the new ſhoots, or to diſplace all vigorous ones, which, if left on, would rob the trees of their nouriſhment.

Add to this, the fruit-buds of all ſorts of Pears and Apples, and moſt ſorts of Plumbs and Cherries, are firſt produced at the end of the former year's ſhoot, which muſt be ſhortened in order to keep the Dwarfs to their proper figure, ſo that the fruit-buds are cut off, and a greater number of branches are obtained, than can be permitted to ſtand; ſo that all thoſe ſorts of fruit-trees, whoſe branches require to be trained at their full length, are very improper to train up as Dwarfs; and the Peaches and Nectarines which will bear amputation, are too tender to be trained ſo in this country.

Theſe evils being entirely remedied by training the trees to an eſpalier, has juſtly gained them the preference; however, if any one has a mind to have Dwarf-trees, notwithſtanding what has been ſaid, I ſhall lay down a few rules for their management.

If you deſign to have Dwarf Pear-trees, you ſhould bud or graft them on Quince ſtocks; but as many ſorts of Pears will not thrive if they are immediately budded or grafted on Quince ſtocks, ſo ſome of thoſe ſorts which will take freely, ſhould be firſt budded on the Quince ſtocks; and when theſe have ſhot, the ſorts you intend to cultivate, ſhould be budded into theſe; for free ſtocks are apt to make them ſhoot ſo vigorouſly, as not to be kept within bounds. Theſe grafts or buds ſhould be put in about four or ſix inches above the ſurface of the ground, that the heads of the trees may not be advanced too high; and when the bud or graft has put out four ſhoots, you ſhould ſtop the end of the ſhoots, to force out lateral branches.

Two years after budding, theſe trees will be fit to tranſplant where they are to remain; for though many people chuſe to plant trees of a greater age, yet they ſeldom ſucceed ſo well as young ones. The diſtance theſe trees ſhould be planted is twenty-five or thirty feet aſunder, for leſs will not do if the trees thrive well. The ground between them may be cultivated for kitchen-garden herbs while the trees are young, but you ſhould not ſow or plant too near their roots.

In order to train your trees regularly, you ſhould drive ſtakes into the ground round the tree, to which the branches ſhould be faſtened down with liſt in a horizontal poſition; for if they are ſuffered to grow perpendicularly while young, they cannot be afterwards reduced without great violence to any tolerable figure. The neceſſary directions to be afterwards followed are, not to ſuffer any branches to croſs each other; and always in ſhortening any ſhoots be ſure to leave the uppermoſt eye outwards, whereby the hollowneſs in the middle of the tree will be better preſerved; and be careful to rub off all perpendicular ſhoots in the middle of the trees, as ſoon as they are produced. The other neceſſary rules you will find under the article of Pruning.

The ſorts of Pears which do beſt in Dwarfs, are all ſummer and autumn fruits; for winter Pears are not worth planting in Dwarfs, they ſeldom bearing well, nor are ever well taſted, and commonly are very ſtony, becauſe they are commonly grafted on Quince ſtocks.

Apples are alſo planted in Dwarfs, moſt of which are now budded or grafted on Paradiſe ſtocks; but as theſe are for the moſt part of a ſhort duration, they are not profitable, and are fit only for ſmall gardens as a matter of curioſity, producing fruit ſooner, and in greater plenty, than when they are upon Crab or Apple ſtocks.

The diſtance theſe trees ſhould be planted, if on Paradiſe ſtocks, ſhould be ſix or eight feet, and upon Dutch ſtocks eighteen or twenty; but if on Crab ſtocks, twenty-five or thirty feet aſunder each way. The management of theſe being the ſame with Pears, I need not repeat it.

Some perſons alſo plant Apricots and Plumbs for Dwarfs, but theſe ſeldom ſucceed well, as being of a tender conſtitution; and thoſe which will produce fruit on Dwarfs, are much more likely to do ſo when trained on an eſpalier, where they can be much better managed; and therefore I judge it much the better method, as being more certain, and the trees will make a better appearance.

[Dyer's Weed. See *Geniſta* and *Reſeda.*

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[a] Linn. ſuppl.

E.

EARTH NUT. See *Arachis* and *Bunium.*

EARTH PEA. See *Lathyrus.*

EARWORT. See *Hedyotis.*

EBENASTER & EBENUM. See *Dioſpyros.*]

EBENUS. (Εϐενος *or* ἐϐελος *of the Greeks*; Ebenus *or* Ebenum *of the Romans. From the Hebrew* Heben.)
Lin. gen. n. 895. *Reich.* 938. *Schreb.* 1175.
Claſſ. 17. 4. Diadelphia Decandria.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, bell-ſhaped, terminated by five filiform teeth, which are villoſe, and nearly equal.

COR. papilionaceous, length of the calyx.
Standard roundiſh, ſtraight, entire. Rudiments of *wings* obſcure, creſcent-ſhaped.
Keel creſcent-ſhaped, gibbous, aſcending at the tip.

STAM. *Filaments* diadelphous, all growing together into a ſheath, with tips diſtinct. *Anthers* roundiſh.

PIST. *Germ* roundiſh, villoſe. *Style* capillary. *Stigma* terminal, acuminate.

PER. *Legume* ovate.

SEED ſingle, rough with hairs.

ESSENTIAL CHARACTER.

Cal. with teeth, the length of the corolla. *Wings* ſcarcely any. *Seed* one, rough with hairs.

SPECIES.

1. Ebenus cretica. *Cretan Ebony.*
Lin. ſpec. 1076. *Reich.* 3. 438. *mant.* 451. *Alp. exot.* 279. *t.* 228. *Pona ital.* 128. *Barr. ic. t.* 377 & 913. (Barba Jovis.) *Pluk. alm. t.* 67. *f.* 5. (Loto affinis).
Cytiſus incanus creticus. *Bauh. pin.* 390.
Leaves ternate, quinate or pinnate, with two pairs of leaflets, ſpikes terminating.

[2. Ebenus pinnata. *Pinnated Ebony.*
Ait. hort. kew. 3. 27. *L'Herit. ſtirp. nov.* 2. *t.* 38.
Leaves pinnate, with four pairs of leaflets, ſpikes axillary, on very long peduncles.

DESCRIPTIONS, &c.

1. This riſes with a ſhrubby ſtalk three or four feet high, with ſeveral ſide branches. Leaves at each joint, hoary, compoſed of five narrow lanceolate leaflets, which join at their tails to the footſtalk, and ſpread out like the fingers of a hand. The branches are terminated by thick ſpikes of large purple flowers: the ſpikes are from two to three inches long, and make a fine appearance. It flowers in june and july, and in very warm ſeaſons will ſometimes perfect ſeeds in England. It grows naturally in Crete, and ſome iſlands of the Archipelago.

[Lamarck and Juſſieu refer this plant to the genus Anthyllis. Linneus obſerves that the bractes are ovate, acute and ſcarioſe. Calyxes ſeſſile, with ſetaceous villoſe teeth, the length of the flowers[a]. It was cultivated in 1748 by Mr. Miller[b].

2. Biennial. Native of Barbary and the Levant. Introduced in 1786, by Monſ. Thouin. It flowers in july[c].]

PROPAGATION AND CULTURE.

Theſe are propagated by ſeeds, which ſhould be ſown in the autumn, for thoſe which are ſown in the ſpring often fail; they muſt be ſown in pots, and placed under a frame in the winter, where they may be protected from froſt. In the ſpring the plants will come up, they ſhould be kept clean from weeds, and refreſhed now and then with water. When theſe have acquired ſtrength enough to be removed, they ſhould be each planted in a ſeparate ſmall pot filled with light earth, and plunged into a moderate hot-bed juſt to promote their taking new root; then they ſhould be gradually inured to bear the open air, into which they ſhould be removed the latter end of may; placing them in a ſheltered ſituation, where they may remain till autumn, when they muſt be removed into ſhelter; for theſe plants will not live in the open air through the winter, nor ſhould they be too tenderly treated, leſt they draw up weak. I have found them ſucceed beſt when placed in an airy glaſs caſe without fire in winter, where they will have more ſun and air than in a green-houſe. During the winter ſeaſon, the plants muſt be ſparingly watered, but in the ſummer they will require to be often refreſhed. The other management is the ſame as for other of the hardier exotic plants, among which they will make a fine variety.

[EBENUS, & EBONY. See *Amerimnum* and *Dioſpyros.*]

EBULUS. See *Sambucus.*

[ECASTAPHYLLUM. See *Dalbergia.*

ECBOLIUM. See *Juſticia.*]

ECHINOMELOCACTUS. See *Cactus.*

ECHINOPHORA. (*From* Εχινος, *a Hedge-hog, and* φερω, *to bear. On account of the pricklineſs of its fruit.*)
Lin. gen. n. 329. *Reich.* 359. *Schreb.* 461. *Mant.* 217? *Tourn.* 423. *Juſſ.* 225.
Claſſ. 5. 2. Pentandria Digynia.
Nat. order of *Umbellatæ*, or *Umbelliferæ.*

GENERIC CHARACTER.

CAL. *Umbel univerſal* with very many rays; the intermediate ones ſhorter. *Partial* with very many ſeſſile flowers: the *central* one ſeſſile; receiving the germs between the pedicels.
Involucre univerſal with ſome ſharp rays. *Partial* turbinate, one-leafed, ſix-cleft, acute, unequal.
Perianth proper five-toothed, permanent; very ſmall.

COR. *Univerſal* difform, rayed, *floſcules* male, abortive; the central one of the umbel *female.*
Proper five-petalled: *Petals* unequal, patulous.

STAM. *Filaments* five, ſimple; *Anthers* roundiſh.

PIST. *Germ* oblong, inferior, cloathed with an involucel. *Styles* two, ſimple. *Stigmas* ſimple.

PER. none, in place of which is a hardened, mucronate *involucre.*

SEED ſingle, ovate-oblong.

ESSENTIAL CHARACTER.

Lateral flowers male; *central* hermaphrodite. *Seed* one, immerſed in an involucel.

SPECIES.

1. Echinophora ſpinoſa. *Prickly Sea-Parſnep.*
Lin. ſpec. 344. *Reich.* 1. 660. *Turr. farſet.* 7. *Hudſ. angl.* 112. *With.* 268.
Crithmum maritimum ſpinoſum. *Bauh. pin.* 288. *Park. theat.* 1286.
C. ſpinoſum. *Dod. pempt.* 705. *Ger.* 417. *f.* 2. *emac.* 533. 2. *Raii hiſt.* 469.
Leaflets ſubulate-ſpiny, quite entire.

2. Echinophora tenuifolia. *Fine-leaved Sea-Parſnep.*
Lin. ſpec. 344. *Reich.* 1. 660.
Paſtinaca ſylveſtris anguſtifolia, fructu echinato. *Bauh. pin.* 151.
P. echinophora apula. *Columm. ecphr.* 1. 98. *t.* 101. *Park. theat.* 901. 1684. *Raii hiſt.* 469.
Leaflets gaſhed, unarmed.

DESCRIPTIONS, &c.

1. Root perennial, creeping. Stalks branching, five or ſix inches high, with ſhort thick leaves, terminating in two or three ſharp thorns, and oppoſite, in pairs. Flowers in an umbel, on a naked peduncle, which ariſes from the ſide of the ſtalk. Under the umbel an involucre compoſed of ſeveral leaves, terminating in ſharp ſpines. Corolla white. It flowers in june.

Native of the ſea coaſt of Europe, eſpecially in the Mediterranean ſea.

[It was found by Mr. Ray on the ſea coaſt of Lancaſhire, and by Mr. Blackſtone between Feverſham and Sea Salter. In the former in theſe places it has lately been ſearched for without ſucceſs[d].]

2. Root perennial. Stalk near a foot and half high; whence come out two oppoſite ſide branches at every joint. At the lower part of it are leaves finely divided, like thoſe of the Carrot. The flowers

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[a] Mant.

[b] Hort. kew.

[c] Ibid.

[d] Withering.

grow in ſmall umbels at the extremities of the branches, having a ſhort prickly involucre. It flowers in july. [Native of the ſea-coaſt of Apulia. They were both cultivated by Mr. Miller before 1759.]

PROPAGATION AND CULTURE.

Theſe plants not producing ſeeds here, are increaſed by their creeping roots. Tranſplant them the beginning of march, a little before they ſhoot. Place them in a warm ſituation, and a dry ſoil; or elſe cover them in winter to prevent the froſt from deſtroying them.

[Echinophora. See *Caucalis*, *Daucus*, *Oſbeckia*.

Echinophoræ affinis. See *Elephantopus*.]

ECHINOPS. (*From* Εχινος, *a Hedge-hog, and* οψις *facies, appearance; on account of the roughneſs of theſe plants.*)

Lin. gen. n. 999. *Reich.* 1084. *Schreb.* 1353. *Juſſ.* 175. *Gærtn. t.* 160. *Echinopus Tourn.* 262. *Vaill. A. G.* 1718. *f.* 4. 5. 15.

Claſſ. 19. 5. Syngeneſia Polygamia Segregata.

Nat. order of *Compoſitæ Capitatæ.*—*Cinarocephalæ.* Juſſ.

GENERIC CHARACTER.

Cal. *Common* many-leaved: with ſcales ſubulate, totally reflected, containing many flowers.

Perianth partial one-flowered, oblong, imbricate, cornered: *leaflets* ſubulate, looſe above, upright, permanent.

Cor. one-petalled, length of the calyx, tubular: *border* five-cleft, reflex-ſpreading.

Stam. *Filaments* five, capillary, very ſhort. *Anthers* cylindric, tubular, five-toothed.

Pist. *Germ* oblong. *Style* filiform, length of the corolla. *Stigma* double, ſomewhat depreſſed, rolled back.

Per. none. *Calyx* unchanged, larger.

Seed ſingle, ovate-oblong, narrower at the baſe: with obtuſe tip. *Down* obſcure.

Rec. *Common*-globoſe, briſtly.

ESSENTIAL CHARACTER.

Cal. one-flowered. *Cor.* tubular, hermaphrodite. *Recept.* briſtly. *Down* obſcure.

SPECIES.

1. Echinops ſphærocephalus. *Great Globe Thiſtle.*

Lin. ſpec. 1314. *Reich.* 3. 945. *hort. cliff.* 391. 1. *Hall. helv. n.* 158. *Scop. carn. n.* 993. *Gouan. illuſtr.* 74. *Mill. illuſtr.* *Gærtn. fruct.* 2. 385. *Villars dauph.* 3. 264.

Echinopus major. *Bauh. hiſt.* 3. 69.

Carduus ſphærocephalus latifolius vulgaris. *Bauh. pin.* 381. *Beſl. eyſt. æſt.* 11. *t.* 7. *f.* 1. *Raii hiſt.* 383.—globoſus. *Ger.* 990. *emac.* 1151. 1.

C. ſph. acutus major. *Park. theat.* 977. 2.

Chalcepos. *Dalech. hiſt.* 1480.

Chamælеon verus. *Trag. hiſt.* 853.

Heads globular, leaves ſinuate, pubeſcent.

[2. Echinops ſpinoſus. *Thorny-headed Globe Thiſtle.*

Lin. ſyſt. 797. *Reich.* 3. 946. *mant.* 119. *Turr. fars.* 13.

Carduus ſphærocephalus, capitulo longis ſpinis armato. *Bauh. pin.* 382. *Raii hiſt.* 383.

C. ſph. acutus. *Dod. pempt.* 722. *Ger. emac.* 1151. *f.* 2.—minor. *Park. theat.* 977. *f.* 1.

Heads interſperſed with long ſpines.]

3. Echinops Ritro. *Small Globe Thiſtle.*

Lin. ſpec. 1314. *Reich.* 3. 946. *hort. upſ.* 248. *Scop. carn. n.* 994. *Gouan. illuſtr.* 74. *Gmel. ſib.* 2. 100. *n.* 82. *Mill. fig. t.* 130. *Villars dauph.* 3. 265.

Carduus ſphærocephalus cæruleus minor. *Bauh. pin.* 381. *Raii hiſt.* 383.

Ritro flor. cæruleis. *Lob. ic.* 2. 8. 1.

Crocodylium monſpelienſium. *Dalech. hiſt.* 1476.

β. E. caule ſubunifloro, fol. duplicato-pinnatifidis, foliolis linearibus remotis. *Gmel. ſib.* 2. 102. *t.* 46.

E. minor. *Bauh. hiſt.* 3. 72.

C. ſphærocephalus minor. *Park. parad.* 331. *f.* 6.

Head globular, leaves pinnatifid, ſmooth above.

4. Echinops ſtrigoſus. *Annual Globe Thiſtle.*

Lin. ſpec. 1315. *Reich.* 3. 947. *Loefl. hiſp.* 159.

Carduus tomentoſus, capitulo majore. *Bauh. pin.* 382.

Scabioſa carduifolia annua. *Herm. par. t.* 224.

Spina alba. *Lob. ic.* 2. 9.

Heads in bundles, lateral calyxes barren, leaves ſtrigoſe above.

5. Echinops græcus.

Mill. dict. n. 4.

Echinopus græcus, tenuiſſime diviſus & lanuginoſus, capite minori cæruleo. *Tournef. cor.* 34.

Stem one-headed, leaves ſpiny, all pinnatifid and villoſe, root creeping.

DESCRIPTIONS, &c.

[Theſe are herbaceous plants, ſome of them large and lofty. The leaves are alternate, thorny and pinnatifid. The heads of flowers are uſually ſolitary at the end of the ſtem and branches.]

1. Root perennial. Stalks many, four or five feet high. Leaves long and jagged, divided into many ſegments almoſt to the midrib, the jags ending in ſpines; they are of a dark green on their upper ſide, but woolly on their under. There are ſeveral globular heads of flowers on each ſtalk. The florets are commonly blue, but ſometimes white. Theſe come out in july, and the ſeeds ripen in auguſt.

[Linneus obſerves, that the ſtem is branched, many-flowered, pubeſcent, with ſpreading villoſe hairs. Leaves hairy on the upper ſurface. All the ſcales of the calyx pubeſcent to the very tip [a].—Uſually quite ſmooth, according to Gouan. In its wild ſtate it is only a cubit and half in height; in the garden it is much higher, leſs hoary, but more hirſute. The outer calyxes are probably barren [b]. The common receptacle is ſpherical, papilloſe or warted, and naked; proper none except the bottom of the calyx. Seed acuminate at the baſe, having ſmall whitiſh briſtles ſcattered over it, and preſſed cloſe to it, of a brown bay colour. It has no crown, but a little membranaceous crenulate cup, probably the remains of the fallen corolla [c].

Native of France, Spain, Italy, the Valais, Auſtria, Carniola, Germany.

Cultivated in 1596, by Gerarde [d].

2. This is of the ſame ſtature with the foregoing, but the ſtem and leaves are more tender. Stem (in the green-houſe) becoming ſomewhat ſhrubby, without glandular hairs. The heads are like thoſe of the firſt ſpecies, but the florets are white, and larger, with the jags reflex-hooked. Among the florets every where come out ſpines formed of unexpanded calycles, four times the length of the florets, which at length are cloven in two. Native of Egypt and Arabia. Perennial [e].]

3. This has a perennial creeping root, ſending up ſeveral ſtrong ſtalks two feet high, and branching. Leaves cut into many fine ſegments to the midrib. Each branch is terminated by a globular head of flowers, ſmaller than thoſe of the firſt, and of a deeper blue, but ſometimes white: they come out in july.

[Linneus obſerves, that the ſtem is white-tomentoſe. Leaves ſmooth above, white-tomentoſe underneath. Scales of the calyx ciliate to the very tip [f]. Stem, according to Gouan, a foot in height. All the leaves pinnatifid, pinnules narrow, gaſhed, the ends only of the ſegments prickly: on the ſtem and branches leſs gaſhed, ovate, thorny. This plant is annual, has the appearance of *Carlina* and *Carthamus*, with corymbed branches like them, very tomentoſe. The inner calyxes ſeem to be barren [g]. The roots of this and the firſt ſort are bitter, diuretic and nouriſhing: quadrupeds, eſpecially the horſe and goat, eat the heads.

Native of the South of France, Italy and Siberia. Cultivated in 1629 [h].

4. This is an annual plant, with a ſtiff white ſtalk two feet high. Leaves divided, ending in

[a] Spec. [b] Illuſtr. [c] Gærtner. [d] Hort. kew.
[e] Linn. mant. [f] Spec. [g] Illuſtr.
[h] Hort. kew. from Park. par.

many points, which have ſpines; their upper ſide green, covered with brown hairs, their under ſide white and woolly: the ſtalk is terminated by one large head of pale blue flowers, appearing in july.

[Leaves pinnatifid, broadiſh, the jags lanceolate, ending in a very ſmall ſpine; the ſides unarmed, ſtrigoſe on the upper ſurface, with ſtiff hairs, underneath tomentoſe. Calyxes with keeled ſcales, above even, ciliate at the baſe, not collected into a globular head, but in bundles: the lateral or lower calyxes ſmaller, barren, or without any floret[i].

Native of Spain and Portugal. Cultivated in 1731, by Mr. Miller[k].]

5. Root perennial, creeping. Stalks about a foot high. Leaves ſhorter and much finer divided than the preceding ſorts; they are hoary, and armed on every ſide with ſharp thorns: the ſtalks are terminated by one middle-ſized globular head of flowers, blue or white, appearing at the end of june.

Native of Greece, whence Tournefort ſent the ſeeds to the royal garden at Paris.

[This is probably no more than a variety of the third ſpecies.]

PROPAGATION AND CULTURE.

Theſe plants are eaſily propagated by ſeeds, which, if permitted to ſcatter, the plants will come up in plenty, and a few of them may be tranſplanted to the places where they are deſigned to remain to flower; they require no other culture but to keep them clean from weeds: the ſecond year they will flower and produce ſeeds, and the roots will continue two or three years after; but if the ſeeds ſcatter, the plants will become troubleſome weeds; to prevent which, the heads ſhould be cut off as ſoon as the ſeeds are ripe. They will grow almoſt in any ſoil or ſituation.

4. The ſeeds of this ſhould be ſown in the ſpring on a border of light earth, where the plants are to remain.

5. This is eaſily propagated by its creeping roots, or from ſeeds; it loves a dry ſoil and a warm ſituation.

[ECHINOPS. See *Carthamus.*
——— fruticoſus. See *Rolandra.*

ECHINOPUS. See *Echinops.*

ECHINUS. See *Allamanda, Hydnum, Statice.*

ECHII FACIE. See *Anchuſa.*

ECHIOIDES. See *Lycopſis, Myoſotis.*

ECHITES. (*So named by Browne, I ſuppoſe from* Εχις, *a Viper; perhaps on account of its deleterious quality.* Εχιτης *is the Serpent-ſtone.*)
Lin. gen. n. 299. *Reich.* 324. *Schreb.* 421. *Jacqu. amer.* 29. *Juſſ.* 146.
Claſſ. 5. 1. Pentandria Monogynia.
Nat. order of *Contortæ.—Apocineæ,* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-parted, ſharp, ſmall.

COR. one-petalled, funnel-form; *border* five-cleft, flat, ſpreading very much.
Nectary of five glands ſtanding round the germ.

STAM. *Filaments* five, ſlender, erect. *Anthers* ſtiff, oblong, acuminate, converging.

PIST. *Germs* two. *Style* filiform, length of the ſtamens. *Stigma* oblong-headed, two-lobed, attached by a gluten to the anthers.

PER. *Follicles* two, extremely long, one-celled, one-valved.

SEEDS very many, imbricate, crowned with long down.

OBS. E. caudata *has the border of the corolla terminated by very long linear tips.* R.

ESSENTIAL CHARACTER.

Contorted. Follicles two, long, ſtraight. *Seeds* downy. *Cor.* funnel-form, with the throat naked.

SPECIES.

1. Echites biflora.
Lin. ſpec. 307. *Reich.* 1. 595. *Jacqu. amer.* 30. *t.* 21. *pict.* 21. *t.* 28. *Swartz obſ.* 103. *Brown. jam.* 180. 1. *Nerium.*
Apocynum ſcandens, fl. nerii albo. *Plum. amer.* 82. *t.* 96.
Peduncles two-flowered.

2. Echites quinquangularis.
Lin. ſpec. 307. *Reich.* 596. *Jacqu. amer.* 32. *t.* 25. *pict.* 22. *t.* 32.
Peduncles racemed, leaves ovate, acute.

3. Echites ſuberecta. *Oval-leaved Echites, or Savanna-flower.*
Lin. ſpec. 307. *ſyſt.* 253. *Reich.* 596. *Jacqu. amer.* 32. *t.* 26. *pict.* 22. *t.* 33. *Swartz obſ.* 104.]
Apocynum ſpecioſiſſimum. *Mill. dict. n.* 4. *Sloan. jam.* 1. 206. *t.* 130. *f.* 2.
[Nerium? ſarmentoſum. *Brown. jam.* 180. 2.
Peduncles racemed, leaves ſubovate, obtuſe, mucronate.

4. Echites agglutinata.
Lin. ſyſt. 253. *Reich.* 596. *Jacqu. amer.* 31. *t.* 23. *pict.* 21. *t.* 30.
Peduncles racemed, leaves ovate, emarginate, with an acumen.

5. Echites toruloſa. *Climbing Echites.*
Lin. ſpec. 307. *Reich.* 596. *Jacqu. amer.* 33. *t.* 27. *pict.* 22. *t.* 34. *Swartz obſ.* 105. *Brown. jam.* 181. *n.* 4. *t.* 16. *f.* 2. (Nerium).
Peduncles ſubracemed, leaves lanceolate, acuminate.

6. Echites umbellata. *Umbelled Echites.*
Lin. ſpec. 307. *Reich.* 596. *Jacqu. amer.* 30. *t.* 22. *pict.* 21. *t.* 29. *Brown. jam.* 182. 1.]
Apocynum obliquum. *Mill. dict. n.* 8. *Sloan. jam.* 1. 207. *t.* 131. *f.* 2.
[*Peduncles umbelled, leaves ovate, obtuſe, mucronate, ſtem twining.*

7. Echites trifida.
Lin. ſpec. 308. *Reich.* 597. *Jacqu. amer.* 31. *t.* 24. *pict.* 22. *t.* 31.
Peduncles trifid, many-flowered, leaves ovate-oblong, acuminate.

8. Echites repens.
Lin. ſyſt. 253. *Jacqu. amer. pict.* 22. *t.* 35.
Peduncles many-flowered, divided, leaves lanceolate-oblong.

9. Echites corymboſa.
Lin. ſyſt. 253. *Reich.* 597. *Jacqu. amer.* 34. *t.* 30. *pict.* 23. *t.* 37. *Swartz obſ.* 105.
Racemes corymbed, ſtamens ſtanding out, leaves lanceolate-ovate.

10. Echites ſpicata.
Lin. ſyſt. 254. *Reich.* 597. *Jacqu. amer.* 34. *t.* 29. *pict.* 23. *t.* 36.
Spikes axillary, ſhort, ſtamens ſtanding out, leaves ſubovate.

11. Echites caudata.
Lin. ſyſt. 254. *Reich.* 597. *mant.* 52. *Burm. ind.* 68. *t.* 26.
Corollas funnel-form, with very long linear tips.

12. Echites ſcholaris.
Lin. ſyſt. 254. *Reich.* 597. *mant.* 53.
Lignum ſcholare. *Rumph. amb.* 2. 246. *t.* 82.
Leaves ſubverticilled, oblong, follicles filiform, very long, umbels compound.

13. Echites annularis.
Lin. ſyſt. 254. *ſuppl.* 166.
Stem twining, corollas ſalver-form; with an elevated ring on the tube.

14. Echites ſiphilitica.
Lin. ſyſt. 254. *ſuppl.* 167.
Leaves ovate, ſubpetioled, very ſmooth, ribbed, panicles dichotomous, flowers in ſpikes.

15. Echites ſucculenta.
Lin. ſyſt. 254. *ſuppl.* 167.
Prickles in pairs, extrafoliaceous, leaves linear, tomentoſe underneath, corollas funnel-form.

16. Echites biſpinoſa.
Lin. ſyſt. 254. *ſuppl.* 167.
Prickles in pairs, extrafoliaceous, leaves lanceolate, ſmooth, corollas ſalver-form.

17. Echites coſtata.
Forſt. fl. auſtr. n. 123. *Rheed. mal.* 9. 23. *t.* 14. (Kametti-valli).
Peduncles in cymes, leaves elliptic-lanceolate, acuminate.

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[i] Linn. ſpec.

[k] Hort. kew.

18. Echites tomentoſa.
Vahl ſymb. 3. 44.
Leaves cordate-oblong, acuminate, both they and the ſtem rough-haired, flowers in racemes, hairy.

19. Echites domingenſis.
Swartz prodr. 52. *Jacqu. ic. rar. collect.* 1. 73.
Peduncles racemed, leaves cordate-ovate, ſomewhat rigid, of a different colour underneath, ſtem twining.

20. Echites aſperuginis.
Swartz prodr. 52. *Plum. ic.* 27. (Apocynum.)
Peduncles racemed, follicles filiform, leaves oblong, acute, rough above, ſtem twining.

21. Echites circinalis.
Swartz prodr. 52.
Peduncles axillary, many-flowered, jointed, ſegments of the corolla waved, leaves elliptic, ſtem twining.

22. Echites floribunda.
Swartz. prodr. 52.
Racemes corymbed, leaves ovate, acuminate, nerves parallel, branches almoſt erect.

DESCRIPTIONS, &c.

Theſe plants have ſomething ſingular in their habit which proclaims them at firſt ſight. The leaves are oppoſite, petioled, quite entire, veined and ſhining: the third only has them frequently rugged. Common peduncles ſeldom longer than the leaves, lateral and alternate, except in *E. ſpicata*. Flowers void of ſcent. The nectareous glands, and the downy ſeeds in follicles, are of great importance in determining the character; whilſt the corolla, varying much in the different ſpecies, is of no conſequence in this reſpect. The ſtigma, in all, is glued to the inſide wall of the cone formed by the anthers, and which ſeparates at the exploſion of the pollen, whilſt the outer wall of the cone continues undiſſolved; the fecundation in the greater part being accompliſhed within the cloſed tube of the corolla, but in the reſt within the cone ſtretched beyond the tube.

1. A branched ſhrub, full of a milky juice, ſupporting itſelf by ſtems partly erect, partly twining upon trees, and mounting them to the height of twenty feet; hence frequently acquiring the air of a tree. Leaves oblong, growing narrower to the baſe, obtuſe at the end, with a ſmall point three inches long. Peduncles ſometimes, but rarely, three-flowered. Flowers handſome, very white, with a yellow throat. Native of moſt of the Caribbee iſlands, in ſalt marſhes.

2. Stems twining, ſhrubby, ſomewhat ſcabrous. Leaves three inches long. Racemes ſimple. Flowers about ſixteen, green, with a yellowiſh border, the edge of the tube white, and in form of a pentagon. This is not milky. Native of Carthagena in South America. It flowers in october.

3. A ſhrub, differing much from its congeners, abounding in milky juice, among other ſhrubs growing to the height of ten feet, but in ſavannahs only three feet, and ſometimes ſcarcely a foot high. Stems ſcarcely twining, climbing. Leaves approaching more or leſs to an ovate form, either ſmooth on both ſides, or ſcabrous at the back. The peduncles ſupport a few large, handſome, yellow flowers, hirſute on the outſide, and in the tube. The follicles are ſlender and brown [a].]

This riſes three or four feet high, with woody ſtalks, ſending out a few lateral branches. Leaves ſmooth, oppoſite, of a ſhining green on their upper ſides, but pale and veined underneath. The flowers are produced from the ſides of the branches upon long peduncles, at the end of which are commonly four or five buds, but ſeldom more than one comes to flower; the others withering ſoon. The flowers being large, and of a bright yellow, make a fine appearance.

It grows naturally in Jamaica in the Savannas, whence it is chiefly known in that iſland by the name of Savanna-flower.

[It is alſo very common in the iſland of St. Domingo; flowering from ſeptember to march [b]. Dr. Browne ſays, that all the parts of this plant are extremely poiſonous. Cultivated in 1759, by Mr. Miller [c].

4. Stems twining, ſhrubby. Leaves four inches long. Common peduncles the length of the leaves, often diſform, ſometimes bifid. Flowers ſmall, white. When the follicles are ſeparated, which is eaſily done, a drop of watery glutinous liquor, ſuch as the whole plant abounds with, flows out at the two points by which they had cohered. On the mountains near Cape Francois, in Domingo; flowering in december [d].

3. This is a weakly plant, which commonly ſuſtains itſelf by the help of the neighbouring buſhes, and frequently riſes to a conſiderable height among them. The branches and follicles are extremely ſlender and delicate [e]. Stems twining, round, ſhrubby. Leaves two inches long. The common peduncles ſupport about ſix ſmall, yellow flowers. The whole plant abounds in a milky gluten [f].—Frequent about the foot of the mountains in Liguanea, in the iſland of Jamaica [g]. Flowering in march [h].

Swartz ſays, that Browne's figure is better than that of Jacquin.

Introduced in 1778, by Wm. Wright, M. D. [i].

6. This climbs to the height of fifteen feet by means of its ſhrubby, twining, pliant ſtems, which are woody and ſuberous at bottom, but round, green and gloſſy above. The whole abounds in a clear glutinous juice. Leaves roundiſh-ovate, ſubcordate at the baſe, three or four inches long. The common peduncle has from four to ſeven flowers at the end, in a kind of umbel, with ſome ſtipules ſerving the purpoſe of an involucre. Flowers large, handſome, the border white, the tube green on the outſide [k]. Browne deſcribes them to be pale yellow, with a pretty long ſlender tube. He remarks, that like the reſt of this natural claſs, it is ſomewhat of a deleterious nature; and that there is a ſmall variation of it in the drier parts of the ſavannas, with pointed leaves, and very ſlender ſtalks.

Native not only of Jamaica, but of Domingo and Cuba; flowering from october to february. Browne rightly perceiving that this plant did not properly conform itſelf to any known genus, conſtituted this new one of *Echites*, which is now univerſally adopted [l]. Dr. William Houſtoun ſent Mr. Miller the ſeeds before 1733.

7. Stems twining, ſhrubby. Leaves three inches in length. Common peduncles ſhort, with diſform pedicels. Flowers large, pretty, the tube purple, and the border green. It climbs trees to the height of twelve feet, and the whole plant is milky. Native of South America near Carthagena, flowering in october [m].

8. This is an elegant ſhrubby plant, not milky; with round, ſmooth, ſarmentoſe ſtems; the older ones procumbent, and putting out roots, the younger ſuberect, and thickened at the joints into diſcoid knots. Common peduncles uſually bifid, bearing elegant, tender, red flowers. Native of St. Domingo; flowering from october to december [n].

9. This climbs up trees with its twining ſhrubby ſtems twenty feet in height, and the whole of it abounds with a white glutinous milk. Leaves ovate, oval, or obovate, acute, numerous, two inches long, entire, ſmooth, ſhining above, pale underneath, ſtiffiſh. Racemes terminating, branched, ſpreading, red. Flowers numerous, ſmall, red or purple. Teeth of the calyx very minute, coloured. Corolla cylindric, very ſhort: border reflex, with ſharp ſegments. Nectareous glands connate. Filaments from the bottom of the tube, longer than the corolla. Germ twin, pubeſcent; ſtyle with a very ſlight longitudinal groove on each ſide, by which it may be eaſily ſplit in two: ſtigma within the cone of anthers. Follicles horizontal, reflex, roundiſh, ob-

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[a] Jacquin.
[b] Ibid.
[c] Hort. kew.
[d] Jacquin.
[e] Browne.
[f] Jacquin.
[g] Browne.
[h] Jacquin.
[i] Hort. kew.
[k] Jacquin.
[l] Ibid.
[m] Ibid.
[n] Ibid.

tuſe, two-valved. Seeds oblong, with a briſtly down.

Native of the iſland of St. Domingo, flowering in november. In the mountainous woods of Hiſpaniola, flowering in the ſpring.

The French inhabitants call it *Gras de galle*[o].

10. This plant abounds in a white milk, and climbs the trees to the height of ſixty feet. Stems round, woody, pliant, twining, an inch in diamemeter, with alternate branches a foot and half long, at different diſtances, leafy their whole length. Leaves oblong, veined, ſmoothiſh, acuminate, diſtich, half a foot long. Spikes oppoſite, cloſe, an inch and half long, ſolitary, ſpreading, ſometimes, but rarely, divided in two. Flowers numerous, white, ſmall, ſubſeſſile. Native of Certhagena in New Spain, in thick lofty woods, flowering in july and auguſt[p].

11. This is a tree. Leaves lanceolate-elliptic, naked. Flowers axillary, peduncled, erect, the ſize of thoſe of Nerium or Oleander, funnel-form: border erect, terminating in linear tips longer than the whole corolla, a circumſtance in which it differs from all other known plants. Native of the Eaſt-Indies.

12. This alſo is a tree, the branches of which are leafy only at the joints; where there are five or ſeven oval-lanceolate leaves, which are coriaceous, and tranſverſely ſtreaked. A few peduncles are produced among the leaves, of the ſame length with them. The flowers are very ſmall. Follicles in pairs, a foot and half long, and therefore longer than any others that are known. Native of the Eaſt-Indies[q].

13. Leaves a foot long. Racemes bifid, peduncled, axillary. Calycine leaflets oblong, erect, concave. Tube of the corolla cylindric, longer than the calyx; ſegments of the border roundiſh, emarginate. Anthers connate, within the throat. Stigma obtuſe, ſurrounded by a ſharp ring. The nectary covers the germ with five ſmall ovate ſcales.

14. This is a tree yielding a milky juice. Leaves on ſhort petioles, a long ſpan and upwards in length, and ſharp. Peduncles axillary, divided into two branches, and theſe again into two ſhorter ſpikes, cloſely covered with flowers, and erect. Corolla large, white, with a large flat border. Stigma as in the genus Vinca. Follicles in pairs, divaricating. A decoction of the herb is a well known remedy at Surinam in the venereal diſeaſe. This and the preceding were obſerved at Surinam by Dalberg.

15. The filaments are bearded.

16. This and the preceding are very ſingular ſhrubs, much reſembling each other. They are ſucculent, milky and two-ſpined. Without ſeeing the fructification they might be taken for Euphorbias. They are natives of the Cape of Good Hope, and were obſerved there by Thunberg[r].

17. Native of the Society iſles[s].

18. Stem twining, round, as are alſo the petioles; the rib, nerves, and edges of the leaves rough-haired. Leaves three inches long, a little narrowed towards the baſe, broader at top, cordate at the baſe, the ſinus being cloſed by the incumbent lobes; they are ſomewhat rugged, nerved, veined, having hairs preſſed cloſe ſcattered over both ſurfaces, but more copious, and a little longer on the rib and nerves, eſpecially underneath. Peduncles axillary, ſhorter than the leaf, rough-haired. Flowers approximating, alternate, on ſhort pedicels. Segments of the calyx lanceolate, attenuated, ſmooth. Corolla two inches in diameter, or a little more, with aſh-coloured hairs ſcattered over the outſide, but very thick in the tube where the filaments are inſerted. Style filiform, the length of the tube. Found in Cayenne by von Rohr[t].

19, 20, 21, 22. Native of the Weſt-India iſlands[u].

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[o] Jacquin and Swartz obſ. [p] Jacquin. [q] Linn. mant. [r] Linn. ſuppl. [s] Forſter. [t] Vahl. [u] Swartz.

PROPAGATION AND CULTURE.

Theſe plants have not yet been introduced into cultivation in Europe, but being moſtly inhabitants of the Weſt-Indies, they will require the protection of the bark ſtove, and muſt be increaſed and managed in the ſame manner with the tender ſorts of Apocynum, which ſee.

Echites. See *Cariſſa*.]

ECHĬUM. (Εχιον *of Dioſcorides.* Εχιειον *of Nicander.* Echium *of Pliny:* ϖαρα τους εχεις. *Being ſuppoſed to cure the bite of the Viper; or to have ſeeds reſembling a Viper's head.*)

Engl. *Viper's-Bugloſs.* Fr. *Viperine.*

Lin. gen. n. 191. *Reich.* 203. *Schreb.* 251. *Gærtn. t.* 67. *Tourn.* 54. *Juſſ.* 130.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Aſperifoliæ.—Borragineæ.* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* five-parted, upright, permanent; *diviſions* ſubulate, upright.

Cor. one-petalled, bell-ſhaped. *Tube* very ſhort. *Border* upright, gradually widened, five-cleft, obtuſe; *diviſions* generally unequal: the two ſuperior ones longer; the *inferior* ſmaller, ſharp, reflex. *Throat* pervious.

Stam. *Filaments* five, ſubulate, length of the corolla, declined, unequal: *Anthers* oblong, incumbent.

Pist. *Germs* four; *Style* filiform, length of the ſtamens. *Stigma* obtuſe, two-cleft.

Per. none. *Calyx* grown ſtiffer, guarding the ſeeds in its cavity.

Seeds four, roundiſh, obliquely acuminate.

Obs. E. lævigatum & Italicum *have corollas nearly equal. The ſtamens and ſtyle are different as to length.* R.

ESSENTIAL CHARACTER.

Cor. irregular, with the throat naked.

SPECIES.

1. Echium fruticoſum. *Shrubby Viper's Bugloſs.* *Lin. ſpec.* 199. *ſyſt.* 189. *Reich.* 1. 401. *hort. upſ.* 43. *Comm. hort.* 2. 107. *t.* 54. *Pluk. mant. t.* 341. *f.* 7. (Bugloſſum.) *Stem ſhrubby, leaves lanceolate, attenuated at the baſe, villoſe-ſtrigoſe, without veins, calycine leaflets lanceolate, acute.*

[2. Echium candicans. *Hoary tree Viper's Bugloſs.* *Lin. ſyſt.* 189. *ſuppl.* 131. *Jacqu. collect.* 1. 44. *Stem ſhrubby, leaves lanceolate, nerved, they and the branches hirſute, calycine leaflets oblong and lanceolate acute, ſtyles rough with hairs.*

3. Echium giganteum. *Gigantic Viper's Bugloſs.* *Lin. ſyſt.* 189. *ſuppl.* 131. *Stem ſhrubby, leaves lanceolate, attenuated at the baſe, hairy, hairs very ſhort, bractes and calyxes ſtrigoſe, ſtamens longer than the corolla.*

4. Echium ſtrictum. *Upright Viper's Bugloſs.* *Lin. ſyſt.* 189. *ſuppl.* 131. *Stem ſhrubby, ſtiff, branching, leaves oblong-lanceolate, hairy, corollas ſomewhat bell-ſhaped, ſtamens longer than the corolla.*

5. Echium ſpicatum. *Spiked Viper's Bugloſs.* *Lin. ſyſt.* 189. *ſuppl.* 132. *Stems aſcending, very ſimple, flowers in ſpikes.*

6. Echium argenteum. *Silvery Viper's Bugloſs.* *Lin. ſyſt.* 189. *Reich.* 401. *mant.* 202. *Berg. cap.* 40. *Leaves linear, hirſute and whitiſh, patulous at the tip.*

7. Echium capitatum. *Headed Viper's Bugloſs.* *Lin. ſyſt.* 189. *Reich.* 401. *mant.* 42. E. hiſpidum. *Burm. prodr. p.* 5. *Stem hairy, flowers head-corymbed, equal, ſtamens longer than the corolla, leaves hiſpid.*

8. Echium plantagineum. *Plantain-leaved V. B.* *Lin. ſyſt.* 189. *Reich.* 402. *mant.* 202. *Barr. ic.* 1026. β. *Jacqu. hort.* 1. *t.* 45. *Root-leaves ovate, marked with lines, petioled.*

9. Echium laevigatum. *Smooth-ſtalked Viper's Bugloſs.* *Lin. ſpec.* 199. *ſyſt.* 190. *Reich.* 402. *Stem even, leaves lanceolate, naked, ſcabrous about the edge and at the tip, corollas equal.*]

10. Echium italicum. *Wall Viper's Bugloſs.*
Lin. ſpec. 200. *ſyſt.* 190. *Reich.* 403. *hort. upſ.* 35. *Hudſ. angl.* 83. *With.* 199. *Hall. helv.. n.* 604.
E. majus & aſperius, fl. albo. *Bauh. pin.* 254. *Raii hiſt.* 498.
E. fl. albo. *Camer. epit.* 738.
Lycopſis. *Ger. emac.* 802. 1. *Park. theat.* 519. *Raii ſyn.* 227.
Stem herbaceous hairy, leaves linear-lanceolate ſtrigoſe-hirſute, the lower ones nerved; corollas nearly equal; ſtamens longer than the corolla.

11. Echium rubrum. *Red Viper's Bugloſs.*
Lin. ſyſt. 190. *Jacqu. auſtr.* 5. *app. t.* 3.
Flowers in a long ſpike made up of ſhort little racemes, corollas nearly equal, leaves hiſpid.]

12. Echium vulgare. *Common Viper's Bugloſs.*
Lin. ſpec. 200. *Reich.* 403. *hort. cliff.* 43. *fl. ſuec. n.* 168. *Hudſ. angl.* 83. *With.* 200. *Lightf.* 136. *Relh. cantab. n.* 155. *Engl. bot. t.* 181. *Fl. ruſt.* 136. *Hall. helv. n.* 603. *Scop. carn. n.* 200. *Pollich pal. n.* 193. *Neck. gallob.* 103. *Krock. ſileſ. n.* 292. *Villars dauph.* 2. 448. *Fl. dan. t.* 445. *Blackw. t.* 299. *Plenck, ic. t.* 136. *Bauh. pin.* 254. *Cluſ. hiſt.* 2. 143. *Ger. emac.* 802. 2. *Park. theat.* 414. 1. *Raii hiſt.* 498. *ſyn.* 227. *Mor. hiſt. ſ.* 11. *t.* 27. *f.* 1. *Mill. dict. n.* 2.
Stem tubercled and hiſpid, ſtem-leaves lanceolate hiſpid, flowers in lateral ſpikes.

13. Echium violaceum. *Violet-flowered Viper's Bugl.*
Lin. ſyſt. 190. *Reich.* 403. *mant.* 42. *With.* 201. *Retz. obſ.* 2. *n.* 11. *Murr. prodr.* 143. *Villars dauph.* 2. 449.
E. ſylveſtre hirſutum maculatum. *Bauh. pin.* 254.
E. alterum, ſ. Lycopſis anglica. Merr. *Raii ſyn.* 228.
E. fl. rubro. *Cluſ. hiſt.* 2. 164. *Ger. emac.* 802. *f.* 4. *Raii hiſt.* 499.
Corollas equal to the ſtamens, tube ſhorter than the calyx.

14. Echium creticum. *Cretan Viper's Bugloſs.*
Lin. ſpec. 200. *ſyſt.* 190. *Reich.* 404. *hort. cliff.* 43. *Gærtn. fruct.* 326. *Cluſ. hiſt.* 2. 165. 1, 2.
E. cret. latifolium rubrum. *Bauh. pin.* 254. *Raii hiſt.* 498.
β. E. anguſtifolium. *Mill. dict. n.* 6.
E. cret. anguſtifolium rubrum. *Bauh. pin.* 254. *Raii hiſt.* 499.
Stem procumbent, fruiting calyxes diſtant.

[15. Echium orientale. *Oriental Viper's Bugloſs.*
Lin. ſpec. 200. *Reich.* 404. *hort. cliff.* 43. *Tourn. itin.* 2. *f.* 107.—3. 94. edit. oct.
Stem branched, ſtem-leaves ovate, flowers ſolitary lateral.]

16. Echium luſitanicum. *Portugal Viper's Bugloſs.*
Lin. ſpec. 200. *Reich.* 404.
Corollas longer than the ſtamens.

17. Echium ſericeum.
Vahl ſymb. 2. 35.
Leaves linear-wedge-ſhaped, ſtem ſuffruticoſe, both hoary.

18. Echium ſetoſum.
Vahl. ſymb. 2. 35. *Forſk. deſcr. p.* 41.
Leaves linear-lanceolate, ſtem ſuffruticoſe procumbent, both hiſpid and hoary.

19. Echium glabrum.
Vahl ſymb. 3. 22.
Leaves linear-lanceolate, ſmooth above, callous-dotted beneath on the outſide, ſpikes alternate.

20. Echium roſmarinifolium.
Vahl ſymb. 3. 22.
Leaves petioled linear-lanceolate reflex at the edge, hairy underneath and hoary.

21. Echium ſphærocephalum.
Vahl ſymb. 3. 22.
E. capitatum. *Lamarck.*
Leaves linear-lanceolate ſtrigoſe, heads ſolitary terminating, branches ſmooth.

DESCRIPTIONS, &c.

Moſt of the ſpecies are herbaceous, ſome however are ſuffruteſcent. The flowers are in ſpikes or ſpike-panicled, in the ſpikelets the flowers all point one way.]

1. This riſes with a ſhrubby ſtalk two or three feet high, dividing at top into ſeveral branches. Leaves ſeſſile, hairy, light green. The flowers are produced ſingly between the leaves at the ends of the branches; they are of a purple colour, and in ſhape much like thoſe of the Cretan ſort. They appear in may and june, but the ſeeds do not ripen in England.

[Stamens not longer than the corolla[a].

Native of the Cape of Good Hope.—Cultivated in 1759, by Mr. Miller[b].

2. This is a handſome ſhrub. The ſtems and branches are woody and ſomewhat tomentoſe, marked with linear, tranſverſe ſcars from fallen leaves. Leaves a ſpan long, approximating, lanceolate-ſubulate, attenuated at the baſe to the inſertion where it widens, marked with lines above and veined underneath, the veins are very long and ſimple; towards the panicle they are imbricate and narrower at the baſe. Flowers in a conical panicle formed of many ſpikes at the ends of the branches. Spikes pedicelled, ſimple, pointing one way, bending inwards. Corollas among the ſmaller ones of this genus, ſubhirſute, blue. The whole plant is white, and as it were ſilvery, with a ſoft cloſe ſhaggineſs covering the whole, hardly excepting the corolla.

Native of the high rocks of Madeira; where it was found by Mr. Francis Maſſon[c].—Introduced in 1777[d].

3. A very lofty ſhrub, with woody, round, hoary, ſmooth branches. Leaves a ſpan long, and the breadth of a finger, ſcabrous, veined. Flowers pointing one way, and forming a very large, pyramidal, terminating thyrſe, conſiſting of long, ſpiked peduncles. Corollas obtuſe, nearly equal, white.

Found on the rocks of Teneriffe by Mr. Francis Maſſon[e].—Introduced in 1779[f].

4. This is diſtinguiſhed by the ſtiffneſs and uprightneſs of the ſtem, by its petioled oblong leaves, and by the hairs of the ſtem being turned downwards. Peduncles axillary at the top of the ſtem ſolitary, naked, with three-parted ſpikelets, contracted into a head at the tip. Corollas ſmall, blue, with the ſtamens ſtanding out.

Found by Maſſon on the rocks of Teneriffe[g].—Introduced in 1779. Biennial. Flowering moſt part of the year[h].

5. Root-leaves very many, a hand in length, lanceolate-linear, very hairy. Stems twice the length of the leaves, with a few ſmaller, alternate, hairy leaves. Spike terminating, nearly of a finger's length, compact. Calyxes hoary. Stamens longer than the corolla.

Native of the Cape of Good Hope[i].

6. Stem branched determinately. Leaves ſcattered, acute, bent outwards at the tip, hoary with white hairs.

Native of the Cape[k].

7. Stem woody, branched. Leaves lanceolate, with patulous, pellucid hairs, bulbous at the baſe, ſcattered over them. Flowers crowded cloſely into terminating heads. Corollas regular, funnel-form, ſcarcely larger than thoſe of Lycopſis. Stamens twice as long as the corolla; and ſtyle double the length of the ſtamens[l].

Native of the Cape. See n. 21.

8. Leaves above hairy, ſoft, hiſpid: root-leaves like thoſe of Plantain, very entire, large: ſtem-leaves lanceolate, ſeſſile. Stems hairy, with ſoft not ſtrigoſe hairs; brown dots under the hairs, as in the reſt, but minute. Corollas violet-coloured (not blue, as in *E. vulgare*, nor ſhorter than the calyx, as in *E. creticum*). Bractes between the flowers, half-cordate, the length of the calyx; not ſubulate, as in *E. vulgare*, nor longer than the calyx, as in *E. creticum*. Annual.

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[a] Linn. ſyſt.
[b] Hort. kew.
[c] Linn. ſuppl.
[d] Hort. kew.
[e] Linn. ſuppl.
[f] Hort. kew.
[g] Linn. ſuppl.
[h] Hort. kew.
[i] Linn. ſuppl.
[k] Linn. mant.
[l] D. Royen in Linn. mant.

Native of Italy[m].—It flowers from July to October.—Introduced 1776, by Monſ. Thouin[n].

9. Stems underſhrubby, a foot in height. Leaves ſmooth, except that they are ſcabrous with mucronate callous dots about the edge, along the keel, and at the tip above. Racemes from the axils of the upper leaves, pointing one way, and ſmooth. Calyx ſmooth. Corolla but little irregular. Stamens declined. Seeds muricate.

Native of the Cape of Good Hope[o].—Introduced in 1774, by Mr. Francis Maſſon[p].]

10. This riſes with an upright hairy ſtalk; the flowers are produced in ſhort ſpikes on the ſide of the branches; they are ſmall, and ſcarcely appear above the calyxes. Some plants have white flowers, others purpliſh. The calyxes are very hairy, and cut into acute ſegments.

[Stem erect, branched, very rough with hard bulbous hairs. The flowers are ſmaller than in E. vulgare, but like that irregular, always white, not blue. Stamens very long[q].

Lycopſis *Bauh. pin.* 255. which is variety β. of the *Species Plant.* and ſuppoſed to be the Jerſey plant, has ſmaller corollas, hairy on the outſide, eſpecially towards the top, and more regular than in the plant of the South of Europe. Perhaps the difference may ariſe merely from ſituation[r].

The Pyrenean Echium, which is ſet down in Syſt. veget. as a variety of E. lævigatum, is more probably a variety of this. It is very like E. italicum, and is extremely hiſpid with white ſtinging hairs: Corolla not wider than the calyx, pale fleſh colour, not white, funnel-form, almoſt regular, twice as long as the calyx, pubeſcent on the outſide and paler. Filaments double the length of the corolla, deep red. Anthers blue. Seeds even, ſubtrigonal at top with a ſort of intermediate or inner toothlet, which is more produced than the reſt. This is E. majus et aſperius, flore dilute purpureo of Tournefort, inſt. 135. And, Lycopſis monſpeliaca, fl. dilute purp. *Mor. blæs.* 284[s].

11. Stem erect, about a foot high; radical leaves long and lanceolate, hairy, deepiſh green above, paler below and with a ſtrong back nerve: ſtem-leaves ſmaller and narrower: ſtem rough and covered with red points: ſpike of flowers about a foot long, conſiſting, as in the common Echium, of a great many ſeparate ſpikelets or ſmaller flowering ſpikes proceeding from the alæ of the ſmall leaves, and at firſt coiled as uſual. Flowers rather ſmall than large, of a paleiſh red, and with nearly equal and ſomewhat triangular ſegments. Anthers pale blue.

Native of Hungary, where it grows in plenty[t].

12. Stem erect, eighteen inches or more in height, when young ſimple, but becoming branched. The whole plant is hiſpid. The ſtem frequently, and ſometimes the leaves are beautifully ſpotted with red. The hairs on the ſtem riſe from gloſſy purpliſh black tubercles. Root-leaves forming a tuft, near two feet long, petioled. Stem-leaves ſeſſile, four or five inches long; all lanceolate, quite entire, ſcabrous and hairy on both ſides. Flowers numerous in ſpikes; thoſe of each ſpike pointing one way, and cloſely wedged together. Calyx fringed with white hairs. Corolla before it expands of a fine red, afterwards of a bright blue. The colour however varies, to pale red, and white; if the corolla be blue, the ſtems are blueiſh, the ſtamens purple, and the bulbs from which the hairs ſpring are blood-red; but if the corolla be pale red, then the other parts of the flower are of the ſame colour, and the hair-bulbs are yellow; and if it be white, all the parts of the flower are of that colour, and the hair-bulbs green. The outſide of the corolla is ſet with ſhort hairs, and is marked with five riſing ribs extending from the middle of each ſegment down to the baſe; the upper and lateral ſegments are rounded, the loweſt ſomewhat pointed. The filaments are red and longer than the corolla; ſometimes much longer, and ſometimes very little longer or barely equal to the upper ſegment; anthers gray. Style very hairy: germs embedded in a fleſhy receptacle.—It is a ſhowy plant, and if it were not common, would have a place in our gardens. It is biennial, and once in three years appears abundantly in the corn fields of Cambridgeſhire, &c. where it is known by the name of *Cat's-tail.* Bees are fond of the flowers, but their wings are apt to be torn by the ſtrong hairs[u].

That the *E. anglicum* of Hudſon is the *E. vulgare* of Linneus cannot be doubted[x].

13. It reſembles the foregoing very much, but the corolla is of a violet-colour: the ſtem is more diffuſed: the ſtamens are not longer than the corolla; they are purple, but the ſtyle is white and hairy; the tube of the corolla is almoſt as long as the calyx: and the whole appearance is different[y].

The colour of the herb is a more pleaſant green, and it is not ſo hairy; the hairs alſo are more tender, and not tubercled at the baſe. The ſpike of the flowers is ſhorter and not ſo compact. The colour of the corolla is conſtant, not red at firſt, but always pale blue. The length of the ſtamens differs, ſo that one will equal the longeſt part of the corolla, and the reſt be longer or ſhorter than the oppoſite ſegment[z].

The whole plant is ſmaller and weaker than the foregoing, which frequently grows very ſtrong and large on walls, whereas this grows in corn-fields and on banks. The flowers are conſtantly ſmaller, and the ſtamens never exceed the corolla, which is unequal[a].

Stem a foot high, branching at the top and bottom. The hairs are ſofter, and ſome of them riſe from tubercles; theſe are hardly if at all diſcernible on the leaves, though they are on the ſtem where they are intermixed with ſhort hairs not riſing from tubercles. The calyx is very unequal, the ſegments broader than in *E. vulgare.* Corolla deep blue, half as long again as the calyx, at the bottom of the two upper ſegments beſet both within and without with ſcattered hairs[b].

It is thus deſcribed by Retzius—Root annual, ſimple, fuſiform. Stem branched, hiſpid, almoſt upright. Lower leaves lanceolate, obtuſe: upper oblong-cordate, acute: all hiſpid, the hairs not iſſuing from a tubercled baſe. Flowers racemed, pointing one way: raceme revolute, elongated; bractes lanceolate, ciliate, alternately lateral. Calyx ſubſeſſile, with hairs ſcattered over it, diviſions linear-lanceolate, ſpreading. Corolla violet-coloured, ſtriated, irregular; the tube much ſhorter than the calyx, white half way up, thinly hairy. The lower ſtamens the length of the upper lip; the upper ones the length of the lower lip; the fifth ſhorter; all bowed towards the upper lip: filaments fleſh-coloured, the two longer naked, the reſt having a few long hairs ſcattered over them. Anthers ſmall, black. Style hairy, red, the length of the ſhorter filaments growing finally to the length of the corolla. Stigma bifid, ſlender. Seeds ſmall, dark-brown, dotted-ſcabrous.

I have little doubt but that this is Miller's firſt ſpecies.] He ſays, that the leaves of this are ſhorter, and much broader than thoſe of the common ſort; the ſpikes of flowers much longer, and the ſtamens equal in length to the corolla, whereas thoſe of the common ſort ſtand out much beyond it.

[Monſ. Gouan ſuppoſes this plant to be no more than a variety of E. vulgare: and Monſ. Villars can ſcarcely think that his E. violaceum is the ſame with that of Linneus, and thinks it poſſible that it may be an intermediate ſpecies between the E. violaceum and italicum of Linneus. He ſays, that in his plant the leaves are wider, the ſtem branching, the flowers red and more regular, and the ſtamens not appearing out of the corolla. The plant is very rough with white hairs, which give it a whitiſh colour, and it is much branched.

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[m] Linn. mant.
[n] Hort. kew.
[o] Linn. ſpec.
[p] Hort. kew.
[q] Haller.
[r] Linn. ſpec.
[s] Retz. obſ. 5. 2. Linn. mant. 534.
[t] Jacquin.

[u] Withering, Stokes in With. Woodw. Mſs. Relh. Hall. Scop.
[x] Woodw. Mſſ.
[y] Linn. mant.
[z] Murray.
[a] Woodw. Mſs.
[b] Stokes in With.

Native of Auſtria and Germany. In England, near Norwich.—Introduced 1780, by Caſimir Gomez Ortega, M. D. It flowers in july[c].]

14. This has trailing hairy ſtalks about a foot long, putting out ſeveral ſide branches. Leaves lanceolate, hairy, about three inches long, and three quarters of an inch broad, ſeſſile. The flowers come out on ſlender ſpikes, upon long peduncles, from the axils; they are large, of a reddiſh purple, which turns to a fine blue when they are dried.

[Corollas deep red, with the tube ſhorter than the calyx. Filaments not longer than the ſhorter lip of the corolla, a little villoſe at the tip[d]. The pericarp conſiſts of four cruſtaceous, brittle nuts, reſembling grape-ſtones; on one ſide convex, with a raiſed furrow in the middle between two lateral tubers; on the other ſide angular; ſcabrous on all ſides with white bony dots, brown at the tip; they are appendicled at the baſe with an unperforated triangular area; on the outſide they are of a ferruginous ſmoaky colour, within they are black and very ſmooth; they are one-celled and without valves. Seeds ſolitary, ovate, long-beaked, ſomewhat compreſſed, of a bay colour[e].

Native of the Levant. It is a biennial, and flowers from july to ſeptember. Cultivated in 1683, by Mr. James Sutherland[f].]

β. This has branching ſtalks, a foot and half long, declining towards the ground, and covered with ſtinging hairs. Leaves four inches long, and not more than half an inch broad, pretty much warted, and hairy. The flowers grow in looſe ſpikes from the ſides of the ſtalks, and alſo at the ends of the branches, they are of a reddiſh purple colour, but not ſo large as thoſe of the preceding; and the ſtamens are longer than the corolla. This alſo, if different, is a native of the Levant.

[15. Root above a foot long, and two inches thick, mucilaginous and ſweetiſh. Stem about three feet high, an inch thick, pale green, hard, ſolid. Lower leaves fifteen or ſixteen inches long, and four or five inches wide, pointed, whitiſh green, ſattiny above, cottony underneath, with a ſtrong midrib; they diminiſh conſiderably along the ſtem, not being above half a foot in length; they are alſo leſs cottony than the former, and much more pointed. Branches about half a foot long; both they and the top of the ſtem rough with ſtrong hairs, accompanied by leaves about an inch and half in length. All theſe branches are ſubdivided into ſmaller ones bending like a ſcorpion's tail, and loaded with flowers an inch and half in length, of a pale blue colour, with two red bands on three of the ſegments, on a bright purple ground. Calyx almoſt as long as the corolla, rough with very large hairs. Style almoſt as long as the corolla, ſlightly villoſe, and purple. The flower has no ſmell[g].

Found in the Levant by Tournefort.—Introduced in 1780, by Monſ. Thouin[h].]

16. The lower leaves of this are more than a foot long, and two inches broad in the middle, gradually leſſening to both ends, and covered with ſoft hairs. The ſtalks grow two feet high: the flowers are in ſhort ſpikes from the ſides of them.

Native of Spain and Portugal. [Introduced in 1731, by Mr. Miller[i].

17. Stems ſeveral, diffuſed, woody at the baſe, ſimple, a palm or more in height, ſoft at bottom, ſomewhat rugged at top, hoary with white hairs, preſſed cloſe, and placed on minute tubercles, the lower ones longer, the upper ones more diſperſed. The lower leaves from two to three inches long, crowded, linear, ciliate below, gradually widening towards the top, dilated at the baſe, embracing, obtuſe, hoary on both ſides with cloſe ſhort hairs placed on minute dots; the upper ones an inch long, and recurved. Spike terminating, pointing one way, hoary-haired. Bractes ovate-lanceolate, obtuſe. Corolla villoſe on the outſide. Stamens longer than the corolla.

Native of Egypt.

E. argenteum differs from this in having lanceolate leaves, attenuated outwards and acute, with ſpreading and more hirſute hairs.

18. Stems a palm in height, branched at bottom, covered with little whitiſh tubercles, crowded cloſe together, and having white rigid hairs on the top. Leaves ſeſſile, half an inch long, gradually ſmaller, rigid. Spike terminating, ſolitary; flowers at firſt crowded, but afterwards more remote. Bractes ovate. Corolla half an inch in diameter, hoary. Stamens longer than the corolla. Nuts ſmall, ovate, acuminate, muricate. It differs from the preceding in having procumbent ſtems, hairs that are longer, ſtiff and rough, not preſſed cloſe, and leaves narrow at the tip.

19. Branches ſcattered, a little compreſſed at top, purpliſh aſh-coloured with very ſlender appreſſed villoſe hairs. Leaves ſeſſile, firm, an inch long, even. Spikes from the upper axils, erect, few-flowered, two inches long. Bractes ovate-lanceolate, the length of the calyx. Calyxes hairy, with lanceolate ſegments, the ſame length with the tube of the corolla. Stamens longer than the corolla. It differs from E. lævigatum in having the branches a little villoſe, the leaves narrower, not at all callous about the edge, the calyxes hairy, and the flowers ſmaller.

20. Branches round, ſcarred, hoary with hairs. Leaves ſcattered, an inch long, reſembling thoſe of Roſemary, on the upper ſurface hairy and green, with a groove along the middle, and ſomewhat rugged. Petiole very ſhort. Raceme terminating, ſhort. Leaflets of the calyx linear, hairy. Corolla almoſt regular, half as long again as the calyx. The place of the four laſt is between the ſixth and ſeventh ſpecies.

21. Branches ſcattered, round below, angular above, towards the end villoſe and toothletted from the fallen leaves. Leaves ſcarcely half an inch long, ſeſſile, frequent, ſubimbricate, beneath having callous dots, above and on the edge having only ſcattered ſtrigæ. Heads globular, hairy, on ſhort peduncles, with ſmall flowers that are almoſt regular, and have ſtamens longer than the corolla.

E. capitatum differs from this in having the branches more hairy, the leaves three or four times as long, the heads of flowers on ſhort branches collected into a ſort of corymb, not ſolitary on lengthened ſpreading branches, as in this, and the calyxes hoary with abundance of hairs, which in this are fewer and more diſtinct.—This and the two preceding ſorts are natives of the Cape of Good Hope.

The place of the laſt is between the ſeventh and eighth ſpecies[k].]

PROPAGATION AND CULTURE.

1. It is propagated by ſeeds, when they can be obtained, which ſhould be ſown in pots filled with light ſandy earth ſoon after they are received. Theſe may be expoſed to the open air till the beginning of october, when the pots ſhould be placed under a frame, to guard them from froſt; but in mild weather, they ſhould have the free air, to prevent the ſeeds from vegetating till the winter is paſt; for if the plants come up at that ſeaſon, their ſtems will be weak and full of juice, and very liable to rot with damps; therefore it is much better if the plants do not come up till toward march, which is the uſual time of their appearing, when the ſeeds are not forced by warmth. When the plants are fit to remove, they ſhould be each planted into a ſmall pot filled with light earth, and placed under a frame to forward their putting out new roots: then they ſhould be gradually inured to bear the

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[c] Hort. kew.
[d] Linn. ſpec. & ſyſt.
[e] Gærtner.
[f] Hort. kew.
[g] Tournef. voy.
[h] Hort. kew.
[i] Ibid.
[k] Vahl.

open air, and the latter end of may be placed abroad in a ſheltered ſituation, where they may remain till the beginning of october; at which time they muſt be removed into an airy glaſs-caſe, where they may enjoy the ſun and have free air in mild weather. During the winter ſeaſon theſe plants muſt be ſparingly watered; for as their ſtems are ſucculent, too much moiſture will cauſe them to rot. In the ſummer they ſhould be ſet abroad in a ſheltered ſituation, and treated in the ſame manner as other plants from the ſame country.

14. This is annual, and the moſt beautiful of all the ſorts. The ſeeds muſt be ſown every year where they are deſigned to remain; and the plants require no other culture but to keep them clean from weeds, and to thin them where they grow too cloſe. In july they flower, and their ſeeds ripen in five or ſix weeks after. The ſeeds of the other ſorts being ſown in the ſpring, will the ſecond ſummer after produce flowers and ſeeds, after which they ſeldom continue. They all delight in a rubbiſhy gravelly ſoil, and will grow upon the tops of old walls or buildings; where, when once they have eſtabliſhed themſelves, they will drop their ſeeds, and thereby maintain a ſucceſſion of plants without any care, and on theſe places they appear very beautiful.

[Echium. See *Lycopſis*, *Myoſotis*, *Onoſma*, *Pulmonaria*.

ECLIPTA. (*From* Εκλειπης, *imperfect*, *or* εκλειψις, *a deficiency.*)

Lin. gen. Reich. n. 1056. *Schreb.* 1316. *Juſſ.* 187. *Gærtn. t.* 169.

Claſſ. 19. 2. Syngeneſia Polygamia Superflua.

Nat. Order of compound flowers.—*Corymbiferæ* Juſſ.

GENERIC CHARACTER.

Cal. *Common* many-leaved: *leaflets* lanceolate, nearly equal, in a double ſeries.

Cor. *compound* rayed: of the *ray* moſt plentiful, female; of the *diſk* hermaphrodite.

Proper of the hermaphrodite tubular, four-cleft, upright, outwardly mealy.

In the *females* very narrow, ligulate.

Stam. in the hermaphrodites. *Filaments* four, very ſhort. *Anther* cylindric.

Pist. in the hermaphrodites. *Germ* oblong. *Style* middling. *Stigma* two-cleft, ſpreading.

Per. *Calyx* unchanged.

Seed, in the *hermaphrodites* oblong, compreſſed, notched, obtuſe, unarmed. In the *females* three-ſided, oblong, notched, obtuſe, unarmed.

Rec. flattiſh, chaffy: chaffs very narrow.

Obs. *This genus is diſtinct from* Verbeſina *in having four-cleft corollets, and unarmed ſeeds; and from* Cotula *in having a chaffy receptacle.*

ESSENTIAL CHARACTER.

Recept. chaffy. *Down* none. *Corollets* of the diſk four-cleft.

SPECIES.

1. Eclipta erecta. *Upright Eclipta.*
Lin. ſyſt. 778. *Reich.* 3. 874. *mant.* 286. *Swartz obſ.* 311. *Gærtn. fruct.* 2. 441. *Rumph. amb.* 6. *t.* 18. *f.* 1. *Lour. cochinch.* 505. *Vahl ſymb.* 1. 74.]
Verbeſina alba. *Lin. ſpec.* 1272. *mant.* 475. *hort. cliff.* 500. *Mill. dict. n.* 2. *Gron. virg.* 128.
[Cotula alba. *Linn. ſyſt. ed.* 13. 564. *Murr. prodr.* 225.
Eupatoriophalacron balſaminæ fol., fl. albo diſcoide. *Vaill. act. par.* 1720. 597. *Dill. elth.* 138. *t.* 113. *f.* 137. *Sloan. jam.* 1. 260. and Mentha arvenſis. *Sloan.*
Scabioſa conyzoides, &c. *Pluk. alm. t.* 109. *f.* 1. *Mor. hiſt.* 3. 47. *f.* 6. *t.* 13. *f.* 16.
Micrelium aſteroides. *Forſk. p.* 152. *n.* 96.
Stem erect, leaves deflected at the baſe and ſeſſile.

2. Eclipta punctata. *Dotted-ſtalked Eclipta.*
Lin. ſyſt. 778. *Reich.* 875. *mant.* 286.
Bellis ramoſa. *Jacqu. amer.* 216. *t.* 129. *pict.* 106. *t.* 197.
Stem erect dotted, leaves flat.

3. Eclipta latifolia. *Ovate-leaved Eclipta.*
Lin. ſyſt. 778. *ſuppl.* 378.
Stem erect, leaves ovate petioled.

4. Eclipta proſtrata. *Trailing Eclipta.*
Lin. ſyſt. 779. *Reich.* 874. *mant.* 286. *Gærtn. fruct.* 2. 441. *Lour. cochinch.* 505. *Thunb. jap.* 321. *Swartz obſ.* 311. *Vahl ſymb.* 1. 74.]
Verbeſina proſtrata. *Lin. ſpec.* 1272. *mant.* 475. *Mill. dict. n.* 4.
E. menthæ arvenſis folio. *Vaill. act. par.* 1720. 598. *Dill. elth.* 139. *t.* 113. *f.* 138.
Chryſanthemum maderaſpatanum, &c. *Pluk. alm. t.* 118. *f.* 5.
Micrelium tolak. *Forſk. deſcr. p.* 152. *n.* 96.
Stem proſtrate, leaves ſomewhat waved and petioled.

5. Eclipta ſeſſilis. *Seſſile-leaved Eclipta.*
Swartz prodr. 114.
Stem erect, leaves ſlightly embracing ovate toothed, flowers axillary ſeſſile diſcoid.

DESCRIPTIONS, &c.

1. The herb is like that of *Coreopſis Bidens.* The leaves are marked with three nerves, and are in pairs remote from each other. The flowers come out two together alternately from the axils[a].

Stem ſhorter and thicker than in the fourth, ſlightly flexuoſe, hirſute with hairs not preſſed to the ſtem but horizontal; it is ſcarcely branched. Leaves narrower, more apparently ſerrate, the ſerratures toothletted and unequal; they are veined, with three veins ſtraighter, the veins are hirſute, though the ſurface, like the upper one, be roughened with cloſe-preſſed hairs. Peduncles ſhort, either ſolitary or two, ſeldom three from the ſame axil. Calyx not hemiſphærical but ovate with broader ſegments[b].

It is thus deſcribed by Swartz—

Stem erect, round, a foot high, leafy, almoſt ſimple, hiſpid with hoary hairs. Leaves oppoſite, tooth-ſerrate, wedge-ſhaped, broad-lanceolate obtuſe, triple-nerved, hiſpid. Peduncles alternate, uſually in pairs, longer than the leaves, one-flowered. Flowers white. Calyx of five or ſix leaves: ſcales broad-lanceolate, two larger, ſomewhat hiſpid. Flowers diſcoid; of the diſk numerous, four-cleft, minute; of the ray very many, minute. Seeds angular, thickiſh, naked, without any pappus. Receptacle naked, not chaffy.

Native of the Weſt Indies; and of the Eaſt Indies, Cochinchina, &c. if E. erecta of different authors be the ſame plant, which may be doubted. Loureiro ſays that in the Cochinchina plant the leaves are not nerved, nor properly ſerrate, nor ſeſſile; and that the flowers are not in pairs. He adds, that the juice is uſed for dyeing hair both of men and quadrupeds, whence the natives call it ink-plant.

Cultivated 1690, in the royal garden at Hampton court. It flowers from july to ſeptember, and is annual[c].—Linneus marks it as biennial.

2. Stem round, branching, leafy, rugged, a foot and half high, reddiſh with white dots. Leaves lanceolate-oblong, acute, ſerrate, rugged, oppoſite, ſeſſile, from two to three inches long. Peduncles one-flowered, ſubterminating. Flowers whitiſh, having no ſmell. The whole has a green watery ſap, which turns black in the air, and may be uſed as ink. If it could be fixed, it would make a very fine dye. The negroes are ſaid to increaſe the blackneſs of their ſkin by this juice[d].

This reſembles the firſt ſpecies, but the ſtem has white dots ſcattered over it.—Annual, and a native of Domingo and Martinico[e].

3. *Root* annual. *Stem* two feet high, round, hiſpid, brachiate, and finally compound. *Leaves* oppoſite, acuminate, three-nerved, wrinkled, pubeſcent-ſcabrous, ſerrate. *Flowers* terminating, ſolitary, on very ſhort peduncles, the ſize of thoſe of *Sigeſbeckia*, and white: calyx of about eight leaflets, cloſe, and the length of the flower: ray of the co-

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[a] Linn. mant.
[b] Murr. prodr.
[c] Hort. kew.
[d] Jacquin.
[e] Linn. mant.

rolla ſhort, as in *Achillea*, with ſubtrifid petals; in the diſk four florets which are five or ſix-cleft: anthers black: ſtigmas recurved; ſeeds oblong, ſubtrigonal. Receptacle the length of the ſeeds.

Native of the Eaſt Indies[f].—It flowers in ſeptember and october; and was introduced in 1777, by Sir Joſeph Banks, Bart.[g]

4. This is often erect, like the firſt ſort, with ſubſeſſile flowers, or however on very ſhort peduncles[h].

The flowers come out alternately in pairs. Calyx ſimple. Anther brown. Seeds awnleſs, muricate in four rows[i].

Native of the Eaſt Indies, Japan, Cochinchina, and the iſle of Tanna in the South Seas.—It flowers in auguſt, and was cultivated by Mr. Miller in 1759[k]. Alſo prior to that in the Eltham garden[l]. It is an annual plant.

5. This is an annual plant, native of Jamaica[m].]

PROPAGATION AND CULTURE.

Theſe plants are propagated by ſeeds, ſown upon a hot-bed in the ſpring; when the plants are fit to remove they ſhould be tranſplanted into a freſh hot-bed to bring them forward: they muſt be ſhaded till they have taken new root, and then treated as other tender annuals, being careful not to draw them up too weak. In june they may be taken up with balls of earth, and being planted in pots are to be ſet in a ſtove, where they muſt be ſhaded and watered, and where they muſt remain to flower well.

[ECLOPES. See *Relhania*.

EDECHIA. See *Laugeria*.

EDERA. See *Hedera* and *Rhus*.]

EDGINGS.

The beſt and moſt durable plant for edgings in a garden is Box; which, if well planted, and rightly managed, will continue in beauty ſeveral years: the beſt ſeaſon for planting this, is either in the autumn, or very early in the ſpring; for if you plant it late, and the ſeaſon ſhould prove hot and dry, it will be very ſubject to miſcarry, unleſs great care be taken to ſupply it with water. The beſt ſort for this purpoſe is the Dwarf Dutch Box.

Theſe edgings are only planted upon the ſides of borders next walks, and not (as the faſhion was formerly) to plant the edgings of flower-beds, or the edges of fruit-borders in the middle of gardens, unleſs they have a gravel-walk between them; which renders it proper to preſerve the walks clean, by keeping the earth of the borders from waſhing down into the walks in hard rains.

It was alſo the practice formerly to plant edgings of divers ſorts of aromatic herbs, as Thyme, Savory, Hyſſop, Lavender, Rue, &c. But as theſe very ſoon grow woody, ſo that they cannot be kept in due compaſs, and in hard winters are often killed in patches, whereby the edgings are rendered incomplete, they are now ſeldom uſed for this purpoſe.

Some people make edgings of Daiſies, Thrift, Catchfly, and other flowering plants; but theſe alſo require to be tranſplanted every year, in order to have them handſome, for they ſoon grow out of form, and are ſubject to decay in patches; ſo that there is not any plant which ſo completely anſwers the deſign as Dwarf Box.

[EGG-PLANT. See *Solanum*.

EGLANTERIA, and EGLANTINE. } See *Roſa*.]

EHRETIA. (*So named after that ingenious artiſt and botaniſt, G. D. Ehret.*)

Fr. *Cabrillet*.

Lin. gen. n. 257. *Reich.* 278. *Schreb.* 352. *Brown. t.* 16. *Jacqu. amer.* 45. *Juſſ.* 128.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. Order of *Aſperifoliæ.—Borragineæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, bell-ſhaped, half five-cleft, obtuſe, very ſmall, permanent.

COR. one-petalled. *Tube* longer than the calyx. *Border* five-cleft. *Diviſions* ſomewhat ovate, flat.

STAM. *Filaments* five, ſubulate, patulous, length of the corolla. *Anthers* roundiſh, incumbent.

PIST. *Germ* roundiſh. *Style* filiform, thicker above, length of the ſtamens. *Stigma* obtuſe, emarginate.

PER. *Berry* roundiſh, one-celled.

SEEDS four, convex on one ſide, cornered on the other.

OBS. *The ſeeds of* E. Bourreria *are two-celled. The berry is two-celled; and the ſeeds ſolitary and two-celled*

Syſt. Veget. p. 192. R.

ESSENTIAL CHARACTER.

Berry two-celled. *Seeds* ſolitary, two-celled. *Stigma* emarginate.

SPECIES.

1. Ehretia tinifolia. *Tinus-leaved Ehretia.*

Lin. ſpec. 274. *ſyſt.* 230. *Reich.* 1. 532. *amœn.* 5. 595. *Swartz obſ.* 87. *Jacqu. amer.* 45. *Trew. ehret. t.* 24. *Brown. jam.* 168. *t.* 16. *f.* 1. *Sloan. jam.* 2. 94. *t.* 203. *f.* 1. *Raii dendr.* 45. 12. (Ceraſo affinis).

Leaves oblong-ovate quite entire ſmooth, flowers panicled.

[2. Ehretia ſpinoſa. *Thorny Ehretia.*

Lin. ſpec. 275. *ſyſt.* 230. *Reich.* 532. *Jacqu. amer.* 46. *t.* 80. *f.* 18. *pict.* 27. *t.* 259. *f.* 14. *Thorny.*]

3. Ehretia Bourreria. *Oval-leaved Ehretia.*

Lin. ſpec. 275. *ſyſt.* 230. *Reich.* 533.

Cordia Bourreria. *Lin. amœn.* 5. 395.

Bourreria ſucculenta. *Jacqu. amer.* 44. *obſ.* 2. *p.* 2. *t.* 26. *amer. pict.* 28. *t.* 45. *Brown. jam.* 168. *t.* 15. *f.* 2. *Comm. hort.* 1. 153. *t.* 79. (Meſpilus). *Cateſb. car.* 2. *t.* 79. (Pittoniæ ſimilis). *Sloan. jam.* 2. 96. *t.* 204. *f.* 1. *Raii dendr.* 63. 11. (Jaſminum).

Leaves ovate quite entire ſmooth, flowers in a kind of corymb, calyxes ſmooth.

[4. Ehretia exſucca. *Dry-fruited Ehretia.*

Lin. ſpec. 275. *ſyſt.* 230. *Reich.* 533.

Bourreria exſucca. *Jacqu. amer.* 45. *t.* 173. *f.* 17. *pict.* 28. *t.* 259. *f.* 13.

Rhamnus cumanenſis. *Loefl. itin.* 182.

Leaves wedge-form-lanceolate with the edge reflex.

5. Ehretia virgata.

Swartz prodr. 47.

Leaves oblong entire rugged on the upper ſurface, branches filiform, flowers terminating ſcattered, calyxes hirſute.

DESCRIPTIONS, &c.

Theſe are trees or ſhrubs; the leaves in ſome are ſmooth, in others ſcabrous; the flowers in panicles terminating and axillary[a].

1. This is an upright tree, from twenty to thirty feet high, with an oblong thick head. Branches unarmed, roundiſh, ſubdivided. Leaves alternate, veined, blunt, about four inches long, on ſhort petioles. Panicles terminating, oblong, large. Flowers terminating, numerous, white, ſmall. Calyx five-parted, with minute ovate ſegments. Corolla a little larger than the calyx, with acute ſegments finally rolled back. Filaments longer than the corolla. Style ſcarcely ſhorter than the ſtamens, awl-ſhaped, bifid. Stigmas ſimple. Berry ſpherical, at firſt yellow, then black. Seeds two, hemiſpherical, two-celled.

Native of Cuba and Jamaica; flowering there in january and february[b].

In Jamaica, where it is pretty common in the lower lands, and known by the name of *Baſtard Cherry-tree*, it riſes generally to the height of ſixteen or twenty feet: the berries are ſmall, and ſeldom exceed the largeſt of our European currants in ſize. They ſerve to feed poultry, and are ſometimes eaten by the poorer ſort of people[c].]

Mr. Miller received the ſeeds from Jamaica in 1734. The plants grew to the height of eight or nine feet, and produced flowers, but not ſeeds. He will not allow that it is Sloane's plant: the leaves in this being ſmoother, longer and more pointed, and the corymb of flowers much longer, than in Sloane's plant.

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[f] Linn. ſuppl. [g] Hort. kew. [h] Swartz. [i] Linn. [k] Hort. kew. [l] Dillen. [m] Swartz.

[a] Juſſieu. [b] Swartz and Jacquin. [c] Browne.

[2. This tree has a trunk three or four inches in diameter, dividing almoſt cloſe to the ground uſually in three parts, which run up twenty-five or thirty feet high: theſe having put out a few ſimilar boughs in their progreſs, ſcarcely attain the length of ten feet before they are bowed back to the ground, and require ſupport from the boughs of the neighbouring trees: they have many very ſhort lateral branches ſcatteringly diſpoſed: their bark is aſh-coloured and ſmooth. Strong, woody, ſhort, very thick, awl-ſhaped ſpines are ſcattered over the trunk, principal boughs, and ſecondary branches; the oldeſt of theſe frequently put forth from their middle a perpendicular leafy branchlet of the ſame length with themſelves.

Leaves oblong, attenuated at the baſe, obtuſe, entire, ſometimes ſubrepand, ſhining, on ſhort petioles, three or four inches long, uncertain in their number, but uſually five or ſix from the ſame tubercle, falling off every year. Racemes ſhort, ſubcorymbed, branched, ſupported by awl-ſhaped ſtipules, from the centre of the tubercles, not unfrequently coming out before the new leaves. Flowers very many, ſmall, with yellowiſh corollas. The ſegments of the ſtyle may be regarded as a two-parted ſtigma, whence with a glaſs appears an opening to the germ itſelf. Fruit the ſize of a Pea and red.

Native of Carthagena in New Spain, flowering in auguſt, and bearing fruit in october. It is called there *Cacaracacara*, and differs much in habit from the preceding; they agree however in the flower, except in the calyx and ſtyle[d].

3. This is a ſmall inelegant tree, having an aduſt habit, in Curaçao often above fifteen feet high, in Martinico ſeldom five. Trunk unequal, with a chinky bark. Branches very many, irregular. Leaves alternate, petioled, quite entire, various; obtuſe, acute or emarginate; on rocks ſmooth, elſewhere rugged; differing in ſize; oblong, ovate, *&c.* Racemes corymbed, terminating. Flowers ſweet. Corollas white, with roundiſh ſegments. Anthers oblong. Calyx in the fruit cloven. Berries ſhining, ſaffron or orange-coloured, pulpy, ſweet, ſucculent, more quadrangular as they are larger; eaten by children and the natives[e].

Leaves exactly ovate, both ſurfaces ſmooth and level: the tube of the corolla is only the length of the calyx. This ſpecies is the connecting link between Ehretia and Cordia[f].

Native of the Weſt Indies, growing from the crevices of rocks, where there is no ſoil.

According to Dr. P. Browne, it grows in the Savannas of Jamaica, it is there called *Poiſon-Berries:* the French name it *Bois cabril batard.* It ſeldom riſes above fourteen or fifteen feet: the berries are of a ſaffron colour. Browne named it *Bourreria*, after Mr. Bourer, (or rather Beurer) an apothecary of Nuremberg, who was a great promoter of natural hiſtory.

Cultivated 1758, by Mr. Miller[g];] who received the ſeeds from Surinam.

[4. This is a ſmall tree fifteen feet in height; ſometimes erect, ſometimes ſupporting itſelf on other trees. Leaves ovate, acute, very ſmooth, alternate, petioled, two inches long. Racemes branched, ſubcorymbed, ſubterminating. Flowers having a ſlight degree of ſweetneſs, much larger than in the preceding ones. Corollas white, with heart-ſhaped ſegments. Anthers ovate and large. Berries green, four-cornered, ſlightly four-grooved, ending in a blunt point, without any pulp, becoming finally of a reddiſh black colour, dividing into four parts, with the ſeeds ſticking in them, and continuing a long time on the tree.

Frequent about Carthagena, in mountain woods, flowering from may to auguſt, and ripening the ſeeds in october[h].

5. Native of Hiſpaniola[i].]

PROPAGATION AND CULTURE.

Theſe plants are too tender to thrive abroad in England, where they require a moderate warm ſtove in winter; but when the plants have acquired ſtrength, they may be placed in the open air during the heat of the ſummer; but it ſhould be in a ſheltered ſituation; and when the evenings grow cold in the autumn, they muſt be removed into ſhelter.

They are propagated by ſeeds, when theſe can be obtained. Sow them in ſmall pots, plunged into a hot-bed. They may alſo be increaſed by layers, but theſe are long before they put out roots.

[EHRETIA. See *Lycium.*

EHRHARTA. (*So named in honour of Frederic Ehrhart, a native of Switzerland, a very diligent aud acute obſerver.* Lin. ſuppl.)

Lin. gen. Schreb. n. 608. *Thunb. act. holm.* 1779. 216. *nov. gen.* 16. *Lin. fil. nov. gen. gram.* 32. *ſuppl.* 28. *Smith ic. ined.* 1. *t.* 9. & 2. *t.* 32, 33.
Claſſ. 6. 2. Hexandria Mon. ſ. Digynia.

GENERIC CHARACTER.

CAL. *Glume* one-flowered, two-valved, ovate, concave, ſhorter than the corolla, patulous: one valve a little larger than the other, and membranaceous.

COR. double: *outer* two-valved; *valves* oblong, complicate, keeled, retuſe, tranſverſely wrinkled, three times as long as the calyx; villoſe on the outſide at the baſe: *inner* a little ſhorter, keeled, with a ſmooth even ſurface.

Nectary two-leaved, very ſmall: *leaflets* jagged and ciliate, involving the genitals.

STAM. *Filaments* ſix, capillary, very ſhort: *anthers* upright, linear, emarginate, ſhorter than the corolla.

PIST. *Germ* ovate. *Style* compreſſed, very ſhort, ſmooth. *Stigma* ſimple, villoſe.

PER. none.

SEED ſingle, ovate, ſmooth.

OBS. *The two firſt ſpecies have one ſtyle, the three laſt have two: the third has only three ſtamens: in the fifth the flowers are only monoecous: in the third and fourth the nectary is not viſible: the fourth and fifth have no villoſe hairs at the baſe of the outer corolla.*

ESSENTIAL CHARACTER.

Cal. a two-valved one-flowered glume. *Cor.* double, each two-valved; the outer compreſſed.

SPECIES.

1. Ehrharta cartilaginea.
Smith ic. ined. 2. 33.
E. capenſis. *Thunb. act. holm.* 1779. 216. *t.* 8.
E. Mnemateia. *Lin. ſuppl.* 209.
Culm undivided, panicle ſimple, outer corolla retuſe almoſt awnleſs, edge of the leaves cartilaginous and curled.

2. Ehrharta bulboſa.
Smith ic. ined. 2. 33.
Trochera ſtriata. *Richard journ. de Roſier,* V. 13, *p.* 225. *t.* 3.
Culm undivided, panicle branched many-flowered, outer corolla retuſe awned.

3. Ehrharta longiflora.
Smith ic. ined. 2. *t.* 32.
Culm ſimple, panicle branched many-flowered, outer corolla mucronate tubercled and hiſpid, flowers three-ſtamened.

4. Ehrharta paniceа.
Smith ic. ined. 1. *t.* 9.
E. erecta. *Lamarck encycl.* V. 2.
Culm divided, panicle ſomewhat branched, flowers erect two ſtyled.

5. Ehrharta calycina.
Smith ic. ined. 2. *t.* 33.
Aira capenſis. *Linn. ſuppl.* 108.
Culm branched, panicle almoſt ſimple, calyx coloured equalling the corolla.

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[d] Jacquin. [e] Ibid. [f] Linn. ſpec. [g] Hort. kew.

[h] Jacquin. [i] Swartz.

DESCRIPTIONS, &c.

1. This is an extremely beautiful ſmooth graſs.—*Root* fibrous, perennial. *Culm* erect, jointed, from a foot and half to two feet high: joints about five. *Leaves* ſheathing, enſiform; the lower ones a hand in length, the upper ones much ſhorter: diſk ſmooth; edge cartilaginous and crenulate, ſcabrous. *Panicle* oblong, conſiſting of fifteen or twenty flowers: peduncles capillary, looſe, flexuoſe, in threes, pairs or ſolitary, ſimple or ſometimes a little branched, growing thicker at the top. Flowers drooping; calycine glume coloured at the baſe, outer corolline glume violet, inner becoming pale. Bundles of villoſe hairs very white and ſhining. Nectary and filaments white. Anthers yellow.—Firſt obſerved at the Cape by Thunberg[a].

2. Lamarck confounds this with the foregoing ſpecies, from which it is very diſtinct[b].

3. *Root* fibrous, whitiſh. *Culms* many, erect, jointed, leafy, round, ſtreaked, very ſmooth. *Leaves* ſheathing, linear-lanceolate, acute, nerved, ſtreaked, ſmooth except about the edge, where it is ſcabrous: *ſheath* often the length of a joint, ſtreaked, ſmooth, ſomewhat ſwelled, contracted at top, and bearing a *ſtipule*, which is ſolitary, intrafoliaceous, erect, ſhort, multifid and jagged, brown. *Panicle* terminating, erect: branches crowded, more or leſs ſubdivided, ſmooth. *Peduncles* crowded or ſolitary, ſimple or divided, capillary, ſtraight, ſcabrous, thicker at the tip. *Flowers* upright, large, hermaphrodite, three-ſtamened: valves of the calyx keeled, much ſhorter than the corolla, nerved, ſhining, purpliſh, awnleſs; the outer ovate, acute, with ſeven nerves, the inner roundiſh, obtuſe with a dagger-point, and five-nerved: corolla pale green; the outer very long, ſtraight, the valves nearly equal and priſmatic, ſmooth at the baſe, or very ſeldom obſcurely wrinkled between the angles, towards the tip tubercled and hiſpid, dagger-pointed and pungent; the outer valve obovate, with a bundle of whitiſh villoſe hairs at the back of the baſe; the inner placed above the other, embracing the inner corolla, ovate, cut at the baſe and adorned there with a bundle of villoſe hairs on each ſide; the inner corolla oppoſite not contrary to the outer, much ſhorter, awnleſs, ſmooth; the outer valve ovate, cloſely compreſſed, ſharp, nerved, the inner much narrower, linear-lanceolate, membranaceous, with one or two keels along the back. Nectary none. Filaments very ſlender, equal: anthers ovate, bifid both at the tip and baſe, two-celled; as the germ increaſes they are torn from the filaments and raiſed on the ſtyles to the top of the flower. Germ oval, compreſſed, ſmooth: ſtyles two, upright: ſtigmas crinite, whitiſh. Seed oval, naked. Obſerved at the Cape by Maſſon[c].

4. *Culm* ſomewhat branched, kneed, leafy. *Leaves* ſheathing, enſiform, ſtreaked, naked, ſcabrous about the edge. *Peduncles* capillary, ſtraight, thickening at the end. *Flowers* three times ſmaller than in the firſt ſpecies, green: calyx ſcarioſe about the edge, the outer valve larger: corolla awnleſs, twice as long as the calyx; the outer more rude, acinaciform, valves nearly equal, triangular, the outer valve of an even ſurface not wrinkled, the inner cut out at the baſe, tranſverſely wrinkled at the baſe, no villoſe hairs; inner corolla contrary to the outer, valves very ſmooth, nearly equal, the outer a little broader, embracing the inner. Nectary very minute, if any? Filaments equal: anthers two-lobed at the tip, the lobes divaricate. Germ very ſmall, ſmooth: ſtyle bifid, with two pencilform ſtigmas. Seed naked. Though the ſtyle appears to be ſingle at the baſe, yet it has two ſtigmas, as in the Graſſes and Oryza (Rice), after which it ſhould be placed, ſince it has a great affinity with it.—Sonnerat brought it from the Cape in the year 1776[d].

5. *Culm* very much branched, kneed, round, ſtreaked, ſmooth: branches alternate. *Leaves* ſharp, very ſlightly pubeſcent underneath, ſubciliate about the edge: ſheath a little ſhorter than the internode, ſtreaked, contracted at the top, and bearing a ſtipule, which is ſolitary, intrafoliaceous, upright, multifid-capillary, white, ending on both ſides in a membranaceous, half-mooned, horizontal, brown proceſs, ciliated with white briſtly hairs, and embracing the ſtem. *Peduncles* uſually in fours, one-flowered (very ſeldom two-flowered,) capillary, ſtraight, thickening at the tip, moſtly pointing one way. *Flowers* the ſame ſize as in the fourth ſpecies, upright, monoecous: valves of the calyx keeled, nearly equal, the length of the corolla, ſomewhat ſcabrous, ſtreaked, awnleſs, green at the baſe and on the back, coloured at the tip and about the edge red or white; the inner ovate, the outer a little narrower, and linear: corolla awnleſs, green, the ſurface flat and not wrinkled; the outer unequal, hairy on the outſide, the valves ſomewhat diſtant; the outer valve ſhorter, much narrower, linear, obtuſe with a point, but not mucronate or dagger-pointed, the inner ovate, obtuſe, compreſſed at the tip, ſomewhat ſcabrous, equal at the baſe, and not manifeſtly cut out there, embracing the inner corolla, there are no villoſe hairs at the baſe; the inner corolla equal, contrary to the outer, and ſmooth, the valves ovate-lanceolate, hollow, converging, cloſely connected at one edge, cheriſhing the genitals. Two white, entire, rounded little membranes, between the calyx and the corolla, form the *nectary*. *Filaments* equal: anthers much larger than in the foregoing ſpecies, filling almoſt the whole cavity of the inner corolla, and at length ſtanding forth. There is no rudiment of a piſtil in the male flower. Piſtil in a ſeparate flower: germ oval, ſmall, ſmooth, ſurrounded with a few long, white briſtles, which perhaps are barren filaments; ſtyles two, ſhort, patulous, white; ſtigmas crinite, brown, ſtanding forth on one ſide of the flower between the inner corolla and the inner valve of the outer. Seed naked.—Brought from the Cape by Sparrman[e].

EKEBERGIA.

Lin. gen. Schreb. n. 719. *Sparrm. act. holm.* 1779. *p.* 282. *Thunb. nov. gen.* 43. *Juſſ.* 265.

Claſſ. 10. 1. Decandria Monogynia. (Monadelphia? *Retz.*)

Nat. order of *Tribilatæ.* *Meliæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, bell-ſhaped, tomentoſe, four-parted: *diviſions* ovate, obtuſe.

COR. *Petals* four, oblong, obtuſe, tomentoſe on the outſide, a little longer than the calyx.

Nectary: a ring ſurrounding the baſe of the germ.

STAM. *Filaments* ten, very ſhort, pubeſcent. *Anthers* ovate, acute, upright.

PIST. *Germ* ſuperior. *Style* cylindric, very ſhort. *Stigma* capitate.

PER. a globular *berry.*

SEEDS five, oblong.

OBS. *The number of ſeeds varies from two to five.* Thunb.—*Doubtful whether the corolla be four-petalled and ten-ſtamened. Compare it with Guarea,* Juſſ.—*Perhaps it ſhould be referred to the claſs Monadelphia.* Retz.

ESSENTIAL CHARACTER.

Cal. four-parted. *Petals* four. *Nect.* like a garland ſurrounding the germ. *Berry* containing five oblong ſeeds.

SPECIES.

1. Ekebergia capenſis.
Lin. ſyſt. 399. *Sparrm. in act. holm.* 1779. *t.* 9. *Thunb. nov. gen.* 44.

DESCRIPTION, &c.

A tree, with abruptly or unequally pinnate leaves, the common petiole flatted; the flowers panicled and axillary[f].

ELA CALLI. See *Euphorbia.*

ELÆACHNUS *Burm.* See *Elæagnus.*]

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[a] Linn. ſuppl.
[b] Smith.
[c] Ibid.
[d] Ibid.
[e] Smith.
[f] Juſſieu.

ELÆAGNUS. (Ελαιαγνος *of Theophraſtus. From* Ἐλαια, *the Olive, and* Αγνος, *chaſte; or a ſhrub ſo called from its ſuppoſed quality of preſerving chaſtity.*)

Engl. *Oleaſter.* Fr. *Le Chalef.*

Lin. gen. n. 159. *Reich.* 168. *Schreb.* 213. *Tourn.* 489. *Juſſ.* 75.

Claſſ. 4. 1. Tetrandria Monogynia.

Nat. order of *Elæagni* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, four-cleft, ſuperior, ſtraight, bell-form, outwardly ſcabrous, inwardly coloured, deciduous.

COR. none.

STAM. *Filaments* four, very ſhort, inſerted into the calyx below the diviſions. *Anthers* oblong, incumbent.

PIST. *Germ* roundiſh, inferior. *Style* ſimple, a little ſhorter than the calyx. *Stigma* ſimple.

PER. *Drupe* ovate, obtuſe, ſmooth, with a dotted tip.

SEED. *Nut* oblong, obtuſe.

ESSENTIAL CHARACTER.

Cor. none. *Cal.* four-cleft, bell-form, ſuperior. *Drupe* below the calyx,

SPECIES.

1. Elæagnus anguſtifolia. *Narrow-leaved Oleaſter.*
Lin. ſpec. 176. *Reich.* 1. 343. *hort. upſ.* 31. *cliff.* 33. *Hort. angl. t.* 19. *Camer. epit.* 106. *Duham. arb.* 1. *t.* 89.
E. inermis. *Mill. dict. n.* 2.
Elæagnus anguſtifolia. *Pallas fl. roſſ.* 1. 10. *t.* 4.
Olea ſylveſtris, fol. molli incano. *Bauh. pin.* 472. *Raii hiſt.* 1576.
Oleaſter cappadocicus. *Park. theat.* 1441.
Zizyphus cappadocica. *Ger. emac.* 1491. *f.* 2.
β. E. ſpinoſa. *Mill. dict. n.* 1.
Leaves lanceolate.

[2. Elæagnus orientalis. *Oriental Oleaſter.*
Lin. ſyſt. 163. *Reich.* 343. *mant.* 41.
E. ſpinoſa. *Lin. ſpec.* 177. *amœn.* 4. 305.
Elæagrus orientalis. *Pallas roſſ.* 1. 11. *t.* 5.
Leaves oblong ovate opake.]

3. Elæagnus latifolia. *Broad-leaved Oleaſter.*
Lin. ſpec. 177. *Reich.* 343. *fl. zeyl.* 58. *Burm. zeyl.* 92. *t.* 39. *f.* 2. *Raii dendr.* 44. *n.* 4. (Zizyphus). *Lour. cochinch.* 89.
Leaves ovate.

[4. Elæagnus criſpa. *Curled-leaved Oleaſter.*
Lin. ſyſt. 163. *Thunb. jap.* 66.
Leaves lanceolate-oblong obtuſe waved, flowers ſolitary.

5. Elæagnus multiflora. *Many-flowered Oleaſter.*
Lin. ſyſt. 163. *Thunb. jap.* 66.
Leaves obovate obtuſe, flowers axillary aggregate, peduncles longer than the flower.

6. Elæagnus umbellata. *Umbelled Oleaſter.*
Lin. ſyſt. 164. *Thunb. jap.* 66. *t.* 14.
Leaves obovate obtuſe, flowers axillary, aggregate, peduncles ſhorter than the flower.

7. Elæagnus glabra. *Smooth-leaved Oleaſter.*
Lin. ſyſt. 164. *Thunb. jap.* 67.
Leaves ovate-oblong acuminate, flowers axillary ſubſolitary.

8. Elæagnus macrophylla. *Silver-leaved Oleaſter.*
Thunb. jap. 67. *Kæmpf. amæn.* v. 789.
Leaves rounded-ovate ſilvery.

9. Elæagnus pungens.
Lin. ſyſt. 164. *Thunb. jap.* 68. *Kæmpf. amæn.* v. 789.
Branchlets becoming thorns, leaves oblong waved, flowers axillary in pairs.]

DESCRIPTIONS, &c.

1. A tree branching from the bottom, growing ſometimes to the height of three fathoms, with a trunk the thickneſs of a man's arm or thigh, elegant in its appearance, eſpecially from the ſilvery brightneſs of the leaves. Bark ſmooth, brown. Wood pale, prettily veined with gray and brown, but not hard. Branches and branchlets ſlender, frequent, alternate, ſmooth, unarmed, or having thorns eſpecially in young trees. Leaves petioled, in the more northern parts lanceolate, in the more ſouthern broader, rather obtuſe, and larger; ſilvery white underneath, on their upper ſurface hoary-greeniſh, and ſhining very much. The flowers come out at the middle leaves of the ſmaller branches, uſually ſolitary or two together, ſometimes but very ſeldom three from each axil, in which caſe one or two are on ſhorter peduncles and barren, having no germ, though they have a ſtyle and anthers. The diviſions of the calyx (or corolla) are four, very ſeldom five, never more in the wild plant, (others ſay from four to eight): the anthers are placed at the baſe of theſe, on very ſhort filaments. Style the length of the calyx. Drupe always ſolitary, oblong, hoary-white when young, thicker and yellowiſh when ripe, incloſing within a ſweet pulp a woody, gray, furrowed nut. In the deſerts near the Volga the fruit is hardly bigger than the berries of the Barberry, whereas in the more ſouthern parts it is the ſize of the cornelian Cherry[a].

Native of the South of Europe, the Levant, near the Caſpian ſea, in the deſerts near the Volga, and the farther Tartarian deſert, and other parts of the Ruſſian empire in Aſia. It flowers there in may.—It was cultivated by Parkinſon in 1633[b].]

β. Mr. Miller diſtinguiſhes ſpecifically the thorny and unarmed narrow-leaved Oleaſter. The latter he ſays, is that which is moſt commonly preſerved in the Engliſh gardens. The leaves are more than four inches long, and not half an inch broad; they are very ſoft, and have a ſhining appearance like ſattin. The flowers come out at the footſtalks of the leaves, ſingly, or two, and frequently three at the ſame place; the outſide of the calyx is ſilvery and ſtudded, the inſide of a pale yellow; it has a very ſtrong ſcent. The flowers appear in july, and ſometimes are ſucceeded by fruit.

The thorny Elæagnus he takes to be the common ſort, which grows naturally in Bohemia; and of which he ſaw ſome trees in the curious garden of the famous Boerhaave, near Leyden. The leaves of this are not more than two inches long, and about three quarters of an inch broad in the middle; they are white, and have a ſoft cottony down on their ſurface; at the footſtalk of every leaf comes out a pretty long ſharp thorn, the leaves being alternate, the ſpines come out on each ſide of the branches. The flowers are ſmall, and have a ſtrong ſcent when fully open. They were both obſerved by Tournefort in the Levant.

[2. This has the appearance of the foregoing, but the leaves are twice as broad, ovate-oblongiſh, ſoft to the touch on both ſides, pale underneath, but neither ſurface ſhining or ſilvery[c].

In ſtature and manner of growth this tree reſembles a middle-ſized Willow, as it does alſo in the hoarineſs of its leaves and the diviſion of its branches. Bark gray, and cloven in the trunk. Small branches alternate, all white-tomentoſe. Leaves alternate, oblong-ovate and oval, quite entire, petioled, with a ſnowy hoarineſs underneath, and dotted-hoary on the upper ſurface, not ſhining, but ſoft. In the wild ſpecimens from Perſia, ſharp, ſtraight thorns are ſcattered variouſly over the branches, on the ſmaller twigs they are hoary all over and bear leaves: whereas the cultivated trees have no thorns. Flowers alternate, peduncled, ſolitary, extremely fragrant: calyx funnel-form, hoary on the outſide, the diviſions become reflex by age, and are obſcurely yellowiſh within. Stamens between theſe diviſions. Germ oblong; ſtyle the length of the calyx. Drupe ovate, very obſcurely octangular, tomentoſe: nut furrowed with a cylindric kernel.—This and the *ſpinoſa* of Linneus do not ſeem to differ any otherwiſe than a garden tree does from a wild one, or the thorny variety of the foregoing ſpecies from the unarmed.

Native of the mountains of Perſia from Caucaſus to Derbent, about the Caſpian ſea abundantly, &c.[d] and of the Levant. Introduced in 1783, by Mr. John Græffer[e].]

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[a] Pallas.
[b] Hort. kew. from Ger. emac.
[c] Linn. mant.
[d] Pallas.
[e] Hort. kew.

3. This riſes with a woody ſtem to the height of eight or nine feet, dividing into many branches. Leaves ſilvery, with ſeveral irregular dark-coloured ſpots; they are alternate, and continue all the year.

[Root tuberous[f]. Stem ſhrubby, erect, three feet high, unarmed, branched. Leaves quite entire, tomentoſe. Flowers lateral, white, on one-flowered peduncles, ſeveral together. Drupe ſmall ovate, containing one ſeed[g].

Native of the Eaſt Indies and China.]

Mr. Miller ſays, that it is rare at preſent in the Engliſh gardens; but that there were ſeveral large plants of it in the royal garden at Hampton-court, ſome of which produced flowers.

[4. An upright tree; branches and branchlets alternate, round, divaricate, upright, aſh-coloured, ſcabrous with dots, the laſt twigs angular and whitiſh. *Leaves* alternate, petioled, entire; above naked, browniſh, dotted with a middle longitudinal furrow; ſilvery underneath; from erect patulous, an inch and half in length: petiole furrowed above, ſcarcely a line long. *Flowers* not in the axils, but ſcattered over the laſt twigs, ſolitary and peduncled. Peduncle capillary, ſhorter than the flower.

5. Stem ſhrubby, little branched; branches and branchlets alternate, few, round, ferruginous-brown, ſpreading, ſcabrous with dots. *Leaves* from each bud many, alternate, petioled, entire, upright; above half naked with ſcaly ſilver dots, wholly covered with ſilvery ſcales underneath; unequal, about an inch in length: petioles capillary, a line in length. *Flowers* many, peduncled, from a bud among the leaves. Peduncles capillary, looſe, ſilvery, about an inch long. Calyx club-ſhaped, oblong.

6. Stem ſhrubby; branches and branchlets alternate, round, upright, ferruginous-browniſh, ſcabrous with dots. *Leaves* from alternate buds many, petioled, patulous; rather naked above with ſilvery dots; underneath ſilvered all over; half an inch in length: petioles capillary, ſcarcely a line long. *Flowers* many from a bud among the leaves, in a kind of umbel, peduncled, drooping: peduncles capillary, nodding, ſcarcely a line in length. Calyx ovate. This approaches very near to the foregoing ſpecies.

7. Stem arboreſcent. Branches roundiſh, almoſt naked, brown: branchlets angular, reddiſh-aſh coloured, ſcabrous with dots, alternate, from erect patulous. *Leaves* alternate, petioled, entire, from ſpreading erect; above green, ſmooth; underneath reddiſh-ſcaly with ferruginous dots interſperſed, an inch and half in length: petioles ſemi-cylindric, channelled above, half an inch long. *Flowers* axillary, ſolitary or in pairs, peduncled, upright. Peduncle ſhorter than the flower, capillary.

8. An upright thornleſs tree; branches round, ſtreaked, tubercled with the deciduous branchlets, aſh-coloured, ſcabrous with dots, upright; branchlets angular, alternate, like the branches. *Leaves* alternate, petioled, entire, from erect patulous; above ſmooth, green, beneath ſilvery; an inch in length: petioles ſemi-cylindric, above channelled, upright, half an inch long. *Flowers* axillary, aggregate, peduncled, almoſt upright: peduncles four or more, the length of the flower. It differs from *E. orientalis* in having rounded-ovate leaves, ſilvery underneath; from *E. latifolia* in having the leaves more rounded, and the branchlets not being ſpineſcent or becoming thorns.

9. An upright tree; a fathom in height, with a brown ſcabrous bark. Branches round, like the trunk, flexuoſe, leafleſs, ſpreading; branchlets alternate, like the branches, leafy, ſtiff, ſpineſcent at the end, the extreme ones axillary, ſpineſcent, very ſhort, leafleſs. *Leaves* alternate, petioled, ſomewhat obtuſe, entire; above ſmooth, green, beneath ſilvery with ſcales interſperſed with ferruginous dots, from reflex ſpreading, an inch long, ſtiff: petiole half an inch in length. *Flowers* in the axils of the leaves, about two, diſtinct, upright: pedicels ſhorter than the flower.—It differs from *E. ſpinoſa*, which Pallas thinks is only a variety of *E. orientalis*, in the branchlets becoming thorns; in the leaves being oblong and broader; the flowers two or three and larger.

This and the five foregoing ſpecies are natives of Japan[h].]

PROPAGATION AND CULTURE.

1. The firſt ſort is extremely hardy, and is not injured by froſt: it is not however of very long duration: young plants therefore ſhould be raiſed once in three or four years, by ſeeds or layers.

[2. Requires the protection of a greenhouſe.]

3. This ſort requires a warm ſtove to preſerve it in this country; for it is too tender to live in the open air, except for a ſhort time in the warmeſt part of the ſummer. It may be raiſed from ſeeds.

[The other ſpecies have not yet been introduced into cultivation in Europe.

ELÆAGRUS. See *Elæagnus*.

ELÆIS. (*So named by Jacquin, from* Ελαια, *the Olive, on account of the oilineſs of the nuts.*)

Lin. gen. Reich. n. 1340. *Schreb.* 1695. *Jacqu. amer.* 280. *Gærtn. t.* 6. *Juſſ.* 38.

Appendix Palmæ.—Dioecia Hexandria. *Thunb.*
Nat. order of *Palms*.

GENERIC CHARACTER.

* *Male.*

CAL. *Perianth* ſix-leaved: *leaflets* concave, upright.

COR. one-petalled, ſix-cleft, upright, ſharp, length of the calyx.

STAM. *Filaments* ſix, ſubulate, length of the corolla. *Anthers* oblong, ſharp.

* *Female.*

CAL. as in the male, (nine-leaved, with the inner leaflets longer, *G.*)

COR. ſix-petalled, (none, unleſs a part of the calyx be conſidered as ſuch, *G.*)

PIST. *Germ* ovate, (three-celled, *G.*) *Style* thickiſh, (three-cornered, *G.*) *Stigmas* three, reflex.

PER. *Drupe* fibrous, ovate, ſomewhat angulated, oily, (ſuperior, berried, one-celled, *G.*)

SEED. *Nut* ovate, obſcurely three-ſided, with three holes, three valved, (valveleſs, *G.*) one celled.

ESSENTIAL CHARACTER.

MALE. *Cal* ſix-leaved. *Cor.* ſix-cleft. *Stam.* ſix.

FEM. *Cal.* ſix-leaved, (nine-leaved, with the inner leaflets longer, *G.*) *Cor.* ſix-petalled, (none, *G.*) *Stigmas* three. *Drupe* fibrous. *Nut* one to three-valved, (valveleſs, *G.*)

SPECIES.

1. Elæis guineenſis.
Lin. ſyſt. 985. *Reich.* 4. 635. *mant.* 137. *Jacqu. amer.* 280. *t.* 172. *pict.* 136. *t.* 257. *Gærtn. fruct.* 17. *Sloan. jam.* 113. *t.* 214. *Brown. jam.* 344. 7?
Nucula indica ſecunda. *Cluſ. cur. poſt.* 85. *c. ic.*]
Palma oleoſa. *Mill. dict. n.* 6.

DESCRIPTION, &c.

[Trunk erect, irregular from the ſtipes of the fronds, which continue a long time, and are longer the nearer they are to the frond. Fronds pinnate, with a rigid rib (or rachis) fifteen feet in length, for four feet below the leaflets armed at the edge on both ſides with awl-ſhaped ſpines; the uppermoſt hooked and bowed back, the middle ones ſtraight, the loweſt patulous and twice as long as the reſt: leaflets ſword-ſhaped, acute, unarmed, folded back at the baſe, a foot and half long, and an inch broad. After theſe have fallen the rigid rib remains ſome time and reſembles a ſpine. Spadix axillary, a foot long, much compreſſed, erect, divided into about fifty branchlets, five inches long, erect, the thickneſs of a finger, compactly ſpiked, imbricate and irregularly diſpoſed, with triangular acuminate tips. The branchlets, except the tip, are wholly covered with ſmall flowers, each having a ſmall roundiſh bracte at the baſe, the loweſt on each branchlet being much larger than the others, with a lanceolate point. The flowers have a ſingular and very ſtrong ſmell, like Aniſe ſeeds mixed with Chervil leaves. Fruit larger than a pigeon's egg; the pericarp variegated with yellow, black and red, and ſo full of oil as to run out on being very ſlightly preſſed. Nut black, with longitudinal interrupted whitiſh ſtreaks[a]. Gærtner deſcribes the fruit as a berried drupe, ovate, ſmooth and yellowiſh, with a thin rind, and a thick, oily, fibroſe pulp, the fibres ſtiffiſh, and adhering very cloſely to the ſhell; which is ovate, contracted above, and has at bottom three holes, one pervious and two blind; it is obſcurely three-cornered, wrinkled, ſtony, thick, of a yellow ochrous colour. Seed globoſely conical, umbilicate beneath with an immerſed nipple in the middle, netted with depreſſed bowed ſtreaks, bay-coloured or cinereous-brown. The drupe varies in ſize and form, ſome being like a ſmall pear, others like a plum, others again ovate-oblong and attenuated at both ends, and ſome not larger than a Spaniſh olive.]

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[f] Linn. zeyl.

[g] Loureiro.

[h] Thunberg.

Mr. Miller ſays, that the leaflets are long, narrow, and not ſo ſtiff as moſt of the Palms; that the footſtalks of the leaves are broad at their baſe, where they embrace the ſtem, diminiſh gradually upwards, and are armed with ſtrong, blunt, yellowiſh thorns, which are largeſt at their baſe. The flowers come out at the top of the ſtem among the leaves; ſome bunches have only male flowers, others female; the latter are ſucceeded by oval berries, bigger than the largeſt Spaniſh olives, but of the ſame ſhape; they grow in very large bunches, and when ripe are of a yellowiſh colour.

From this fruit the inhabitants of the Weſt India iſlands draw an oil, in the ſame manner as it is extracted from olives. They alſo extract a liquor from the body of the tree, which when fermented has a vinous quality, and will enebriate. The leaves are wrought by the negroes into mats, on which they repoſe.

It is called in the Weſt Indies the Oily Palm, and by ſome Negroes Oil; the fruit of this tree having been firſt carried from Africa to America by the Negroes. It grows in great plenty on the coaſt of Guinea, and alſo in the Cape de Verd Iſlands, but was not in any of our American colonies, till it was carried there by the Negroes, who now propagate it in great plenty.—[Jacquin alſo ſays that he has never ſeen this tree wild in America, and that the French call it *Palmier*.

Gærtner has ſet down another *Elæis*, which he names *melanococca*, from the blackneſs of the nuts. He thinks it may poſſibly be no more than a variety: the ſhell however is much ſmaller, and not ſo much bellied, but rather oblong, and ſuddenly contracted at the tip into an oblique dagger-point; it is alſo thinner, and elegantly variegated on the outſide with teſtaceous ſtreaks, irregularly confluent, with other alternate ſtreaks like the others, but of a coal black; when broken it appears of a footy black colour. The ſeed is ovate-oblong and brown.

Jacquin alſo mentions another very thorny Palm, which has ſomewhat of the ſame habit with Elæis guineenſis, and is called in Martinico *Grigri*. The fruit is eatable, of an acid flavour, globular ſlightly depreſſed, acuminate by means of the ſtyle, ſcarlet and ſhining. The pulp is ſmall, red, ſoft and not fibrous, ſurrounded by a very thin pellicle. Nut brown, with three obſcure holes, from which run lines in a ſtellate order like veins over the whole ſurface. Kernel cartilaginous and hollow. The fruit is figured in amer. pict. t. 263. f. 89.

Another Palm occurs about Carthagena, called by the natives *Corozo*. They make both an oil and a butter of the fruit for domeſtic uſes. The pericarp is ſhining and yellow on the outſide, ſupported by a three-leaved calyx and a three-petalled corolla, permanent and ſhining; it is but little fibroſe, not thick, and contains a pleaſant oil. Its form is ovate obſcurely three-cornered. Nut black and ſhining, of the ſame form, with three obſcure holes at the baſe. Kernel roundiſh, cartilaginous, very hard, ſolid, with the centre ſlightly cloven. The fruit of this is alſo figured in amer. pict. t. 263. f. 90.

Linneus (in mant.) refers to the third Palm of Miller, which is the Macaw-tree of the Weſt Indies. See *Bactris* and *Cocos*.

PROPAGATION AND CULTURE.

It muſt conſtantly be kept in the bark-ſtove, otherwiſe it will not make any great progreſs. In about twenty years it will be too tall for moſt of our ſtoves. It is propagated by ſeeds, for the ſowing and management of which ſee *Palms* and *Phoenix*.

ELÆOCARPUS. (*From* Ελαια *Olive, and* Καρπος, *fruit.*)

Lin. gen. n. 663. *Reich.* 719. *Schreb.* 898. *Burm. Retz. obſ.* 4. 27. *Gærtn. t.* 43. *Juſſ.* 258.

Claſſ. 13. 1. Polyandria Monogynia.

Nat. order of *Guttiferæ*. Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, ſpreading, permanent, five-parted: *leaflets* linear-lanceolate, concave, ſharp.

Cor. *Petals* five, with claws; multifid-laciniate, the extreme jags capillary, equal, ſcarcely longer than the calyx, inſerted at the baſe of the nectary.

Stam. *Filaments* twenty to thirty, capillary, very ſlender, ſhort, inſerted into the nectary. *Anthers* ſhorter than the corolla, upright, linear, ſcabrous, two-valved at the tip; valves ſpreading, with about five ciliate hairs, very ſlender, from reflex expanding, unequal.

Pist. *Germ* ſomewhat globular, villoſe, ſitting on the nectary. *Style* filiform, longer than the ſtamens. *Stigma* ſharp.

Per. *Drupe* oblong, of a ſmooth even ſurface.

Seed. *Nut* oblong, grooved and tubercled; ſhell ſubtrivalvular; kernel ſubtrigonal.

Obs. *Number of the diviſions in the calyx and petals frequently three: but of the primary diviſions in each petal three to five. Stamens eight to twenty, twenty-five, and twenty-ſeven.*—E. copallifera Retz. *very different: doubtful whether it be of this genus.*

ESSENTIAL CHARACTER.

Cal. five-leaved (or one-leafed, five-parted.) *Cor.* five-petalled, jagged. *Anthers* two-valved at the tip. *Drupe* with a curled ſhell.

SPECIES.

1. Elæocarpus ſerratus.
Lin. ſpec. 734. *Vahl ſymb.* 3. 67.
Leaves alternate lanceolate-elliptic ſerrate, racemes axillary.

2. Elæocarpus dentatus.
Vahl ſymb. 3. 67.
E. ſerratus. *Lin. ſuppl.* 266.
Dicera dentata. *Forſt. gen.* 80: which ſee.
Leaves alternate oblong tooth-ſerrate at top, racemes axillary, flowers one-ſtyled.

3. Elæocarpus Dicera.
Lin. ſuppl. 266. *Vahl ſymb.* 3. 67.
Dicera ſerrata. *Forſt. gen.* 80: which ſee.
Leaves oppoſite ovate doubly-ſerrate, racemes compound, flowers four-ſtyled.

4. Elæocarpus copalliferus.
Retz. obſ. 4. 27. *n.* 85. *Vahl ſymb.* 3. 67. *Rheed. mal.* 4. 33. *t.* 15. (Pænoe.)
Vateria indica. *Lin. ſyſt.* 494.
Leaves quite entire, panicle terminating.

5. Elæocarpus integerrimus.
Lour. cochinch. 338.
Leaves lanceolate quite entire, flowers heaped axillary.

6. Elæocarpus oblongus.
Gærtn. fruct. 202. *Rumph. amb.* 3. 161. *t.* 102.

DESCRIPTIONS, &c.

1. Branches round, warted, ſmooth. Leaves petioled, three inches long, bluntly-ſerrate, ſmooth, nerved and veined. Racemes axillary; flowers diſtant[b]. Linneus obſerves, that they are ſimple, looſe, ſolitary, the length of the leaves, which have a double gland at their baſe[c]. According to

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[a] Jacquin.

[b] Vahl.

[c] Fl. zeyl.

Retzius, the calyx has three, four or five ſharp keeled diviſions; and the corolla has three petals, cut in tripartite diviſions; the ſtamens twenty-five, with anthers terminating in cirrhoſe threads, and the germ very tomentoſe [d]. Linneus affirms, that there are twenty ſtamens in the Ceyloneſe plant, eight in that from Java, and ſixteen in Burman's [e]; who ſays however that there are ſixteen when there are four diviſions of the calyx, and twenty when there are five. The deſcription under *Dicera dentata* belongs to this ſpecies.

2. Branches round, dotted, ſmooth, with pubeſcent branchlets. Leaves petioled, two inches long, ſharp at the baſe, ſmooth on both ſides, except on the midrib, nerved above, ſomewhat veined underneath. Petioles villoſe [f].

This is a native of the iſlands of the South Seas; and the preceding of ſeveral parts of the Eaſt Indies. The two ſpecies have been confounded.

3. Branches round, a little compreſſed at top. Leaves petioled, ſmooth, veined at top, two inches long. Racemes three inches long, erect [g]. According to Linneus's ſupplement, it correſponds with the preceding in the ſtructure of the flower; but it differs in having four ſtyles, a berried four-celled fruit, and two ſeeds in each cell. See *Dicera ſerrata.*

4. Leaves large, ovate, coriaceous, very entire, with tranſverſe nerves. Flowers in panicles. Calyx ſuperior, the diviſions linear-oblong, obtuſe, tomentoſe on both ſides. Petals longer than the calyx, ovate, entire. Stamens forty or more: anthers filiform at the tip. Germ conic, ſtreaked, tomentoſe: ſtyle angular. Fruit a conic, fleſhy, reſinous, one-celled pome.—The long linear anthers terminated by cirrhoſe threads ſeem to furniſh a better character than the torn petals.—It yields the copal reſin, but of this there are ſeveral ſorts [h].

It is thus deſcribed by Vahl.—This is a lofty tree, with round branches, mealy-tomentoſe at top, and ferruginous. Leaves petioled, alternate, half a foot long and more, lanceolate, acuminate, rounded at the baſe, almoſt three inches broad, ſubcoriaceous, ſmooth on both ſides, above very finely marked with lines along the nerves, and with more obſcure oblique lines between the nerves, beneath having protuberant, alternate nerves. Petioles two inches long, round, thicker towards the leaf, mealy-villoſe. Panicle a foot long, ſpreading, meally tomentoſe: partial peduncles roundiſh, alternate. Flowers on the outmoſt branches of the panicle, racemed, nodding. Calyx tomentoſe, hoary: ſegments obtuſe, villoſe within, hoary, ſubcoriaceous. Petals oblong, ſmooth, coriaceous, quite entire. Filaments ſcarcely any: anthers numerous, awl-ſhaped, with a groove on each ſide, whitiſh, divided at top into two briſtles, ſhorter than the corolla. Germ ſuperior, conical, one-third of the length of the corolla, hairy, grooved and angular: ſtyle filiform, ſmooth. Drupe cylindric, two inches long, the thickneſs of the thumb, ferruginous and meally, ſharp at the tip, and very blunt at the baſe.

Vahl obſerves, that Vateria of Linneus agrees with Elæocarpus in the calyx, corolla, anthers, and fruit; and that they are the ſame, appears from the ſpecimen in Herman's herbarium. He does not find that the calyx is ſuperior, as Retzius affirms it to be.

Native of the Eaſt Indies.

5. This is a middle-ſized tree, with ſpreading branches. Leaves ſmooth, petioled, alternate. Flowers many, golden, ſweet-ſmelling. Calyx five-leaved, with lax leaflets. Petals lacerated, longer than the calyx. Germs ten, roundiſh, minute, placed round the baſe of the ſtyle. Drupe ſmall, black, ſubovate, ſubacute, ripening ſingly, the reſt of the germs proving abortive.—Native of Cochin-china, where it is alſo cultivated on account of the ſweetneſs and beauty of the flowers [i].

6. Drupe berried, ſuperior, ovate-oblong or ſubcylindric, ſmooth, covered with a ſoft fleſhy bark; ſhell ſtony, oblong, muricate and curled, with irregular tubercles; having three ſpurious ſutures never opening, one-celled, teſtaceous. Seed oblong, attenuated to both ends, obſcurely three-cornered, ferruginous [k].

Native of the Eaſt Indies.

ELÆODENDRUM. (*Olive-wood; from* ελαια *and* δενδρον, *a tree.*)

Fr. *Bois d'Olive.*

Lin. gen. Schreb. n. 385. *Jacqu. fil. act. helv.* 9. 36. *Jacqu. rar. t.* 48. *Gærtn. t.* 57.

Claſſ. 5. 1. Pentandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved: *leaflets* roundiſh, blunt, concave, ſpreading very much, ſmall, permanent.

COR. *Petals* five, roundiſh, blunt, concave, ſpreading very much, twice as long as the calyx.

STAM. *Filaments* five, ſubulate, bent back, ariſing from a gland beneath the germ. *Anthers* roundiſh, erect.

PIST. *Germ* roundiſh, conical, placed on a gland. *Style* conical. *Stigma* obtuſe bifid.

PER. *Drupe* ovate, obtuſe.

SEED. *Nut* ovate; *ſhell* thick and very hard; two-celled. *Kernels* oblong, compreſſed.

ESSENTIAL CHARACTER.

Cor. five-petalled. *Drupe* ovate, with a two-celled nut.

SPECIES.

1. Elæodendrum orientale.
Lin. ſyſt. 241. *Jacqu. icon. rar.* 1. *t.* 48.
E. indicum. *Gærtn. fruct.* 1. 274?

2. Elæodendrum Argan.
Retz. obſ. 6. 26. *n.* 29.
Branches ſpiny, leaves ovate obtuſe.

DESCRIPTIONS, *&c.*

1. A moderate ſized twiggy ſhrub or tree, a native of the Oriental regions; with the leaves ovate-lanceolate, ſmooth, ſometimes ſlightly waved, and ſometimes even a little inclining to a ſubſerrated appearance on the upper parts of the ſhoots. Flowers borne towards the ends of the branches, ſtanding by twos and threes; of a pale green colour, ſupported on ſhortiſh pedicels, each of which ſprings from a ſomewhat longer common pedicel. The lower ſhoots, or thoſe neareſt the ground, appear to be ſomewhat procumbent, and have narrower and longer leaves in proportion than the upper ones; the nerves or midribs of theſe leaves are alſo of a reddiſh colour [l].

2. This is a middle-ſized tree, with ſhort thickiſh ſpines at the ends of the branches. Leaves ſolitary and in bundles, an inch long, petioled, quite entire, coriaceous: others decreaſe towards the petiole, ſo as to be almoſt ſpatulate. Flowers in the axils of the leaves and ſpines, heaped, ſeſſile. Calyx inferior; leaflets a little unequal, hirſute and brown on the outſide, with the edges ſmooth and whitiſh. Petals half-ovate, entire, greeniſh with white edges. Filaments longer than the corolla, compreſſed, faſtened to the baſe of the petals. Anthers ovate. Germ from an ovate baſe conical, hairy, terminated by a ſtyle the length of the ſtamens and a ſimple ſtigma. Drupe dry. Nut very hard and ſmooth, pale brown, divided longitudinally by a white line; and having a ſingle kernel in each cell.—The calyx and ſtyle abide after the petals are fallen, but are wanting in the fruit. One of the cells in the nut is generally abortive. It is called *Argan* by the Moors, who expreſs an oil from the fruit, which the Europeans uſe in a variety of works, and the Moors for the table.

Native of the woods of Morocco, whence it was ſent to Retzius by Profeſſor Schulten [m].

ELAIOCARPOS. See *Elæocarpus* and *Dicera.*

ELAIS. See *Elæis.*

ELAPHRIUM. See *Fagara.*

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[d] Retz. obſ. 4. p. 27. n. 86.
[e] Fl. zeyl.
[f] Vahl.
[g] Ibid.
[h] Retz.
[i] Loureiro.
[k] Gærtn.
[l] Jacquin.
[m] Retz.

ELATE. (*So named* παρα το ελαν, *from its great height*, Ελατη ουρανόμηκης *Homer. Suppoſed to be a Fir. It is however put for a Palm, or perhaps rather the fruit or ſpathe of a Palm, in Galen and Dioſcorides.*)

Lin. gen. Reich. n. 1342. *Schreb. n.* 1697. *Juſſ.* 38.

Append. Palmæ.—Monoecia Triandria. *Thunb.*
Nat. Order of *Palms*.

GENERIC CHARACTER.

* Male flowers.

CAL. *Spathe* two-valved. *Spadix* branching.
COR. *Petals* three, roundiſh.
STAM. *Filaments* three, ſimple. *Anthers* adnate.

* Female flowers in the ſame Spadix with the males.

CAL. *Spathe* common with the males.
COR. *Petals* three, roundiſh, permanent.
PIST. *Germ* roundiſh. *Style* ſubulate. *Stigma* ſharp.
PER. *Drupe* ovate, acuminate.
SEED. *Nut* ovate, grooved.

ESSENTIAL CHARACTER.

MALE. *Cal.* three-toothed. *Cor.* three-petalled. *Anthers* ſix, ſeſſile.
FEM. *Cal.* one-leafed. *Cor.* three-petalled. *Piſt.* one. *Stigmas* three. *Drupe* one-ſeeded.

SPECIES.

1. Elate ſylveſtris. *Prickly-leaved Elate.*
Lin. ſpec. 1659. *Reich.* 4. 636. *Rheed. mal.* 3. 15. *t.* 22-25. *Burm. ind.* 241. *Kæmpf. amæn.* 667.
Palma dactylifera minor humilis ſylveſtris, fructu minore. *Herm. prodr.* 361. *Lin. zeyl. n.* 397. *Burm. zeyl.* 183.
P. ſylveſtris malabarica, fol. acuto, fr. pruni facie. *Raii hiſt.* 1364.
Fronds pinnate, leaflets oppoſite.

DESCRIPTION, &c.

This Palm grows to the height of about fourteen feet, the trunk being covered with an aſh-coloured cruſt, cloſely united with a very hard whitiſh wood. Pinnate leaves break out from the top of the trunk only, in a decuſſated order, the old ones dropping off as the young ones break forth. The midribs are green, ſmooth and ſhining, flat within, convex without, with long ſtiff ſpines at bottom. Leaflets oppoſite, on ſhort petioles, numerous, oblong-rounded, acuminate, cloſe, ſmooth, of a ſhining green, cloſed at the baſe towards the inſide, finely ſtreaked longitudinally. The flowers are concealed in ſtiff, green, coriaceous ſpathes, they are ſmall, ſeveral on the ſame peduncle; petals whitiſh green; ſtamens whitiſh, lanuginoſe.

They have no ſmell, but a rough taſte. Fruits oblong-round, ſmall, like a wild Plum, with a hard woody point at top, covered with the calyx at bottom, firſt green, then red, but when ripe of a reddiſh brown, or blackiſh and ſhining, covered with a thin rind that is eaſily broken, and having a whitiſh, ſweet, farinaceous pulp within; the nut or ſtone is oblong, rufous, marked longitudinally with a deep furrow, and containing a whitiſh bitter kernel. The fruits grow on green, ſmooth, ſhining branches, near a yard long, and two fingers broad, flat, ſtiff and woody; whence a clear auſtere liquor flows when they are cut or wounded.

The poorer ſort of people chew the nut in the ſame manner with the Areca nut, with the leaf of the Betel and quick-lime. The elephants are very fond of the fruit branches, which are very ſweet. The leaves, fruit, &c. are very aſtringent, and are looked upon as powerful in ſtopping fluxes[a].

Native of the Eaſt Indies. Introduced about 1763, by John Blackburne, Eſq.[b]

PROPAGATION AND CULTURE,

See PALMS.

ELATERIUM. (Ελατηριον, *from* ελαυνω; *whatever purges the belly; troches made of the juice of the wild Cucumber; and a name for that Cucumber itſelf.*)

Lin. gen. n. 1036. *Reich.* 1128. *Schreb.* 1398. *Jacqu. amer.* 241. *t.* 154. *Juſſ.* 294.

Claſſ. 21. 2. Monoecia Monandria.
Nat. order of *Cucurbitaceæ*.

GENERIC CHARACTER.

* *Male* flowers.

CAL. none.
COR. one-petalled, ſalver-ſhaped. *Tube* cylindric. *Border* five-cleft: *diviſions* lanceolate, channelled on the back, the inciſures furniſhed with a toothlet.
STAM. *Filament* ſingle, columnar. *Anther* linear.

* *Female* flowers.

CAL. as in male.
COR. as in male.
PIST. *Germ* inferior, echinate. *Style* columnar, thickening. *Stigma* capitate.
PER. *Capſule* inferior, echinate, leathery, filled with pulp, uniform, one-celled, two-valved, elaſtic.
SEEDS ſeveral.

ESSENTIAL CHARACTER.

MALE. *Cal.* none. *Cor.* ſalver-ſhaped.
FEM. *Cal.* none. *Cor.* ſalver-ſhaped. *Capſ.* inferior, one-celled, two-valved.

SPECIES.

1. Elaterium carthagenenſe.
Lin. ſpec. 1375. *Reich.* 4. 91. *Jacqu. amer.* 241. *t.* 154. *pict.* 118. *t.* 232.
Leaves cordate, angular.
2. Elaterium trifoliatum.
Lin. ſyſt. 839. *Reich.* 91. *mant.* 123.
Sicyos fol. ternatis. *Gron. virg.* 2. 191.
Leaves ternate, gaſhed.

DESCRIPTIONS, &c.

1. This is probably an annual plant. Stems round, ſmooth, herbaceous, diffuſed, ſcandent, with tendrils bifid and lateral. Leaves very finely ſerrate, ſmooth underneath, ſomewhat rugged above, petioled, alternate, numerous. Peduncles of the male flowers axillary, ſolitary, many-flowered, ſpreading, almoſt the length of the leaves, racemed or ſubumbelled. Female peduncle from the ſame axil, ſolitary, one-flowered, ſhort. Corolla white, without ſcent in the day, but ſmelling ſweet at night. Fruit green, an inch and half long, having but little watery pulp, ſmelling like cucumber; when ripe it opens elaſtically with a very gentle touch, and diſperſes its ſeeds; or when approaching to maturity, if it be held ſome time in the hand cloſed, it will do the ſame. One valve is compoſed of the whole ſides and the anterior part of the fruit, and is roundiſh two-lobed on one ſide, or like the figure 8: the back of the capſule forms the other, which is therefore oblong: this on the inſide at the tip is furniſhed with a lanceolate appendix, highly elaſtic, furniſhed with about eighteen toothlets, to which as many browniſh ſeeds adhere.

Native of Carthagena in New Spain, covering entire ſhrubs with its ſtalks, and flowering in october and november[c].

2. Capſule kidney-ſhaped, rough with hairs, two-valved, opening with a ſpring; and therefore of this genus.

Native of Virginia[d].

ELATERIUM. See *Momordica*.

ELATINE. (*Of Pliny*, Ελατινη *of Dioſcorides.* Ελατινος *or* εἰλάτινος, *abiegnus.* Ελατινον μυρον, *oil or ointment of Elate.*)

Lin. gen. n. 502. *Reich.* 544. *Schreb.* 685. *Gærtn. t.* 112. *Juſſ.* 300. *Potamopithys Buxb. act. Petrop.* Alſinaſtrum. *Vaill. bot. par.* 1. *f.* 6.

Claſſ. 8. 4. Octandria Tetragynia.
Nat. order of *Inundatæ*.—*Caryophylleæ*. Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* four-leaved; *leaflets* roundiſh, flat, ſize of the corolla, permanent.
COR. *Petals* four, ovate, obtuſe, ſeſſile, ſpreading.
STAM. *Filaments* eight, length of the corolla. *Anthers* ſimple.
PIST. *Germ* orbicular, globoſe-depreſſed, large. *Styles* four, upright, parallel, length of the ſtamens. *Stigmas* ſimple.

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[a] Hort. malab. and Ray hiſt.

[b] Hort. kew.

[c] Jacquin.

[d] Linn. mant.

Per. *Capſule* orbicular, globoſe-depreſſed, large, four-celled, four-valved.

Seeds ſeveral, mooned, upright, ſurrounding the receptacle in the manner of a wheel.

ESSENTIAL CHARACTER.

Cal. four-leaved. *Pet.* four. *Capſ.* four-celled, four-valved, flatted.

SPECIES.

1. Elatine Hydropiper. *Oppoſite-leaved Water-wort.* *Lin. ſpec.* 527. *Reich.* 1. 223. *fl. lapp.* 156. *Suec. n.* 348. *Hall. helv. n.* 858. *Gron. virg.* 158. *Fl. dan. t.* 156. *Krock. ſileſ. n.* 618.
Alſinaſtrum ſerpillifolium, fl. albo tetrapetalo, & roſeo tripetalo. *Vaill. par.* 5. *t.* 2. *f.* 1, 2.
Leaves oppoſite.

2. Elatine Alſinaſtrum. *Whorl-leaved Water-wort.* *Lin. ſpec.* 527. *Reich.* 223. *fl. ſuec. n.* 349. *Hudſ. angl.* 173. *With.* 418. *Hall. helv. n.* 857. *Sauv. monſp.* 164. *act.* 1743. *p.* 50. *Gærtn. fruct.* 142.
Alſinaſtrum gallii folio. *Vaill. par.* 6. *t.* 1. *f.* 6.—gratiolæ fol. *Tourneſ. inſt.* 244. *Raii ſuppl.* 502. *ſyn.* 346.
Equiſetum paluſtre, linariæ ſcopariæ folio. *Bauh. pin.* 15.
Leaves in whorls.

DESCRIPTIONS, *&c.*

Theſe are annual aquatic herbs, very low, and ſpreading; the flowers axillary and very ſmall. In the firſt ſpecies they have ſometimes only three petals, and ſix ſtamens; in the ſecond, there are ſometimes no more than four ſtamens[a].

1. A very ſmall plant, hardly a ſpan in length. Stems very tender, creeping; the ſhoots erect, and leafy. Leaves ovate-lanceolate, quite entire, ſeſſile at the joints. Flowers ſolitary, much ſmaller than in the ſecond ſpecies, alternate, on very ſhort peduncles at the axils of the leaves on the branches, and cloſe to them on the ſtem. Petals white, purpliſh or roſe-coloured: ſtyles none, ſtigmas very ſmall: anthers globular. Capſules ſmaller than in the ſecond[b].

Native of Denmark, Sweden, Switzerland, Sileſia, France; in ditches and wet places: flowering in ſummer.

2. Stem decumbent, creeping at bottom, then erect, pellucid, brittle, ſix or ſeven inches in length, branched, round, the thickneſs of a quill, at the lower joints thick ſet with roots hanging in the water, having at the reſt whorled, ſeſſile, entire leaves, four to ſix in a whorl, (eight to twelve, *Haller*) at top only three: the emerſed leaves ovate-lanceolate, the immerſed ones linear, or even (according to ſome) capillaceous, bright green, reflex. Flowers axillary, two or three ſeſſile; calyx very ſmall, greeniſh; petals three or four, white, a little larger than the calyx: ſtamens ſeven or eight, very ſhort[c]. Capſule a little flatted; the partitions growing to the axis and oppoſite to the ſutures of the valves. Seeds numerous, very ſmall, ſomewhat cylindric; marked with longitudinal ſtreaks, and tranſverſe ones much finer, in a beautiful kind of net-work, bent a little and aſh-coloured[d].

Native of Aboa, Leipſic, Sileſia, Switzerland, near Paris and Montpellier, England; in ditches.—Found by Mr. James Sherard on the bogs upon the common, by the road from Eltham to Chiſſelhurſt. It flowers in june and july.]

Elatine. See *Antirrhinum*, [*Lathyrus Aphaca*, and *Veronica.*

Elatostema. See *Dorſtenia.*]

Elder. See *Sambucus.*

Elder, Marsh. See *Viburnum.*

Elecampane. See *Inula.*

[ELEGIA. Ελεγεια *are elegiac verſes, from* ελεγος *mourning; which is* παρα το ελεος; *or* το ελειν; *or from* ἒ ἒ ἐλέγειν, *expreſſive of weeping in Ariſtophanes: but what has that to do with this plant?*)
Lin. mant. 162. *gen. ed. Schreb. n.* 1494.

Claſſ. 22. 3. Dioecia Triandria.
Natural order of *Calamariæ*. *Junci* Juſſ.

GENERIC CHARACTER.

* *Male.*

Cal. *Spathes* within ſpathes, remote, one-valved, coriaceous, lanceolate, deciduous.
Spadix filiform, jointed; with an ament at each joint.
Ament looſe, with pedicelled florets, diſtinguiſhed by a bracte.
Bracte briſtle-ſhaped, membranaceous, flat, longer than the florets.
Perianth proper, of ſix, briſtle-ſhaped, chaffy looſe leaflets.

Cor. none.

Stam. *Filaments* three, very ſhort. *Anthers* incumbent, oval, larger than the perianth.

* *Female, on a diſtinct individual.*

Cal. *Spathe* as in the male, but ſhorter.
Spadix as in the male.
Ament with a compound raceme.
Perianth proper ſix-leaved: *valves* the three outer lanceolate, channelled, petaloid, equal.

Cor. none.

Pist. *Germ* ſomewhat oblong. *Styles* three, filiform, the length of the perianth. *Stigmas* ſimple.

Per.

Seed.

Obs. Elegia, *firſt diſtinguiſhed by Linneus from the genus* Reſtio, *and afterwards immerſed in it by him, is ſettled by Thunberg to be diſtinct from* Reſtio, *in a diſſertation on that genus.*

ESSENTIAL CHARACTER.

SPECIES.

1. Elegia juncea.
Lin. Mantiſſ. pl. altera. p. 297.

DESCRIPTION.

This is a native of the Cape of Good Hope, and has the habit of a Ruſh: the ſtems are ſeveral, about a foot high, round, ſmooth, filled as it were like thoſe of a Ruſh; hard, ſtrong, very ſimple, ſcarce ſo thick as a quill, with a ſimple joint. There are ſcarce any leaves, but two or three leafy ſheaths towards the root, imbricated over each other, and of a brown colour; there is alſo a rudiment of a ſimilar ſheath towards the middle of the ſtem: the ſpathe is terminal, and divided into other interior ones, which are alſo compound: the parts of fructification are not very eaſily made out, but are moſt clear in the female flowers.

Elemifera. See *Amyris.*

Elengi. See *Mimuſops.*

Eleoselinum. See *Apium.*]

ELEPHANTOPUS. (*Elephant's-foot: ſo named by Vaillant, from the ſhape of the lower leaves in the firſt ſpecies.*)
Lin. gen. n. 997. *Reich.* 1081. *Schreb.* 1347. *Vaill. act. gall.* 1729. *f.* 11. 41. *Dill. elth.* 104. *Juſſ.* 178. *Gærtn. t.* 165. *Swartz obſ.* 315.
Claſſ. 19. 5. Syngeneſia Polygamia Segregata.
Nat. order of *Compoſitæ Capitatæ.*—*Corymbiferæ*, Juſſ.

GENERIC CHARACTER.

Cal. *involucre* of three broad, ſharp *leaflets*, many-flowered, large, permanent, without an umbel.
Perianth partial four-flowered, oblong, imbricate: ſcales lance-ſubulate, mucronate, upright, of which the four longer are equal.

Cor. *Compound* tubular: *Corollets* hermaphrodite five or four, equal, diſpoſed in a ſingle circle.
Proper one-petalled, tubular. *Border* narrow, five-parted, nearly equal.

Stam. *Filaments* five, capillary, very ſhort. *Anther* cylindric, tubular.

Pist. *Germ* ovate, crowned. *Style* filiform, length of the ſtamens. *Stigmas* two, ſlender, ſpreading.

Per. none. *Calyx* unchanged.

Seeds ſolitary, compreſſed. *Down* briſtle-form.

Rec. naked.

Obs. *This genus ſhows that no limits intervene between the floſculous and ſemifloſculous flowers of Tournefort.*

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[a] Juſſieu. [b] Krocker. [c] Ibid. [d] Gærtner.

ESSENTIAL CHARACTER.

Cal. four-flowered. *Cor.* tubular, hermaphrodite. *Recept.* naked. *Down* briſtle-form.

SPECIES.

1. Elephantopus ſcaber. *Rough-leaved Elephant's-foot.*
Lin. ſpec. 1313. *Reich.* 3. 943. *hort. cliff.* 390. *upſ.* 147. *Gærtn. fruct.* 2. 414. *Gron. virg.* 176. *Brown. jam.* 312. *Sloan. jam.* 1. *t.* 156. *f.* 1. (Scabioſæ affinis.) *Dill. elth.* 126. *t.* 106. *f.* 126. *Breyn. ic.* 32. *t.* 24. (Bidens.) *Pluk. alm. t.* 388. *f.* 6. (Echinophora.) *Rheed. mal.* 10. *t.* 7. *Burm. ind.* 185.
Leaves oblong, ſcabrous.

2. Elephantopus tomentoſus. *Woolly-leaved Elephant's-foot.*
Lin. ſpec. 1314. *Reich.* 943. *Gron. virg.* 115.
Leaves ovate tomentoſe.

[3. Elephantopus ſpicatus.
Swartz prodr. 115. *Gærtn. fruct.* 2. 415. *Aubl. guian.* 808. *Lamarck encycl.* 2. 349. *Brown. jam.* 311. 1.
Conyza major inodora helenii folio, &c. *Sloan. jam.* 1. 256. *t.* 150. *f.* 3, 4.
Leaves ovate-lanceolate ſerrate ſcabrous, bundles of flowers ſeſſile lateral, ſtem branched.

4. Elephantopus anguſtifolius.
Swartz prodr. 115.
C. inod. hel. fol. integro anguſto, &c. *Sloan. jam.* 1. 256. *t.* 148. *f.* 4.
Stem-leaves linear-lanceolate entire villoſe, flowers glomerate in ſeſſile and peduncled bundles, ſtem ſimple.

DESCRIPTIONS, *&c.*

Stem ſomewhat woody; involucres three-leaved containing three calyxes, ſometimes large boat-ſhaped, in very looſe corymbs, and on long pedicels; ſometimes ſmaller in the ſhape of bractes and axillary, ſeſſile and in ſpikes[a].]

1. This ſends out from a perennial root many oblong rough leaves, which ſpread near the ground: between theſe, in the ſpring ariſes a branching ſtalk, little more than a foot high. The ſide-branches are ſhort, and generally terminated by two heads of flowers, each on a ſhort peduncle. The florets are of a pale purple colour.

[Dillenius deſcribes it more particularly. Height commonly eighteen inches or two feet. Stem rigid, round and hairy, the thickneſs of the little finger at bottom. Leaves embracing, much wrinkled, hirſute with hairs over the whole ſurface, ſerrate, but the ferrature frequently not very conſpicuous becauſe the leaves are ſo much wrinkled and bent. From the axils of theſe, towards the top, ſpring forth the flowering branches, terminated by leafy heads collected in bundles; each having two or three leaves under it, inſtead of a common calyx; in the boſom of theſe is the flower, the proper calyx of which conſiſts of many narrow, ſharp-pointed, pungent ſcales, and contains three, four, or five florets, very pale purple, tubular, commonly divided into five narrow ſegments. Seeds cylindric-compreſſed, crowned with dry white ſegments inſtead of a pappus.

According to Browne, it riſes generally from half a foot to three or four feet in height; and is generally adorned with a great number of flowers, gathered into pretty large heads, at the extremities of the branches. The ſeeds are of an oblong form, each crowned with five little briſtles. The common peduncles are very long, and terminate the branches; but at the ſeparations of them there is always a ſmaller head growing to the ſtem, without any ſupporter. It is ſuppoſed to be a native of both Indies; Mr. Miller received it from ſeveral parts of America. Browne ſays, it is frequent enough in many places, on the north ſide of the iſland of Jamaica. Vaillant gave this plant the name of Elephantopus, becauſe he took it to be the ſame with the Ana-Schovadi of the Hortus Malabaricus, which ſignifies the foot-ſtep of an elephant. The accurate Dillenius however is doubtful of this, and perhaps after all, the Eaſt-Indian and Weſt-Indian plants may be different ſpecies.

This is a perennial plant, and flowers at the end of ſummer, and beginning of autumn,] but rarely produces ſeeds in England.

[It was cultivated in the botanic garden at Chelſea in 1695[b].

Browne ſays, that it is accounted a good vulnerary, and much uſed in conſumptive caſes in the Eaſt Indies. The leaves are frequently uſed, inſtead of Carduus Benedictus, among the inhabitants of the French Weſt India iſlands.]

2. Root-leaves four inches long and three broad, having many tranſverſe nerves; they ſpread flat on the ground, and from among them riſes a ſtiff ſtalk, about a foot high, dividing into ſeveral branches, and terminated by two flowers, compoſed of ſeveral florets, incloſed in a four-leaved involucre, having two of the leaflets alternately larger than the two others. This involucre being longer than the florets, they do but juſt appear within the two larger leaves; and the flowers make little appearance. They come out in July, but the ſeeds never ripen in this country. It grows naturally in South Carolina; and frequently comes up as a weed in earth ſent over thence with other plants. [Linneus remarks, that it is very nearly allied to the preceding.

3. This generally riſes to the height of fifteen or twenty inches, ſometimes more. The common receptacles of the flowers riſe ſingly from the axils of the upper leaves, and ſeem diſpoſed in the form of a ſpike, but there are ſeldom more than four florets in each. The ſeeds are crowned with four little briſtles[c].

At firſt coming up it has many leaves, five inches long, and an inch and half broad where broadeſt; beginning very narrow, they continue ſo for two inches, and end in a round point; they are hard, ſmooth, dark green, and indented about the edges. From among theſe a round, ſtrong, green ſtalk riſes, four feet high, with an embracing leaf at each joint: it has branches towards the top, ſtanding round at every joint, divided into others, which are beſet with ſmaller leaves. From the axils of theſe come out the flowers, without any peduncle, ſtanding in ſeveral green leaves. The corollets are white[d].

The flowers are in bundles, without any involucre, ſeſſile in the axils of the leaves, in form of ſpikes on the uppermoſt branches. Calyxes ſubcylindric, four-leaved, with as many awl-ſhaped, imbricate ſcales at the baſe, and four-flowered. Seeds oblong, attenuated downwards, compreſſed, ſtriated, having very minute, appreſſed fulvous briſtles ſcattered over them, of a brown-ochrous colour. Egret briſtle-awned, toothleſs, having five or ſeven rays, two of which are lateral and very long, below the tip, having a double curvature, firſt downwards then up again; the others are ſtraight, ſhorter, ſometimes very ſhort: all are of a whitiſh ſtraw-colour, ſlightly widening at the baſe, toothleſs and ſmooth.

Linneus has called the corollets *ligulate*, whereas they are plainly tubular, equally and deeply five-cleft; he was perhaps led into the miſtake, from the two outmoſt ſegments being ſometimes glued together[e].

Native of Jamaica, Hiſpaniola, and Guiana.

4. Root large, oblong, whence riſes a ſingle, round, ſtriated, hollow ſtalk, about two feet high, having ſeſſile leaves ſet on it alternately; their lower part whereby they are joined to the ſtalk having a membrane incloſing it: they are about five inches long, and half an inch broad near the top where broadeſt; end round, are of a pale green colour, and wrinkled. Towards the top come out the flowers in a ſpike, ſeſſile, incloſed in an involucre of a few dry brown membranes: theſe are followed by ſmall channelled ſeeds, having much pappus on them[f].

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[a] Juſſieu.

[b] Hort. kew.

[c] Browne.

[d] Sloane.

[e] Gærtner.

[f] Sloane.

Native of Jamaica: Sloane found it about mount Diablo very plentifully.]

PROPAGATION AND CULTURE.

Theſe plants are propagated by ſeeds, which ſhould be ſown on a hot-bed in the ſpring; and when the plants are come up, they muſt be tranſplanted into pots filled with freſh light earth, and plunged into a hot-bed of tanner's bark, obſerving to water and ſhade them until they have taken root; then you ſhould let them have a large ſhare of freſh air in warm weather, and they will require to be frequently refreſhed with water.

The firſt, having a perennial root, if it is planted in a pot, and ſheltered in the winter from froſt, may be preſerved ſeveral years, and will annually flower; but the ſecond ſort ſeldom continues longer than two years.

[Elephant's-Foot. See *Elephantopus.*]

Elephas. See *Rhinanthus.*

[Elettari. See *Amomum.*

Eleusine. See *Cynoſurus.*

Elichryso Affinis. See *Achyranthes, Baccharis, Iva, Tarchonanthus.*

——— ſimilis. See *Conyza.*]

Elichrysum. See [*Athanaſia, Chryſocoma, Conyza,*] *Guaphalium,* [*Stoebe, Tanacetum, Tarchonanthus, Xeranthemum.*

Eliocarmos. See *Ornithogalum.*

Elleborine. See *Aſtrantia, Cypripedium, Serapias.*

Elleborum and Elleborus. See *Helleborus.*]

ELLISIA. (*So named in memory of John Ellis, F.R.S. author of a treatiſe on Corallines, &c.*)

Lin. gen. n. 244. *Reich.* 218. *Schreb. n.* 268. *Juſſ.* 129.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Luridæ.*—*Borragineæ.* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, five-parted: *diviſions* ſharp, gaping.

Cor. one-petalled, funnel-form, ſmaller than the calyx: *border* five-cleft.

Stam. *Filaments* five, ſhorter than the tube. *Anthers* roundiſh.

Pist. *Germ* roundiſh. *Style* filiform, ſhort. *Stigma* two-cleft, oblong.

Per. *Capſule* bag-form, leathery, two-valved, two-celled, the calyx then very large, flat, ſtar-form.

Seeds in each cell two, globoſe, black, hollow-dotted: but one *ſeed* over the other, ſcarcely ſeparated by a tranſverſe partition.

ESSENTIAL CHARACTER.

Cor. funnel-form, narrow. *Berry* dry, two-celled, two-valved. *Seeds* two, dotted, one placed over the other.

SPECIES.

1. Elliſia Nyctelea. *Cut-leaved Elliſia.*
Lin. ſyſt. 195. *Reich.* 1. 418. *mant.* 336.
Polemonium Nyctelea. *Lin. ſpec.* 231. *Nov. act. upſ.* 1. 97. *t.* 5. *f.* 5.
Planta lithoſpermo affinis. *Act. eph. nat. cur.* 1761. *p.* 330. *t.* 7. *f.* 1.
Scorpiurus humilis virginianus, fol. rutaceis. *Mor. hiſt.* 3. 451. *ſ.* 11. *t.* 28. *f.* 3.

DESCRIPTION, &c.

[Allied to *Hydrophyllum.* *Root* annual. *Stem* herbaceous, brittle, dichotomous, very much branched, diffuſed, proſtrate, round. *Leaves* reſembling thoſe of *Hydrophyllum,* alternate, petioled, pinnatifid, during foliation imbricate backward, the diviſions ſharp, with a tooth on each ſide. *Peduncles* oppoſite to the leaves, one-flowered, ſpreading, elongated, pubeſcent. *Flowers* drooping: corolla white, with minute purple dots on the inſide of the diviſions. The poſition of the ſeeds is ſingular[a].

Native of Virginia. Cultivated in 1755, by Mr. Peter Collinſon. It flowers in july and auguſt[b].

Ellisia. See *Duranta.*]

Elm. See *Ulmus.*

[Elvela. See *Agaricus, Helvella, Tremella.*

Eluteria. See *Cluytia.*

Elychrysum. See *Stæhelina.*

ELYMUS. (Ελυμος *of Dioſcorides, from* ελυω, *involvo; the ſpike in ſome ſpecies being involved in the involucre.*)

Lin. gen. n. 96. *Reich.* 102. *Schreb. n.* 128. *Juſſ.* 31.

Claſſ. 3. 2. Triandria Digynia.

Nat. order of *Gramina, Gramineæ,* or *Graſſes.*

GENERIC CHARACTER.

Cal. *Receptacle* common lengthened into a ſpike. *Glume* four-leaved, two-ranked; two ſubulate *leaflets* being placed under each ſpikelet.

Cor. two-valved: *Valve exterior* larger, acuminate, awned; *interior* flat.

Nect. two-leaved: *leaflets* oblong, ſharp, ciliate.

Stam. *Filaments* three, hair-form, very ſhort. *Anthers* oblong, two-cleft at the baſe.

Pist. *Germ* top-ſhaped. *Styles* two, divaricated, hairy, inflected. *Stigmas* ſimple.

Per. none. *Corolla* involving the ſeed.

Seed ſingle, linear, convex on one ſide, covered.

ESSENTIAL CHARACTER.

Cal. lateral, two-valved, aggregate, many-flowered.

SPECIES.

1. Elymus arenarius. *Sea Lyme-graſs.*
Lin. ſpec. 122. *Reich.* 1. 231. *it. ſcan.* 336. *fl. ſuec. n.* 111. *Hudſ. angl.* 56. *With.* 124. *Lightf. ſcot.* 108. *Fl. ruſt. t.* 31. *Schreb.* 2. 85. *t.* 40. *Gmel. ſib.* 1. 119. *t.* 25. (Triticum.)
Gramen caninum maritimum ſpica triticea. *Raii hiſt.* 1256. *n.* 5: *ſyn.* 390. 3.
Spike upright, cloſe, calyxes tomentoſe, longer than the floret.

2. Elymus ſibiricus. *Siberian Lyme-graſs.*
Lin. ſpec. 123. *Reich.* 1. 232. *hort. upſ.* 22. *amœn.* 3. 20. *Schreb. gram.* 2. 1. *t.* 21. *f.* 1. *Gmel. ſib.* 1. 123. *t.* 28.
Spike pendulous, cloſe; ſpikelets in pairs, longer than the calyx.

3. Elymus philadelphicus. *Philadelphia Lyme-graſs.*
Lin. ſpec. 122. *Reich.* 232. *amœn.* 4. 266.
Spike pendulous, patulous, ſpikelets ſix-flowered, the lower ones ternate.

4. Elymus canadenſis. *Canadian Lyme-graſs.*
Lin. ſpec. 123. *Reich.* 232. *amœn.* 3. *p.* 20.
Gramen ſecalinum majus altiſſimum virginianum. *Mor. hiſt.* 3. 180. *ſ.* 8. *t.* 2. *f.* 10. *Raii ſuppl.* 599.
Spike nodding, patulous, lower ſpikelets ternate, upper binate.

5. Elymus caninus. *Bearded* or *dog's Lyme-graſs,* or *Wheat-graſs.*
Lin. ſpec. 124. *Reich.* 233. *fl. ſuec. n.* 112. *Lightf. ſcot.* 108. *Pollich. pal. n.* 131. *Leers herborn. n.* 96. *t.* 12. *f.* 4. *Krock. ſileſ. n.* 191.
Triticum caninum. *Lin. ſpec. ed.* 1. 86. *Hudſ. angl.* 58. *With.* 129. *Relh. cant. n.* 108. *Hall. helv. n.* 1426. β. *Schreb. ſpicil.* 51.
Gramen caninum non repens elatius, ſpica ariſtata. *Mor. hiſt.* 177. *t.* 1. *f.* 2. *Buxb. cent.* 4. *t.* 50. —ariſtatum, rad. non repente, ſylvaticum. *Raii ſyn.* 390.
Spike nodding cloſe, ſpikelets ſtraight, without any involucre, the loweſt double.

6. Elymus tener.
Lin. ſyſt. 125. *ſuppl.* 114.
Spike pendulous, florets double.

7. Elymus virginicus. *Virginian Lyme-graſs.*
Lin. ſpec. 123. *Reich.* 233. *hort. upſ.* 22. *Gron. virg.* 13. (Hordeum).
Spike erect, ſpikelets three-flowered, involucre ſtreaked.

8. Elymus europæus. *Wood Lyme-graſs* or *Barley-graſs.*
Lin. ſyſt. 125. *Reich.* 233. *mant.* 35. *With.* 124. *Krock. ſileſ. n.* 192.
Hordeum ſylvaticum. *Hudſ. angl.* 57. *Fl. ruſt. t.* 45. *Hall. helv. n.* 1537.
H. cylindricum. *Murr. prodr.* 43.

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[a] Linn. mant.

[b] Hort. kew.

Gramen ſecalinum majus ſylvaticum. *Raii ſyn.* 392. *Mor. hiſt.* 3. 180.—maximum. *Park. theat.* 1144.

G. hordeaceum montanum ſ. majus. *Bauh. pin.* 9. ſpica ſtrigoſiore, brevius ariſtata. *Scheuch. agr.* 16. *prodr. t.* 1. *f.* 1.

Spike upright, ſpikelets two-flowered, equal to the involucre.

9. Elymus Caput meduſæ. *Portugal Lyme-graſs.* *Lin. ſpec.* 123. *Reich.* 234. *Forſk. ægypt.* 25. *Schreb. gram.* 2. 17. *t.* 24. *f.* 2. *amœn.* 3. 21.

Avena luſitanica ſpicata, caput meduſæ referens. *Mor. hiſt.* 3. 210. *Raii ſuppl.* 611.

Spikelets two-flowered, involucres briſtle-form, ſpreading very much.

10. Elymus Hyſtrix. *Rough Lyme-graſs.* *Lin. ſpec.* 124. *Reich.* 234.

Spike upright, ſpikelets without involucre, ſpreading.

11. Elymus giganteus. *Vahl ſymb.* 3. 10.

Spike erect, cloſe, ſpikelets in ſixes, ſix-flowered, villoſe, calyxes awl-ſhaped; ſmooth, longer than the ſpikelets.

DESCRIPTIONS, &c.

Glumes two or three in each tooth of the axis, two-valved (in *E. Hyſtrix* none), one or two-flowered, or more, often many-flowered, with two-valved calyxes. The glumes connected have the appearance of an involucre, or of a four or ſix-leaved glume, in two or three rows, with the calyxes diſpoſed in diſtinct ſpikelets [a].

1. *Leaves* reedy, glaucous or whitiſh, involute and mucronate, channelled and rigid. Stems two or three feet high and more, ſtrengthened by three or four joints. *Spike* tomentoſe, linear, eight or nine inches long, as large as a full-ſized ear of wheat, but leſs compact. Spikelets two, ſtraight, two-flowered, awnleſs. Like *Arundo arenaria,* it prevents the ſea ſand from blowing about by means of its matted roots [b]. Dr. Withering conjectures that it may poſſibly admit of being made into ropes, as *Stipa tenaciſſima* is in Spain. It is perennial, frequent on the ſea-coaſt in many parts of Europe, and flowers from june to auguſt.

2. Stems tall, round and ſmooth: leaves moderately broad, and commonly diſtinguiſhed by a kind of glaucous powdery complexion on the under ſides. Spike pendulous, cloſe or contracted, with the ſpikelets by twos, and longer than the calyx: the awns are moderately long, and ſlightly flexuoſe [c].

Perennial. Native of Siberia. Flowering in june and july. Cultivated in 1758, by Mr. Miller [d].

3. This in its habit and whole ſtructure is extremely ſimilar to the E. canadenſis, but the ſpikes in this are nodding or deſcending: the ſpikelets in this are alſo ſix-flowered; in the other four-flowered: in this alſo the awns are leſs ſtraight, and a little flexuoſe, even while flowering; whereas in the other they are ſtraight: the calyx is as ſhort again as the ſpikelet [e].

Native of Philadelphia. Perennial.

4. This agrees in moſt circumſtances with the ſecond ſpecies, it differs however in theſe. 1. The ſpikelets are villoſe, not naked. 2. The involucres end in an awn longer than the ſpikelet itſelf, whereas in the other the awn is much ſhorter than the ſpikelet. 3. The lower ſpikelets are three together, but in *E. ſibiricus* they are no more than two. 4. The ſpikelets, when in flower, ſtand wide from the ſcape, whereas in the other they approximate to it. At the baſe of each floret, on the inſide of the ſpikelets, is a dot or ſpot of a rufous-brown colour. The leaves of this are blueiſh, eſpecially underneath, which is not the caſe in *E. ſibiricus.* The awns alſo of the corólla, when the ſeed is ripening, from ſpreading become reflex, which in the other ſpecies they do not. Native of Canada [f], and Virginia. Introduced before 1699, by the Rev. John Baniſter. It flowers in july and auguſt, and is perennial [g].

5. Leaves bare of hairs underneath. Sheaths ſmooth. Spikelets five or ſix lines long: calyx three lines long: lowermoſt corolla four or five lines long; the outer valve ſending out from a bluntiſh point, an awn, from ſeven to nine lines long; inner valve lanceolate, juſt ſenſibly longer than the outer, which is bare of hairs, with the edges at the point membranaceous. Theſe latter circumſtances diſtinguiſh this graſs from *Feſtuca ſylvatica,* which it very much reſembles in its general appearance [h].

It differs from *Triticum repens,* in the root not being creeping; the ſpikelets longer, narrower and rounder, furniſhed with long awns; whereas in *Tr. repens* they are very ſhort, if any [i].

Linneus removed this from the genus *Triticum,* wherein he had firſt placed it, on account of the lower ſpikelets being in pairs. Schreber never could diſcern this. Krocker however affirms that it really is ſo in the Sileſian plants.

Perennial; growing in woods and hedges; as between Greenwich and Woolwich; about Croydon; Ripton wood, Huntingdonſhire, Stokenchurch woods, Oxfordſhire, &c. in the north frequent. It flowers in june and july.

6. *Culm* two feet high, ſmooth and even, with red joints. *Leaves* ſmoothiſh, or but little ſcabrous, with very ſmooth ſheaths. *Spike* like *E. ſibiricus,* but much more ſlender. *Involucres* alternate, four-leaved, ſhorter than the floſcules, ſubulate, three-flowered. *Floſcules* ſeſſile, in pairs, with a pedicelled one between them. *Awns* terminating, as long as the floſcules or longer, often flexuoſe. Native of Siberia [k].

7. In this ſpecies the ſpike exceeds that of an ear of common barley, and there are two ſeſſile involucres affixed to each denticulated axis or baſe: each of theſe involucres conſiſts of two rays, which are longer than the flowers, and thicker, and are terminated by a long awn [l].

Perennial. Native of Virginia. Introduced in 1781, by Mr. William Curtis [m].

8. Culm upright, ſtout, two feet high and more, having four or five joints. The leaf at each of theſe is about a ſpan in length, and a quarter of an inch or more in breadth; ſmooth to appearance, but roughiſh to the touch, eſpecially round the edges. Sheaths hairy. Spike narrow, two inches or more, and ſometimes near three inches in length, much narrower, more naked, leſs rough, and harder than in Wall Barley-graſs (Hordeum murinum); the ſpikelets are ſtiffer and longer, the pedicels thicker, and the awns ſhorter, except that of the inner valve of the corolla, which is longer: the middle floret is rather larger than the two others, with an awn ſomewhat ſhorter. They are all ſmooth to the naked eye, but appear hairy with a magnifier [n].

It very much reſembles *E. virginicus,* but the leaves of the involucre are not ſcored, as they are in that. The florets, together with their awns, are longer than the involucre; they are two in number, whereas in that they are three [o]. The two leaves of the involucre proceed from an exceedingly ſhort pedicel, diſtinct from that of the floret; they are equal, and ſomewhat ſcored towards the end. Florets generally ſingle, but often two, and both fertile; the lower on an exceedingly ſhort pedicel; the upper on a pedicel nearly half its length, with the rudiment of a third pedicel at the baſe of the inner valve.—In ſtructure it is an *Elymus,* in habit it approaches rather more to the *Hordeum*: in truth it ſeems the connecting link between both [p].

Native of Germany, Switzerland, England, in woods, with us in a calcareous ſoil, as near Berkhamſtead in Herts; Marlow and Hambleton, in Bucks; Henley and Stokenchurch in Oxfordſhire;

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[a] Juſſieu.
[b] Linn. ſpec. & ſuec. Lightf. Ray.
[c] Gmelin.
[d] Hort. kew.
[e] Linn. amoen.
[f] Linn. ſpec.

[g] Hort. kew.
[h] Stokes in Withering.
[i] Pollich.
[k] Linn. ſuppl.
[l] Gron. virg.
[m] Hort. kew.
[n] Haller & Fl. ruſt.
[o] Linn. mant.
[p] Stokes in Withering.

Ripton woods, Huntingdonſhire; rocks oppoſite Matlock baths; in the North frequent.—Perennial; flowering in june. It is a coarſe graſs, like moſt of thoſe which grow in woods; and like them is ſometimes drawn up to a great height.

9. Culm narrow, a foot high. Spike oblong. Partial involucres four-leaved, ſpreading very much, or reflex, the length of the florets with their awns. Spikelets in pairs, two-flowered; both florets awned, but the inner one ſmaller in all its parts. Native of Spain and Portugal, on the coaſts[q].—Annual. Flowering in july. Introduced in 1784, by M. Thouin[r].

10. Spike compounded of two ſpikelets at each tooth of the rachis. Spikelets four-flowered, with long awns. Two calluſes inſtead of an involucre[s].—Annual. Native of the Levant. It flowers here in july and auguſt. Introduced in 1770, by M. Richard[t].

11. Culm the thickneſs of the middle finger. Leaves involute, ſtrict. Spike a foot and half long, almoſt two inches thick at bottom, attenuated at top, imbricate, with numerous ſpikelets, an inch long. Valves of the calyx keeled, hollow, a little longer than the ſpikelets. Florets diſtich, ſeven, the end one barren: outer valve lanceolate, ſtriated at top, villoſe to the middle; inner linear, blunt, flattiſh within, hollow without. Rachis villoſe. Its country is unknown[u].

PROPAGATION AND CULTURE.

See Grass.

Elymus. See *Hordeum* and *Zizania*.

Emblica. See *Phyllanthus*.

EMBOTHRIUM. (*So named by Forſter, from* εν *and* βοθριον *a little pit or hollow; the anthers being placed in a hollow of the petal.*)

Lin. gen. Schreb. n. 145. *ſuppl.* 16. *Forſt. gen.* 8. *Juſſ.* 79.

Claſſ. 4. 1. Tetrandria Monogynia.

Nat. order of *Proteæ*. Juſſ.

GENERIC CHARACTER.

Cal. none.

Cor. *Petals* four, linear, oblique; with the tip broader, roundiſh, concave, ſtaminiferous; after fecundation revolute.

Stam. *Filaments* four, very ſhort, on each petal one or none. *Anthers* oblong, within the cavity of the petal, largiſh.

Pist. *Germ* linear, aſcending, inflex. *Style* none. *Stigma* roundiſh, plane in front, behind concave, large.

Per. *Follicle* round, one-celled.

Seeds four or five ovate, compreſſed, with a winged membrane on one edge.

ESSENTIAL CHARACTER.

Cor. four-petalled. *Anthers* ſeſſile, ſitting on the tips of the petals. *Follicle* round.

SPECIES.

1. Embothrium umbellatum.
Lin. ſyſt. 166. *ſuppl.* 128. *Forſt. gen. n.* 8. *Fl. auſtr. n.* 60.
Umbels axillary, very ſimple, peduncled, leaves oblong, veinleſs, anthers ſeſſile.

2. Embothrium coccineum.
Lin. ſyſt. 166. *ſuppl.* 128. *Forſt. gen. n.* 8. *Cavan. hiſp. t.* 65. *Lamarck encycl.* 2. 355.
Thyrſes terminating, ſeſſile, anthers pedicelled, leaves obovate, veined, (*oblong-ovate, ending in a cuſp.*)

3. Embothrium ſpecioſiſſimum.
Smith New Holl. 19. *t.* 7.

4. Embothrium ſilaifolium.
Smith New Holl. 23. *t.* 8.

DESCRIPTIONS, &c.

1. A handſome ſhrub. The flowers ſmall and red, in ſolitary umbels.—Native of New Caledonia[a].

2. The whole plant is ſmooth. Stem ſhrubby. Leaves ſcattered, having one nerve branching on both ſides, on ſhort petioles, dilated at the baſe, and reddiſh. Buds red, with lanceolate, reflex ſcales. Flowers in ſpikes, terminating. Corolla ſcarlet, tubular-incurved, with an anther lying in the broad end of each of the four petals. Germ ſuperior, oblong, terminated by a long linear ſtyle: ſtigma flat. Seeds in the follicle imbricate, with a ſharp wing. Found in Terra del Fuego by Forſter, and in the ſtraits of Magellan by Commerſon, who named it *Ixora*. Its common name is *Catas*. Several other ſpecies have been obſerved in Peru and Chili[b].

3. This is a magnificent ſhrub; a native of New Holland: it grows to the height of eight or ten feet, with ſeveral ſimple, wand-like, round branches, clothed with numerous large, alternate, bright-green leaves, from four to ſix inches long; obovate and blunt, but tipped with a ſmall point: they are more or leſs ſerrated on the ſides. The flowers grow in a very denſe ſimple head on the top of each branch, and the head is ſurrounded at the baſe with numerous lanceolate leaves, or rather bractes, conſtituting the involucre: theſe as well as the flowers themſelves are of a rich ſanguine red.

4. Native of New Holland. The ſtems, which are ſeveral, grow three or four feet high or more, and are upright, and alternately branched, and have alternate leaves, which in ſhape much reſemble thoſe of the Peucedanum Silaus; the upper and lower leaves are, however, more ſimple: the flowers ſtand in a long looſe terminal ſpike, and are white, with the tips of the petals revolute.

Emerus. See *Æſchynomene, & Coronilla.*]

EMPETRUM. (*Of Pliny,* Εμπετρον *of Dioſcorides. From* ἐν *and* πετρος, *a rock; ſo named from the place of its growth.*)

Lin. gen. n. 1100. *Reich.* 1202. *Schreb.* 1496. *Tourn.* 421. *Gærtn. t.* 106. *Juſſ.* 162.

Claſſ. 22. 2. Dioecia Triandria.

Nat. order of *Ericæ*. Juſſieu.

GENERIC CHARACTER.

* *Male.*

Cal. *Perianth* three-parted: *diviſions* ovate, permanent.

Cor. *Petals* three, ovate-oblong, narrower at the baſe, larger than the calyx, withering.

Stam. *Filaments* three, capillary, very long, hanging forwards. *Anthers* upright, ſhort, two-parted.

* *Female.*

Cal. *Perianth* as in the male.

Pist. *Germ* ſuperior, depreſſed. *Style* ſcarce any. *Stigmas* nine, reflex-expanding. (Styles three to nine. *G.*)

Per. *Berry* orbiculate, depreſſed, one-celled, larger than the calyx.

Seeds nine, jointedly placed in a circle, on one ſide bulging, on the other cornered. (Seeds three to nine. *G.*)

ESSENTIAL CHARACTER.

Male. *Cal.* three-parted. *Cor.* three-petalled. *Stam.* long.

Fem. *Cal.* three-parted. *Cor.* three-petalled. *Styles* nine. (three to nine.) *Berry* nine-ſeeded. (three to nine.)

SPECIES.

[1. Empetrum album. *White-berried Heath.*
Lin. ſpec. 1450. *ſyſt.* 880. *Reich.* 4. 235. *hort. cliff.* 470. *Gærtn. fruct.* 2. 107.
E. luſitanicum fructu albo. *Tourn. inſt.* 579.
Erica erecta, baccis candidis. *Bauh. pin.* 486. *Raii hiſt.* 1630.
E. coris folio, decima. *Cluſ. hiſt.* 1. 45.—baccifera luſitanica. *Bauh. hiſt.* 1. 528. 1.—fr. albo. *Park. theat.* 1485. 1.—tenuifolia. *Ger. emac.* 1383. 10. *Erect.*]

2. Empetrum nigrum. *Black-berried Heath, Crow* or *Crake-berry.*
Lin. ſpec. 1450. *Reich.* 4. 235. *hort. cliff.* 470. *fl. lapp. n.* 379. *ſuec. n.* 904. *Hudſ. angl.* 431. *With.* 1110. *Lightf. ſcot.* 612. *Hall. helv. n.* 1605. *Jacqu. vind.* 298. *Gmel. ſib.* 3. 16.

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[q] Linn. ſpec.

[r] Hort. kew.

[s] Linn. ſpec.

[t] Hort. kew.

[u] Vahl.

[a] Linn. ſuppl.

[b] Cavanilles.

n. 7. *Gunn. norv. n.* 12. *Mill. illuſtr. ic. Gærtn. fruct.* 2. 108. *Duham. arb.* 1. 217. *t.* 91. *Pallas roſs.* 1. 2. *p.* 49.
E. montanum, fructu nigro. *Tournef. inſt.* 579. *Raii ſyn.* 444.
Erica baccifera. *Cluſ. pann.* 29. *Camer. epit.* 77. —procumbens. *Ger. emac.* 1383. 9.—nigra. *Bauh. pin.* 486. *Park. theat.* 1485. 2. *Raii hiſt.* 1631.
Procumbent.

DESCRIPTIONS, &c.

[1. This differs from the following ſpecies in having the ſmaller branches pubeſcent; the leaves longer, ſomewhat ſcabrous on their upper ſurface, and channelled underneath[c]. Berry guarded at the baſe by the calyx, fleſhy, white, ſhining. Seeds two or three, ſeldom more, bony, on one ſide convex and obſcurely furrowed, on the other angular or flattiſh[d].—Native of Portugal.

2. A ſmall decumbent ſhrub. The outer bark deciduous, and of a brown colour, the inner yellow. Branches rough with the remains of the petioles. The terminating bud conſiſts of five membranaceous leaflets, hairy at the edge; this puts forth five little branches, of which four are in a whorl. The leaves are in fours; they are ſomewhat three-cornered, with a white linear keel, and petioled. Flowers axillary, ſeſſile, ſolitary, ſurrounded by a bracte reſembling an outer three-parted calyx. Calyx whitiſh. Petals purple. Filaments very long, and purple, with browniſh black anthers. The female is like the male, but the ſtem is redder; the leaves deep green, in fives; piſtil black. Berries browniſh black[e], when ripe.—The colour and ſize of Juniper berries, marked at top with a ſmall round hole, protected at bottom with a whitiſh three-leaved calyx, and a red corolla of three petals: the fleſh is rather firm, and pale green, except that towards the circumference it is purpliſh: receptacle central, columnar, ſlender. From ſix to nine bony, pale-coloured ſeeds are placed round this in a ring, and fixed to it a little above the baſe[f].

Linneus informs us that he once, and once only, met with a plant which had hermaphrodite flowers. Profeſſor Jacquin has obſerved ſeveral with three, two, and even one ſtamen only; a few females, but no males; the ſtamens are very upright, ſtiff and ſtraight[g].

Native of the northern parts of Europe, generally in elevated ſituations, both on dry, barren, and mooriſh or boggy ſoils. In moors from the Baltic to the Eaſtern ocean, in Kamtſchatka, and the iſles towards America. In the mountains of Lapland, and at the mines of Fahlun it abides, when other plants have periſhed with the cold[h]. In Warwickſhire, Staffordſhire, Derbyſhire, and the northern counties of England, it is frequent; alſo in Scotland.

The Highlanders and children in Scotland eat the berries, but they are no very deſirable fruit; and taken in large quantities are ſaid to bring on a ſlight head-ache. The Ruſſian peaſants, however, eat them, and the Kamtſchadales gather great quantities of them to boil with their fiſh, or to make a ſort of pudding with the bulbs of their lilies. They are eſteemed antiſcorbutic and diuretic[i]. Grouſe and heath-cocks feed upon them, and they give the excrement a tinge of purple. Boiled in alum-water they afford a dark purple dye: and boiled with fat they are ſaid to be uſed in dyeing otter and ſable ſkins black[k]. Cattle do not ſeem to browſe on this ſhrub.—Linneus ſays that it flowers in april with the Elm; with us it flowers in april and may[l].]

PROPAGATION AND CULTURE.

Theſe little ſhrubs are ſeldom propagated in gardens unleſs for variety ſake; but they may be cultivated in ſhady places, and will thrive very well in gardens, where the ſoil is ſtiff. The plants ſhould be procured from the places where they grow naturally, for the ſeeds remain a year in the ground before they vegetate, and afterwards are very ſlow in their growth. If they are planted on a moiſt boggy ſoil in autumn, they will get roots in the winter, and will require no farther care than to clear them from weeds; for theſe low ſhrubs commonly grow upon the tops of wild mountains, where the ſoil is peaty, and full of bogs.

[EMPETRUM. See *Begonia.*

EMPLEURUM. (Εμπλευρος, *latera plena habens.*) *Lin. gen. Schreb. n.* 1765. *Hort. kew.* 3. 513. *Juſſ.* 298.
Claſſ. 21. 4. Monoecia Tetrandria.
Nat. order of *Aggregatæ. Rutaceæ.* Juſſ.

GENERIC CHARACTER.

* *Male flowers.*

CAL. *Perianth* one-leafed, bell-ſhaped, four-toothed, permanent.
COR. none.
STAM. *Filaments* four, awl-ſhaped, longer than the calyx, patulous. *Anthers* oblong, ſubquadrangular, retuſe.

* *Female flowers,* on the ſame plant.

CAL. as in the male.
COR. none.
PIST. *Germ* ſuperior, oblong, compreſſed, terminated by a leafy, erect proceſs. *Style* none. *Stigma* placed on the lateral toothlet of the germ, cylindric, deciduous.
PER. *Capſule* oblong, compreſſed, crowned by a leafy proceſs, one-celled, opening along the ſtraighter margin.
SEED ſolitary, oblong, covered with a ſubcoriaceous bivalve aril.
OBS. *It very ſeldom happens that there are two capſules from one calyx.*

ESSENTIAL CHARACTER.

MALE. *Cal.* four-cleft. *Cor.* none.
FEM. *Cal.* four-cleft, inferior. *Cor.* none. *Stigma* cylindric, placed on the lateral toothlet of the germ. *Capſ.* opening on the ſide. *Seed* one, arilled.

SPECIES.

1. Empleurum ſerrulatum. *Cape Empleurum.* *Ait. hort. kew.* 3. 340.
Dioſma unicapſularis. *Lin. ſuppl.* 155.

DESCRIPTION, &c.

This is a ſhrub, with wand-like, even branches. Leaves like thoſe of a Willow, alternate, ſubpetioled, linear-lanceolate, even above, beneath longitudinally wrinkled, ſmooth, quite entire on the edge, but appearing to be ſerrate by pellucid dots. Peduncles few-flowered, lateral, much ſhorter than the leaves. Flowers ſmall, moſt of them male. Capſules uſually ſolitary, incurved, with a beak of the ſame length. In the habit and aril of the ſeed it reſembles Dioſma, but it has no corolla, and only a ſingle capſule. Firſt obſerved by Sparrmann, at the Cape of Good Hope[m]. Introduced here by Mr. Francis Maſſon in 1774[n].

ENARGEA. (Εναργεια, *evidentia, illuſtratio.*) *Banks. Lin. gen. Schreb. n.* 598. *Gærtn. t.* 59.
Claſſ. 6. 1. Hexandria Monogynia.

GENERIC CHARACTER.

CAL. none.
COR. *Petals* ſix, oblong-ovate, concave, acute; three outer, and three inner; all marked below the middle with two green ſpots.
STAM. *Filaments* ſix, half the length of the corolla.
PIST. *Germ* roundiſh. *Style* three-cornered, thick.
PER. *Berry* ſubglobular, three-celled.
SEEDS four or five, globular.

ESSENTIAL CHARACTER.

Cal. none. *Pet.* ſix, oblong-ovate, concave, acute, three outer, three inner, green-ſpotted. *Berry* three-celled, with four or five globular ſeeds.

SPECIES.

1. Enargea marginata. *Gærtn. fruct.* 1. 283.

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[c] Linn. ſyſt.
[d] Gærtner.
[e] Linn. ſuec.
[f] Gærtner.
[g] Vind.
[h] Linn. lapp.
[i] Pallas roſs.
[k] Ibid.
[l] With. & Lightf.
[m] Linn. ſuppl. & Juſſieu.
[n] Hort. kew.

DESCRIPTION, &c.

The fruit is an elliptic-ſpheroidal Berry, fleſhy, the ſame conſiſtence with thoſe of *Vitis idæa*, red purple on one ſide, whitiſh on the other: in each of the three cells there are four or five globular, rufeſcent ſeeds.

Native of Terra del Fuego[o].

ENCALYPTA. A ſpecies of Leerſia, in *Hedw. fund.* 2. p. 88. A ſpecies of Bryum in Linneus. *Schreb. gen. n.* 1643.

ENCHANTER'S NIGHTSHADE. See *Circæa.*

ENDIVE. See *Cichorium.*

ENGLISH MERCURY. See *Chenopodium.*

ENTADA. See *Mimoſa.*

ENTOGANUM. See *Melicope.*]

ENULA. See *Inula.*

[EPĂCRIS. (*From* επι *and* ακρις, *the ſummit of a mountain; theſe plants growing in that ſituation. Forſter.*)

Lin. gen. Schreb. n. 279. *ſuppl.* 19. *Forſt. gen.* 10. *Juſſ.* 161. *Gærtn. t.* 94.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Ericæ.* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-parted, equal, permanent: *diviſions* lanceolate.

COR. one-petalled, funnel-form: *tube* gradually widening into a five-cleft border; *diviſions* ovate, acute, villoſe above.

Nectary five obovate, emarginate ſcales, faſtened to the germ, and preſſed cloſe.

STAM. *Filaments* five, very ſhort, in the throat of the corolla. *Anthers* incumbent.

PIST. *Germ* roundiſh, five-ſtreaked. *Style* cylindric, ſhort. *Stigma* capitate.

PER. *Capſule* globular-flatted, five-celled, five-valved, gaping.

SEEDS numerous, very ſmall.

ESSENTIAL CHARACTER.

Cor. funnel-form, villoſe. *Nect.* ſcales faſtened to the germ. *Capſ.* five-celled, five-valved.

SPECIES.

1. Epacris longifolia.
Lin. ſyſt. 198. *ſuppl.* 138. *Forſt. gen.* 10. *n.* 1. *fl. auſtr. n.* 68.
E. frondoſa. *Gærtn. fruct.* 2. 77.
Ardiſia frondoſa. *Soland. Mſs.*
Arboreous; leaves ſubulate, ſheathing, racemes upright, flowers oppoſite.

2. Epacris juniperina.
Lin. ſyſt. 198. *ſuppl.* 138. *Forſt. gen.* 10. *n.* 2. *fl. auſtr. n.* 71, 72.
Ardiſia aceroſa. *Gærtn. fruct.* 78.
Stiphelia aceroſa. *Soland. Mſs.*
Arboreous; leaves ſcattered, linear, acute, ſpreading, ſeſſile; racemes drooping; flowers alternate.

3. Epacris pumila.
Lin. ſyſt. 198. *ſuppl.* 138. *Forſt. gen.* 20. *t.* 10. *n.* 3. *fl. auſtr. n.* 70.
Herbaceous; leaves ovate-oblong, imbricate; flowers ſeſſile, ſubſolitary.

4. Epacris roſmarinifolia.
Forſt. fl. auſtr. n. 69.
Shrubby; leaves linear, obtuſe, rigid, ſheathing; flowers ſolitary, lateral.

DESCRIPTIONS, &c.

Theſe are all natives of New Zealand. The fruit of the firſt and ſecond ſpecies is particularly deſcribed by Gærtner. The ſecond is conſidered as comprehending two ſpecies by Forſter.

1. Capſule ſuperior, ſubturbinate, rounded-five-cornered. Partitions inſerted in the middle of the valves, and correſponding with the depreſſed grooves on the outſide of the capſule. Receptacle in each cell one, free, oblong, cylindric-compreſſed a little, with a curved peduncle from the axis of the fruit, and hanging down from its other end, covered all round with many minute ſeeds, which are linear-oblong, attenuated to both ends, and rufeſcent.

2. The fruit of this is a ſmall, ſuperior, juiceleſs ſpherical berry, terminated by a ſhort awl-ſhaped ſtyle: the rind is coriaceous, thin and black: the pulp fungous, rather ſolid, white and five-celled. Receptacle in each cell one, filiform, ſhort, inſerted at one end into the axis of the fruit, at the other ſupporting two pendulous ſeeds: theſe are in pairs, ſmall, ovate, attenuated upwards, plano-convex, rufeſcent. The leaflets of the calyx are ovate, concave and permanent. The corolla is ſalver-ſhaped and ſhrivelling; the tube looſe and longer than the calyx, the border ſhort and five-parted. Style filiform: ſtigma ſimple.

It differs from Epacris in having a ſimple ſtigma, a berry for a pericarp, and ſeeds in pairs. Hence Gærtner makes this an *Ardiſia*[p].

3, 4. Both natives of New Zealand[q].

EPERVA. See *Dimorpha.*]

EPHEDRA, (*of Pliny. From* επι, *by, and* υδωρ, *water; expreſſive of the place of growth. Linn. According to this derivation, it ſhould be* Ephydra. *The true derivation muſt be from* εφεδρα, *inſeſſio.*)

Lin. gen. n. 1136. *Reich.* 1242. *Schreb.* 1554. *Tourn.* 477.

Claſſ. 22. 12. Dioecia Monadelphia.

Nat. order of *Coniferæ.*

GENERIC CHARACTER.

* *Male.*

CAL. Ament compounded of one-flowered *ſcales*, few, roundiſh, concave, length of the perianth.

Perianth proper one-leafed, half-two-cleft, roundiſh, inflated, ſmall, compreſſed: *diviſions* obtuſe.

COR. none.

STAM. *Filaments* ſeven, coaleſcing into a ſubulate pillar, divided at the tip, longer than the calyx. *Anthers* roundiſh, turned outwards, of which *four* are inferior; the other *three* ſuperior.

* *Female.*

CAL. *Perianth* five-fold, one placed on another, with alternate diviſions, in an ovate figure: *each* one-leafed, ſomewhat ovate, two-parted: the *exterior* ones ſmaller.

COR. none.

PIST. *Germs* two, ovate, ſize of the laſt perianth, on which they are placed. *Styles* ſimple, filiform, ſhort. *Stigmas* ſimple.

PER. none. *Calycine ſcales* all thickened, ſucculent, conſtituting a divided berry.

SEEDS two, ovate-ſharp, on one ſide convex, on the other flat, compreſſed by the calyx covering them on every ſide.

ESSENTIAL CHARACTER.

MALE. Calyx of the ament two-cleft. *Cor.* none. *Stam.* ſeven. *Anth.* four inferior, three ſuperior.

FEM. *Cal.* two-parted, five-fold. *Cor.* none. *Piſt.* two. *Seeds* two, covered with a berried calyx.

SPECIES.

1. Ephedra diſtachya. *Great Shrubby Horſe-tail,* or *Sea-Grape.*
Lin. ſpec. 1472. *Reich.* 4. 280. *hort. cliff.* 465. *Gouan. monſp.* 510. *Hall. helv. n.* 1664. *D'Aſſo aragon. n.* 968. *Duham. arb.* 1. 220. *t.* 92.
Polygonum bacciferum maritimum minus. *Bauh. pin.* 15.
P. fruticans, botryoides, narbonenſe minus 2 Cluſ. *Barrel. ic.* 731. *n.* 2.—& *majus* 732. *n.* 3.
Uva marina monſpelienſium. *Lob. ic.* 796.—major & minor. *Ger. emac.* 1116. 1. & 1117. 2. *Park. theat.* 450, 3 & 451. 4. *Raii hiſt.* 1638. 2. & 1639. 3.
Tragum. *Cam. hort.* 171. *t.* 46.
Peduncles oppoſite, aments in pairs.

[2. Ephedra monoſtachya. *Small Shrubby Horſe-tail.*
Lin. ſpec. 1472. *ſyſt.* 895. *Reich.* 280. *Gmel. ſib.* 1. 171. *t.* 38. *f.* 1. & 3. *p.* 13. *Amm. ruth.* 178. & 354. *t.* 26.
E. polygonoides. *Pallas fl. roſs.* I. 2. *p.* 87. *t.* 83.
Peduncles ſeveral, aments ſolitary.

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[o] Gærtner.

[p] Gærtn. fruct.

[q] Forſter.

DESCRIP-

DESCRIPTIONS, &c.

This genus is allied to *Equiſetum*, as well in its habit and ſheathed joints, as in its ſtaminiferous column; it is perhaps ſtill more nearly allied to *Gnetum* or *Salicornia*. It conſiſts of leafleſs underſhrubs, with cylindric jointed ſtems and branches; at each joint there are ſmaller branches either oppoſite, or in whorls; the joints of theſe are ſheathed with a membrane two-cleft at top: peduncles from the ſheaths ſolitary or ſeveral, one or many-flowered. The aments probably are formed of the very ſhort joints; and the calyxes are to be regarded as little ſheaths crowded together[r].

Theſe plants vary extremely. Some, in the ſouth of Europe, are only a hand in height, whilſt others are three feet high. Linneus ſuſpected that the Siberian plant might not be ſpecifically different from this; and Profeſſor Pallas is decidedly of that opinion: he ſuſpects that Linneus had received only imperfect ſpecimens from Siberia, and was led by them to make a ſecond ſpecies.—Pallas thus deſcribes it:—It is a *ſhrub*, varying wonderfully according to its ſtation, ſometimes a foot or eighteen inches high, ſometimes only a finger's height, or even lower; proſtrate or aſcending. *Trunk* fibrous-woody, often thicker than a finger, with ſome branches ſpreading on the ground, and others, which are ſhort and woody, riſing, and ſubdivided copiouſly into ruſh-like branchlets. Theſe are jointed, not at all ſucculent, ſufficiently tenacious, glaucous-green, a little ſubdivided, ſometimes more than a ſpan in length, and ſtraight, ſometimes curled in a ſpiral, particularly in dry ſituations. The joints do not readily ſeparate; the internodes are often an inch and half in length, very finely ſtreaked, cylindric, terminated at top by two membranaceous, pubeſcent, emarginate ſcales. The plants are never hermaphrodite, but frequently barren, eſpecially in a dry ſoil. The *male* plant is uſually taller, with the aments of the upper joints commonly in pairs, oppoſite, on a peduncle iſſuing from one of the ſcales. The *male aments* are ovate, compoſed of three pairs of ſcales decuſſately imbricate, ſomewhat fleſhy, concave-rounded, greeniſh; in the boſom of each ſcale is a two-valved corolla, ſomewhat membranaceous, putting forth a ſtamen, ſtanding out beyond the ſcales, having ſeven or eight globular yellow anthers, in a kind of raceme. *Female aments* uſually ſolitary, larger, ovate-acute, compoſed of four pairs of ſcales, the upper ones gradually ſmaller. Theſe ſcales, in a flouriſhing plant, when ripe, become turgid, ſucculent, and of a beautiful ſcarlet colour, having two ovate-acute, plano-convex, browniſh gray ſeeds between the upper and moſt ſwelling ſcales. In dry ſoils, the ſcales continue almoſt the ſame, juiceleſs, yellowiſh-gray when ripe, with immature fruits, which have uſually one ſeed only, and that barren.—It is found in moſt of the ſouthern parts of the vaſt Ruſſian dominions; is common from the Volga to the Lena, and ſouthwards to Perſia and India. The berries ripen in july and auguſt; they are ſweetiſh, mucoſe, and leave a little heat in the throat: they are eaten by the Ruſſian peaſants, and by the wandering hords of all great Tartary; the Calmucs and other Tartars alſo uſe them medicinally, in catarrhs, rheumatiſms, &c.

The European plant was cultivated here before 1570, by Matthias de L'Obel, and flowers in june and july. The Siberian was introduced about 1772, by Meſſrs. Kennedy and Lee, and flowers from ſeptember to november[s].]

PROPAGATION AND CULTURE.

Theſe may be propagated by offsets, which the plants ſend forth in great plenty, for the roots creep under ground, and ſend forth ſuckers, which may be taken off to tranſplant in the ſpring. They love a pretty moiſt ſtrong ſoil, and will endure the cold of our ordinary winters very well in the open air. Some of theſe plants were formerly preſerved in pots, and were houſed in winter, but by later experience they are found to thrive better in the full ground.

Ephemerum. See [*Commelina*, *Eranthemum*, *Helonias*, *Lyſimachia*, &c] *Tradeſcantia*.

[EPHIELIS. (*From* Εφιελις, *calyculus*; *vel ſimile quid in corona. So called from the nectary forming a ſort of crown to the corolla.*)

Lin. gen. Schreb. n. 647.
Mataiba. *Aubl. t.* 128.
Claſſ. 8. 1. Octandria Monogynia.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, five-parted; ſpreading: *ſegments* roundiſh, acute.

Cor. *Petals* five, having claws, roundiſh, ſpreading, emarginate with a point, the length of the calyx.
Nectary of ten ſcales, a pair to each petal faſtened to the baſe, roundiſh, villoſe, ſmaller than the petals.

Stam. *Filaments* eight, briſtle-ſhaped, longer than the corolla, inſerted into a gland. *Anthers* four-cornered-roundiſh.

Piſt. *Germ* ovate, ſurrounded by a gland. *Style* none. *Stigma* blunt.

Per. *Capſule* oblong, compreſſed, grooved on both ſides, one-celled, two-valved.

Seeds two, kidney-form, faſtened to one of the valves in the middle one above the other.

ESSENTIAL CHARACTER.

Cal. five-parted. *Pet.* five, with claws. *Nect.* ten ſcales, two to each petal. *Capſ.* oblong, one-celled, two-valved, two-ſeeded.

SPECIES.

1. Ephielis guianenſis.
Lin. ſyſt. ed. Gmel. 2. *p.* 611.
Mataiba guianenſis. *Aubl. guian.* 1. 331. *t.* 128.

DESCRIPTION, &c.

1. This is a tree fifty or ſixty feet high, very much branched at top; the middle branches, or thoſe in the centre, being the higheſt, and ſtanding perpendicular: the lower ones are more inclining and horizontal; and ſpread out to a great diſtance: they divide into many branchlets, furniſhed with alternate leaves, each of which is pinnated: the pinnules oppoſite, from four to ſix in number, entire, oval, pointed, of a ſmooth ſurface, and of a bright green: theſe pinnules or leaflets are ſometimes eight inches in length. The flowers grow from the boſoms of the leaves on long pedicels, divided at their extremities into ſeveral ſmaller ones: theſe flowers are very ſmall, and white. This tree grows in the foreſts of Guiana, and there flowers in the month of october.

EPIBATERIUM. (*From* επι *and* βαινω, *inſcendo. This being a climbing plant.* Επιβατηριον, *is a machine for climbing walls.*)

Forſt. gen. 54. *Lin. gen. Schreb. n.* 1435.
Claſſ. 21. 6. Monoecia Hexandria.

GENERIC CHARACTER.

* *Male* flowers.

Cal. *Perianth* double, deciduous. *Outer* ſix-leaved, very ſmall, flat. *Inner* three-leaved, three times the ſize of the other; with ovate, ſpreading leaflets.

Cor. *Petals* ſix, leſs than the inner calyx, roundiſh: three outer, interpoſed between the calycine leaflets, three inner.

Stam. *Filaments* ſix, capillary, bowed inwards, the length of the petals. *Anthers* roundiſh.

* *Female* flowers on the ſame plant.

Cal. and Cor. as in the male.

Piſt. *Germs* three, ſubglobular. *Styles* three, bowed inwards, very ſmall. *Stigmas* compreſſed, ſpreading.

Per. *Drupes* three, ſubglobular, mucronate, with the permanent ſtyles.

Seed. *Nut* kidney-form, compreſſed, ſlightly grooved.

ESSENTIAL CHARACTER.

Cal. double: outer ſix-leaved, ſmall; inner three-leaved, large. *Pet.* ſix, three outer, between the calycine leaflets; three inner. *Drupes* three ſubglobular, mucronate, with the three permanent ſtyles; incloſing a kidney-form nut.

---

[r] Juſſieu.

[s] Hort. kew.

SPECIES.

1. Epibaterium pendulum.
Forſt. gen. 108.]

EPIDENDRUM. (ἐπι δενδρον, *from its growing upon trees.*)
Lin. gen. n. 1016. [*Reich. n.* 1101. *Schreb.* 1377. *H. P. B.* 127. *Juſſ.* 66. *Gærtn. t.* 14. *Smith rar.* 14, 15. *Vanilla Plum.* 28. *Juſſ.* 66. *Mill. dict.*
Claſſ. 20. 1. Gynandria Diandria.
Nat. order of *Orchideæ*.

GENERIC CHARACTER.

Cal. *Spathes* vague. *Spadix* ſimple.
Perianth none.

Cor. *Petals* five, oblong, extremely long, very ſpreading.
Nectary tubular at the baſe, top-ſhaped, placed downwards within the petals, with an oblique two-cleft mouth; *the ſuperior lip* very ſhort, three-cleft; the *inferior* lengthened into a point.

Stam. *Filaments* two, very ſhort, ſitting on the piſtil. *Anthers* covered by the upper lip of the nectary.

Pist. *Germ* ſlender, long, twiſted, inferior; *Style* very ſhort, faſtened to the upper lip of the nectary. *Stigma* obſcure.

Per. *Silique* extremely long, columnar, fleſhy.

Seeds numerous, extremely ſmall.

Obs. *Moſt of the ſpecies are paraſitic plants growing on trees.*

ESSENTIAL CHARACTER.

Nectary turbinate, oblique, reflex. *Cor.* ſpreading. *Spur* none.

SPECIES.

* *Climbing.*

1. Epidendrum Vanilla. *Vanilla* or *Vanelloe.*
Lin. ſpec. 1347. *Reich.* 4. 34. *mat. med.* 195. *Swartz obſ.* 324. *Brown. jam.* 326. *Blackw. t.* 590. *Plum. ic.* 188. *Pluk. alm. t.* 320. *f.* 4. *Merian. ſurin. t.* 25. (Vanilla.) *Cateſb. car.* 3. *t.* 7. (Volubilis.)]
Vanilla mexicana. *Mill. dict. n.* 1.
[Lobus oblongus aromaticus. *Cluſ. exot.* 72. *Sloan. jam.* 1. 180.—arom. ſubfuſcus terebinthi corniculis ſimilis. *Bauh. pin.* 404.
Volubilis ſiliquoſa mexicana, fol. plantagineis. *Raii hiſt.* 1330.
Leaves ovate-oblong, nerved, ſeſſile, cauline, tendrils ſpiral.

2. Epidendrum Flos aëris.
Lin. ſpec. 1348. *ſyſt.* 817. *Reich.* 4. 35. *act. upſ.* 1740. *p.* 37. *Kæmpf. amœn.* 868. *t.* 869. *f.* 1.
Stem columnar, ſomewhat branched, leaves lanceolate, petals linear, obtuſe.

** *Stem upright, leafy.*

3. Epidendrum tenuifolium.
Lin. ſpec. 1348. *Reich.* 4. 35. *Rheed. mal.* 12. *t.* 5.
Leaves on the ſtem ſubulate, channelled.

4. Epidendrum ſpatulatum.
Lin. ſpec. 1348. *Reich.* 4. 35. *Rheed. mal.* 12. *t.* 3. *Rudb. elyſ.* 2. 222. *f.* 7. *Rumph. amb.* 6. 941. *t.* 44. *f.* 1. (Angræcum).
Helleborine ampliſſimo fol. vario. *Plum. ſpec.* 9. *ic.* 180. *f.* 2.
Leaves on the ſtem oblong, alternate, obtuſe, veinleſs, lip of the nectary bifid and divaricate.

5. Epidendrum furvum.
Lin. ſpec. 1348. *Reich.* 4. 36. *Rudb. elyſ.* 2. 122. *f.* 8. *Raii ſuppl.* 590. (Thalia.) *Rumph. amb.* 6. 104. *t.* 46. *f.* 1. (Angræcum).
Cauleſcent; leaves imbricate, lanceolate; racemes axillary.

6. Epidendrum coccineum.
Lin. ſpec. 1348. *Reich.* 4. 36. *Jacqu. amer.* 29. *t.* 135. *pict.* 109. *t.* 205.
Helleborine coccinea multiflora. *Plum. ſpec.* 9. *ic.* 180. *f.* 1.
Leaves on the ſtem enſiform, obtuſe, peduncles one-flowered, axillary, crowded.

7. Epidendrum ſecundum.
Lin. ſpec. 1349. *Reich.* 4. 36. *Swartz obſ.* 325. *Jacqu. amer.* 224. *t.* 137. *pict.* 109. *t.* 207. *Plum. ſpec.* 179. *ic.* 84. *f.* 1. (Ophrys.)—*ſpec.* 9. *ic.* 148. *f.* 1. (Helleborine.) *Jacqu.*
β. E. anceps. *Jacqu. amer. pict. t.* 208.
Leaves on the ſtem oblong, emarginate, ſtem compreſſed, ſpike directed one way, tube of the nectary length of the corolla.

8. Epidendrum lineare.
Lin. ſpec. 1349. *Reich.* 4. 36. *Jacqu. amer.* 29. *t.* 131. *f.* 1. *pict.* 108. *t.* 201. *Swartz obſ.* 326.
Helleborine tenuifolia repens. *Plum. ſpec.* 9. *ic.* 182. *f.* 1.
Leaves on the ſtem diſtich, linear, obtuſe, emarginate, ſtem ſimple, flowers terminating, in a ſort of ſpike, lip entire.

9. Epidendrum punctatum.
Lin. ſpec. 1349. *Reich.* 4. 36.
Helleborine ramoſiſſima, cauliculis & floribus maculoſis. *Plum. ſpec.* 9. *ic.* 187.
Leaves lanceolate, nerved; ſheaths imbricate; ſcape panicled, and corollas dotted.

10. Epidendrum caudatum.
Lin. ſpec. 1349. *Reich.* 4. 37.
Helleborine ramoſiſſima, caulibus & floribus maculoſis. *Plum. ſpec.* 9. *ic.* 177.
Leaves lanceolate, nerved, ſcape panicled, petals ſpotted, tailed, two very long.

11. Epidendrum ovatum.
Lin. ſpec. 1349. *Reich.* 4. 37. *Rheed. mal.* 12. *t.* 7. *Rudb. elyſ.* 2. 223. *f.* 4. *Raii ſuppl.* 590. *n.* 40.
Angræcum minus album. *Rumph. amb.* 6. 99. *t.* 43. *f.* 1.
Leaves on the ſtem ovate, acute, ſtem-claſping, nerved, ſcapes panicled.

12. Epidendrum ciliare.
Lin. ſpec. 1349. *Reich.* 4. 37. *Jacqu. amer.* 214. *t.* 179. *f.* 89. *pict.* 110. *t.* 209.
Helleborine graminea, fol. rigidis carinatis. *Plum. ic.* 179. *f.* 2.
Leaves oblong, veinleſs; lip of the nectary three-parted, ciliate, the middle ſegment linear; ſtem two-leaved.

13. Epidendrum nocturnum.
Lin. ſpec. 1349. *ſyſt.* 818. *Reich.* 4. 37. *Swartz obſ.* 327. *Jacqu. amer.* 225. *t.* 139. *pict. t.* 210. *Cateſb. car.* 2. *t.* 68. (Viſcum).
Leaves oblong, veinleſs; lip of the nectary three-parted, quite entire, the middle ſegment linear; ſtem many-leaved.

14. Epidendrum cucullatum.
Lin. ſpec. 1350. *Reich.* 4. 37.
Helleborine flor. albis cucullatis. *Plum. ſpec.* 9. *ic.* 179. *f.* 1.
Leaves ſubulate; ſcape one-flowered; lip of the nectary ovate, ciliate, acuminate; petals elongated.

15. Epidendrum teres.
Lin. ſyſt. 818. *Thunb. jap.* 30.
Stem ſheathed, decumbent, leaves columnar.

*** *Scape naked, leaves radical.*

16. Epidendrum nodoſum.
Lin. ſpec. 1350. *Reich.* 4. 38. *hort. cliff.* 430. *act. upſ.* 1740. *p.* 36. *Swartz obſ.* 328. *Jacqu. amer.* 226. *t.* 140. *pict.* 110. *t.* 213. *Herm. par. t.* 187. *Pluk. alm. t.* 117. *f.* 6. *Sloan. jam.* 1. 251. *n.* 11. *t.* 121. *f.* 3. (Viſcum).
Leaf ſingle, ſubradical, ſpadix containing about four flowers.

17. Epidendrum carinatum.
Lin. ſpec. 1350. *Reich.* 4. 38. *act. upſ.* 1740. *p.* 36. *Pet. gaz.* 44. *f.* 10. (Bontia).
Leaves oblong, obtuſe, compreſſed, jointed.

18. Epidendrum aloifolium.
Lin. ſpec. 1350. *Reich.* 4. 38. *act. upſ.* 1740. *p.* 36. *Rheed. mal.* 12. *t.* 8. *Raii ſuppl.* 572. *n.* 46.
Leaves oblong, obtuſe, broader at the end.

19. Epidendrum guttatum.
Lin. ſpec. 1351. *Reich.* 4. 38. *act. upſ.* 1740. *p.* 37. *Sloan. jam.* 1. 251. *t.* 148. *f.* 2. (Viſcum.)

Helleborine fol. carnoſis carinatis & ſulcatis. *Plum. ſpec.* 9. *ic.* 182. *f.* 2?

Leaves lanceolate, channelled, petals wedge-ſhaped, retuſe.

20. Epidendrum juncifolium.

Lin. ſpec. 1351. *Reich.* 4. 39.

Helleborine maculoſa, fol. junceis & ſulcatis. *Plum. ſpec.* 9. *ic.* 184. *f.* 2.

Leaves ſubulate, furrowed, ſcape and petals dotted, lip without dots, dilated.

21. Epidendrum ſcriptum.

Lin. ſpec. 1351. *Reich.* 4. 39. *Rumph. amb.* 6. 95. *t.* 42. (Angræcum).

Leaves ovate-oblong, three-nerved, flowers racemed, ſpotted.

22. Epidendrum retuſum.

Lin. ſpec. 1351. *Reich.* 4. 39. *Rheed. mal.* 12. *t.* 1. *Rudb. elyſ.* 2. 220. *t.* 5. *Raii ſuppl.* 588. *n.* 33.

Leaves linear, retuſe at the end, in two rows, flowers racemed, ſpotted.

23. Epidendrum amabile.

Lin. ſpec. 1351. *Reich.* 4. 39. *Rumph. amb.* 6. 99. *t.* 43. (Angræcum).

Leaves broad-lanceolate, veinleſs, petals lateral, orbiculate.

24. Epidendrum cochleatum.

Lin. ſpec. 1351. *Reich.* 4. 39. *Ait. hort. kew.* 3. 303. *Jacqu. rar.* 2. *Cateſb. car.* 2. *t.* 88. *Swartz obſ.* 329.

Helleborine cochleato flore. *Plum. ſpec.* 9. *ic.* 185. *f.* 2.

Leaves oblong, double, ſmooth, ſtreaked, growing on the bulb, ſcape many-flowered, nectary cordate.

25. Epidendrum tuberoſum.

Lin. ſpec. 1352. *Reich.* 4. 40. *Lour. cochinch.* 523?

Helleborine purpurea, tuberoſa radice. *Plum. ſpec.* 9. *ic.* 186. *f.* 2.

Leaves broad-lanceolate, nerved, membranaceous, growing on the bulb, ſcape ſheathed, nectary boat-form, bifid.

26. Epidendrum puſillum.

Lin. ſpec. 1352. *Reich.* 4. 40. *mant.* 491.

Leaves enſiform, ſomewhat fleſhy, ſcape few-flowered.

27. Epidendrum enſifolium.

Lin. ſpec. 1352. *Reich.* 4. 40. *Lour. cochinch.* 524. *Smith. ſpicil.* 2. 22. *t.* 24. *Thunb. in Linn. tranſ.* 2. 327.

Limodorum enſatum. *Thunb. jap.* 29. *Banks ic. ſelect. Kæmpf. t.* 3. *Kæmpf. amoen.* 863. (Ran.)

Stem round, even, leaves enſiform, petals lanceolate, lip lanceolate, recurved, dotted.

28. Epidendrum moniliforme.

Lin. ſpec. 1352. *Reich.* 4. 41. *act. upſ.* 1740. *p.* 37. *Thunb. jap.* 30. *Kæmpf. amœn. t.* 864.

Stem round, jointed, ſtreaked, necklace-form, naked, quite ſimple, leaves linear, acute.

29. Epidendrum ophiogloſſoides.

Lin. ſpec. 1353. *Reich.* 4. 41. *Jacqu. amer.* 225. *t.* 133. *f.* 2. *pict.* 110. *t.* 211. (See n. 75.)

Helleborine ophiogloſſo ſimilis. *Plum. ſpec.* 9. *ic.* 176. *f.* 3.

Stem one-leafed, flowers racemed, pointing one way.

30. Epidendrum ruſcifolium.

Lin. ſpec. 1353. *Reich.* 4. 41. *Jacqu. amer.* 226. *t.* 133. *f.* 3. *pict.* 110. *t.* 212. *Swartz obſ.* 331.

Helleborine ruſci majoris folio. *Plum. ſpec.* 9. *ic.* 176. *f.* 2.

Stem one-leafed, flowers from the ſinus of the leaf aggregate.

31. Epidendrum graminifolium.

Lin. ſpec. 1353. *Reich.* 4. 41.

Helleborine graminea repens biflora. *Plum. ſpec.* 9. *ic.* 176. *f.* 1.

Stem one-leafed, flowers from the ſinus of the leaf in pairs.

32. Epidendrum capenſe.

Lin. ſyſt. 819. *ſuppl.* 407.

Scape naked, leaves imbricate in two rows, linear, obtuſe, flowers directed one way, horn very long.

33. Epidendrum fuſcatum. *Brown Epidendrum.*

Smith ſpicil. 2. 21.

Helleborine purpurea umbellata. *Plum. cat.* 9. *Ic. Burm.* 179. *t.* 184. *f.* 1?

Stems ſimple, leaves oval, peduncle terminating, elongated, ſcaly, lip of the nectary five-lobed, the middle lobe minute.

34. Epidendrum tripterum. *Triangular-fruited Epidendrum.*

Smith ic. rar. t. 14.

Leaves from a bulb and from the root ſword-ſhaped, ſtalks radical ſheathed, many-flowered, germ three-winged, lip equal to the petals.

35. Epidendrum Barringtoniæ. *Large-flowered Epidendrum.*

Smith. ic. rar. t. 15.

Leaves broad-lanceolate, nerved, ariſing from a bulb, peduncles radical, moſtly ſingle-flowered, lip fringed, column with a cover.

36. Epidendrum claviculatum.

Swartz prodr. 120.

Cerei affinis ſcandens planta aphylla. *Sloan. jam.* 2. 160. *t.* 224. *f.* 3, 4.

Stem climbing, round, branching, leaves ſeſſile, half-ſtem-claſping, acute, concave, recurved, rigid.

37. Epidendrum ramoſum.

Swartz prodr. 120. *Jacqu. amer.* 221. *t.* 132. *pict. t.* 202.

Stem very branching, ſuffruteſcent, leaves linear, emarginate, racemes terminating, compreſſed.

38. Epidendrum nutans.

Swartz prodr. 121.

Stem ſimple, leaves ovate-lanceolate, nerveleſs, ſtem-claſping, ſpike terminating, nodding, lip of the nectary three-lobed, the middle lobe three-toothed.

39. Epidendrum umbellatum.

Swartz prodr. 121.

E. difforme? *Jacqu. amer. t.* 136. *pict. t.* 206.

Stem ſimple, leaves ovate, emarginate, ſtem-claſping, veinleſs, flowers terminating, umbelled.

40. Epidendrum anceps.

Swartz prodr. 121.

Leaves cordate-lanceolate, ſtem-claſping, horizontal, raceme terminating, compreſſed, ancipital, ſubflexuoſe, flowers diſtich, inner petals capillary, with a three-lobed lip.

41. Epidendrum rigidum.

Swartz prodr. 121. *Jacqu. amer.* 222. *t.* 134. *pict. t.* 204.

Leaves oblong, obtuſe, ſheathing, raceme terminating, compreſſed, ancipital, flowers diſtich, larger than the ſpathes, lip entire, cordate-ovate, acute.

42. Epidendrum diffuſum.

Swartz prodr. 121.

Leaves oblong, ſtem-claſping, ſtem ancipital, panicle terminating, very much branched, diffuſed, lip entire, acuminate.

43. Epidendrum montanum.

Swartz prodr. 121.

Leaves lanceolate, flat, recurved, ſpreading, ſubmembranaceous, raceme terminating, ſimple, flowers pointing one way, lip trifid.

44. Epidendrum ſerrulatum.

Swartz prodr. 121.

Stems aggregate, ſubdiphyllous, leaves lanceolate, keeled, ſerrulate, raceme terminating, flowers diſtich.

45. Epidendrum teretifolium.

Swartz prodr. 121.

Leaves ſemicylindric, ſtem one-flowered, lip three-ſided at the tip.

46. Epidendrum globoſum.

Swartz prodr. 121. *Jacqu. amer.* 221. *t.* 133. *f.* 1. *pict. t.* 203.

Leaves cylindric, channelled, flowers terminating, ſubſolitary, lip ovate, acute, capſules globular.

47. Epidendrum ſertularioides.

Swartz prodr. 122.

Stem filiform, creeping, jointed, leaves lanceolate, peduncles one-flowered from radical ſheaths.

48. Epidendrum teſtæfolium.

Swartz prodr. 122.

Stem creeping, leaves incumbent, elliptic, concavo-convex, keeled, flowers ſeſſile under the leaves.

49. Epidendrum undulatum.
Swartz prodr. 122.
E. carthagenenſe? *Jacqu. amer.* 228. *t.* 133. *f.* 4. *pict. t.* 214.
Viſcum. *Sloan. jam.* 1. 250. *t.* 148. *f.* 1.
Satyrium. *Brown. jam.* 326. 15.
Helleborine maculoſa, &c. *Plum. ic.* 178. *f.* 2.
Leaves elliptic, acute, ſcape ſarmentoſe, very much branched, petals ovate, clawed, obtuſe, lip dilated, emarginate, waved.

50. Epidendrum variegatum.
Swartz prodr. 122.
E. tetrapetalum? *Jacqu. amer. t.* 132. *pict. t.* 216.
Helleborine fol. carnoſis carinatis? *Plum. ic.* 177. *t.* 182. *f.* 2.
Leaves lanceolate, keeled, channelled, cartilaginous-ſerrate on the edge, ſheaths imbricate, ſcapes ſheathing, with a ſimple raceme, lip cruciate, two-lobed.

51. Epidendrum utricularioides.
Swartz prodr. 122.
Leaves lanceolate, marked with lines, flat, ſcape panicled, lip large, heart-ſhaped, horn very ſhort.

52. Epidendrum triquetrum.
Swartz prodr. 122.
Leaves three-ſided, cultrate, compreſſed at the tip, lanceolate, acute, ſcape ſimple, lip heart-ſhaped, ovate, ſides emarginate.

53. Epidendrum ſeſſile.
Swartz prodr. 122.
Leaves compreſſed at the baſe, broader at top, lanceolate-linear, obtuſe, veinleſs, peduncles radical, very ſhort, one-flowered.

54. Epidendrum flabelliforme.
Swartz prodr. 123.
Leaves compreſſed at the baſe, dilated at top, ovate-lanceolate, acute, flat, nerved, peduncles one-flowered, elongated.

55. Epidendrum ſubulatum.
Swartz prodr. 123.
Leaves awl-ſhaped, grooved, peduncles ſheathed, radical, many-flowered.

56. Epidendrum ſatyrioides.
Swartz prodr. 123.
Leaves ſubulate-cylindric, ſcape few-flowered, corollas ventricoſe at the baſe in front.

57. Epidendrum tribuloides.
Swartz prodr. 123.
Leaves pedicelled, lanceolate, obtuſe, emarginate, peduncles very ſhort, capſules globoſe, echinate.

58. Epidendrum corniculatum.
Swartz prodr. 123.
Leaves pedicelled, wedge-ſhaped, oblong, peduncles radical, one-flowered, corollas acuminate, curved.

59. Epidendrum Lanceola.
Swartz prodr. 123.
Leaves pedicelled, lanceolate, acute, peduncles from radical ſheaths, two-flowered.

60. Epidendrum anguſtifolium.
Swartz prodr. 123.
Leaf linear, growing upon the bulb, ſcape panicled.

61. Epidendrum palmifolium.
Swartz prodr. 123.
Leaves broad-lanceolate, nerved, membranaceous, growing on the bulb, peduncles radical, ſheathed, many-flowered, nectary boat-ſhaped, entire, reflex.

62. Epidendrum altiſſimum.
Swartz prodr. 123. *Jacqu. amer.* 229. *t.* 141. *pict. t.* 215.
Leaves lanceolate, growing on the bulbs, ſcape very much branched, ſarmentoſe, petals oblong, lanceolate, acute, lip obcordate, ſhorter than the petals.

63. Epidendrum fragrans.
Swartz prodr. 123. *Ait. hort. kew.* 3. 304.
E. cochleatum. *Curt. magaz.* 152.
Leaf broad-lanceolate, nerveleſs, growing on the bulb, ſcape many-flowered, abbreviated, lip heart-ſhaped.

64. Epidendrum ſanguineum.
Swartz prodr. 124. *Sloan. jam.* 1. 250. *n.* 10. *t.* 121. *f.* 2. (Viſcum). *Brown. jam.* 324. 3. (Satyrium).
Leaves in pairs, oblong, growing on the bulb, ſcape many-flowered, ſubflexuoſe, lip roundiſh, waved, emarginate, horn adnate.

65. Epidendrum labiatum.
Swartz prodr. 124.
Leaves radical, oblong, middle bulb ſolitary, one-leafed, ſcapes few-flowered, lip oblong, with a fleſhy corpuſcle growing to it at top.

66. Epidendrum polybulbon.
Swartz prodr. 124.
Stem creeping, bulb bearing, bulbs two-leaved, one-flowered, flower peduncled, lip heart-ſhaped.

67. Epidendrum proliferum.
Swartz prodr. 124.
Cauleſcent, leaves diſtich, ſubimbricate ovate, bulbs from the ſheaths of the leaves two-leaved, flowers axillary, ſeſſile.

68. Epidendrum veſtitum.
Swartz prodr. 124.
Stem leafleſs, imbricate all round with ſheaths, roundiſh, bulb-bearing, bulbs growing on the leaf, flowers crowded from the ſheaths of the ſtem.

69. Epidendrum vomiforme.
Swartz prodr. 124.
Cauleſcent, leaves growing on the bulbs, ovate-acuminate, convex, channelled, three-ſided beneath, ſcapes from the boſom of the leaves.

70. Epidendrum echinocarpon.
Swartz prodr. 124.
Limodorum pendulum. *Aubl. guian.* 818. *t.* 322.
Stem compreſſed, decumbent, one-flowered, leaves imbricate all round, diſtich, ovate, capſules muricate.

71. Epidendrum trichocarpon.
Swartz prodr. 124.
Stem compreſſed, round, rooting, leaves imbricate all round, diſtich, linear, capſules tomentoſe.

72. Epidendrum glaucum.
Swartz prodr. 124.
Stem compreſſed, almoſt upright, many-flowered, leaves imbricate all round, diſtich, broad-lanceolate, very ſmooth, glaucous beneath, capſules naked.

73. Epidendrum graminoides.
Swartz prodr. 125.
Stem erect, compreſſed, many-flowered, leaves imbricate all round, diſtich, remote, linear, peduncles longer.

74. Epidendrum micranthum.
Swartz prodr. 125.
Stem one-leafed, leaf broad-lanceolate, raceme very long, filiform, flowers pointing one way, roundiſh, ſix-cornered.

75. Epidendrum trigoniflorum.
Swartz prodr. 125.
E. ophiogloſſoides. *Jacqu. amer. t.* 133. *f.* 3. *pict. t.* 211. (See n. 29.)
Stem one-leafed, leaf oblong lanceolate, raceme the length of the leaves, flowers moſtly pointing one way, three-cornered.

76. Epidendrum racemiflorum.
Swartz prodr. 125.
Stem one-leaved, leaf ovate, raceme longer than the leaves, flowers pointing one way, inner petals ovate.

77. Epidendrum alpeſtre.
Swartz prodr. 125.
Stem one-leafed, leaf ovate-lanceolate, racemes looſe, keels of the capſules muricate.

78. Epidendrum laxum.
Swartz prodr. 125.
Stem one-leafed, leaf oblong, raceme the length of the leaves, inner petals awl-ſhaped, lip ovate, capſules naked.

79. Epidendrum ovale.
Swartz prodr. 125.
Stem one-leafed, leaf ovate, acuminate, raceme preſſed cloſe, many-flowered, petals roundiſh, the inner ones remote in front at the baſe, capſules pedicelled.

80. Epidendrum pulchellum.
Swartz prodr. 125.
Stem one-leafed, leaf roundiſh, acute, raceme looſe, few-flowered, petals acuminate, ciliate, the inner one croſſed at the tip.

81. Epidendrum tridentatum.
Swartz prodr. 125.
Stem one-leafed, leaf ovate-acute, three-toothed at the tip,

tip, raceme many-flowered, flowers three-ſided, acuminate, petals of the nectary erect, bowed inwards.

82. Epidendrum cochlearifolium.
Swartz prodr. 126.
Stem one-leafed, leaf orbiculate, concavo-convex, raceme few-flowered.

83. Epidendrum funale.
Swartz prodr. 126.
Leafleſs, filiform, rooting, peduncle two-flowered; lip two-lobed, horn very long, awl-ſhaped.

84. Epidendrum filiforme.
Swartz prodr. 126.
Leafleſs, filiform, rooting, peduncles ſubtriflorous, lip ovate, horn very ſhort, headed at the tip.

85. Epidendrum concretum.
Jacqu. amer. 228.
Leaves radical, lanceolate, acute, nectary concrete with the petals.

86. Epidendrum Cebolleta.
Jacqu. amer. 230. *t.* 131. *f.* 2. *pict. t.* 217.
Leaf radical, ſingle, awl-ſhaped; knot rooted, raceme compound.

87. Epidendrum ſpathulatum.
Retz. obſ. 6. 43.
Leaves bifarious, alternate, approximating, præmorſe, with a doubled tip, coriaceous, ſcarcely a foot long.

88. Epidendrum variegatum.
Retz. obſ. 6. 44. *Rumph. amb.* 6. 93. *t.* 41. *f.* 3?
Leaves alternate, ſpreading, ſheathing, ovate acute, three-nerved, waved, ſmooth, variegated.

89. Epidendrum Calceolariæ.
Retz. obſ. 6. 45.
Leaves bifarious, alternate, remote, ſpreading very much, awl-ſhaped; thick, ſmooth.

90. Epidendrum hexandrum.
Retz. obſ. 6. 45.
Leaves bifarious, alternate, ſpreading, a little ſeſſile, ending in ſheaths, ſomewhat remote, lanceolate, emarginate with a point, rigid.

91. Epidendrum Ophrydis.
Retz. obſ. 6. 46.
Leaves alternate, ſheathing, from erect ſpreading, ovate, acute, quite entire, nerved; ſmooth, a little bulbed on the ſurface, membranaceous, ſhorter than the ſcape, ending in tubular, keeled, ſmooth ſheaths.

92. Epidendrum Supplex.
Retz. obſ. 6. 47.
Leaves crowded, ſword-ſhaped, ſheathing, compreſſed, quite entire, acute, ſmooth, fleſhy.

93. Epidendrum orchideum.
Retz. obſ. 6. 48.
Leaves bifarious, alternate, ſeſſile, ſpreading, lanceolate, quite entire, acute, ſmooth, fleſhy, rigid.

94. Epidendrum puſillum.
Retz. obſ. 6. 49.
Shoots in bundles, appreſſed, a ſpan long, racemes ſolitary, ſimple, upright, compreſſed, naked at bottom, toothletted towards the tip, ſmooth.

95. Epidendrum complanatum.
Retz. obſ. 6. 50.
Leaves alternate, ſeſſile, ſpreading, linear-moon-ſhaped, retuſe, ſmooth, upper ſurface concave, lower keeled, fleſhy.

96. Epidendrum clavatum.
Retz. obſ. 6. 50.
Leaves alternate, ſeſſile, ſpreading, a little linear-club-ſhaped, with two unequal teeth at the end, ſmooth, flat, having a large nerve, depreſſed above, permanent beneath.

97. Epidendrum ſubulatum.
Retz. obſ. 6. 51.
Leaves alternate, erect, ſeſſile, awl-ſhaped, cylindric, ſmooth, acute; ſheaths obtuſe, margined, ſmooth, with minute dark-purple dots, ſhort.

98. Epidendrum nudum.
Retz. obſ. 6. 52.
Stem none; peduncles ſimple, one-flowered, with two or three ſmooth membranaceous tubular ſheaths, inveſting the younger peduncles with an oblique mouth, caducous.

99. Epidendrum tomentoſum.
Retz. obſ. 6. 53.
Leaves from the bulbs uſually four; ſeldom two or three, alternate, almoſt erect, bifarious at the baſe, half-ſheathing the bulb, oblong, quite entire, acute, concave, recurved at the tip, ſmooth, eight-nerved, fleſhy.

100. Epidendrum bidentatum.
Retz. obſ. 6. 54.
Leaves ſheathing each other, three or four, ſeldom five, ſword-ſhaped, bifarious, ſeſſile, quite entire, with two ſharp toothlets at the tip, ſmooth on both ſides, keeled at the back.

101. Epidendrum lycopodioides.
Retz. obſ. 6. 55.
Stems crowded at the roots, pendulous, ſimple, compreſſed; leaves alternate, bifarious, ſheathing one another at the baſe, preſſed cloſe above the ſheaths, lanceolate, acute, a little margined, ſmooth, fleſhy.

102. Epidendrum longiflorum.
Retz. obſ. 6. 55.
Leaves growing to the bulbs, ſolitary, ſubpetioled, erect, lanceolate-retuſe, margin quite entire, recurved, ſmooth, fleſhy, rigid, brittle.

103. Epidendrum Flabellum.
Retz. obſ. 6. 57.
Leaves ſolitary, one from each bulb, erect, petioled, lanceolate oblong, quite entire, emarginate, a little recurved, obſcurely nerved, ſmooth, fleſhy, rigid.

104. Epidendrum ſaaronicum.
Retz. obſ. 6. 58.
Leaves alternate, ſubbifarious, ſeſſile, ſpreading, lanceolate, flattiſh, above even, ſtreaked ſlightly, and having five more evident nerves, beneath ſmooth, with a ſmall groove along the midrib, but no ſtreaks, emarginate, fleſhy, rigid.

105. Epidendrum plantaginifolium.
Retz. obſ. 6. 60.
Leaves bifarious, ſheathing each other, erect, linear-three-ſided, ſlightly channelled, ſharpiſh, ſmooth, fleſhy, narrow at the baſe next the ſheaths.

106. Epidendrum ſeſſile.
Retz. obſ. 6. 60.
Leaves ſcattered from ſeſſile bulbs, ſpreading, ſubpetioled, retuſe, above ſmooth, a little channelled, beneath convex, fleſhy.

107. Epidendrum liliifolium.
Retz. obſ. 6. 61.
Leaves from the bulbs ſubpetioled, erect at the baſe, more ſpreading at the tip, linear-lanceolate, ſharpiſh, ſmooth, keeled at the back, membranaceous, ſcarcely rigid.

108. Epidendrum Calceolariæ terreſtre.
Retz. obſ. 6. 63.
Leaves ſpreading, bifarious, ſeſſile, ending in ſheaths, oblong-lanceolate, quite entire, ſlightly and obliquely emarginate, above even, ſhining, beneath ſmooth, with from nine to fourteen nerves, rigid, the lower ones ſhort, broader, the upper longer, and ſcarcely an inch broad.

109. Epidendrum Flos aeris?
Retz. obſ. 6. 64.
Leaves from bulbs, ovate-oblong, acute, flat, fleſhy.

110. Epidendrum triſte.
Forſt. flor. auſtral. n. 314.
Leaves cylindric, empty, ſheaths fiſtuloſe, peduncles oppoſite to the leaves, corymbed, perforating the ſheath, lip of the nectary entire, ſpatulate-heart-ſhaped.

111. Epidendrum criſpatum.
Forſt. flor. auſtral. n. 315.
Leaves cauline, round, filiform, ſubincurved, empty, ſeſſile, raceme quite ſimple, lip of the nectary with the middle ſegment revolute, waved, crenate.

112. Epidendrum equitans.
Forſt. flor. auſtral. n. 316.
Leaves equitant, enſiform-compreſſed, keeled, acuminate, ſcape naked, raceme ſpiked, nodding, filiform.

113. Epidendrum Myoſurus.
Forſt. flor. auſtral. n. 317.
Leaves ſheathing at the baſe, obliquely divaricate, linear, obtuſe, channelled, ſcape naked, raceme ſpiked, nodding, filiform.

114. Epidendrum biflorum.
Forſt. flor. auſtral. n. 318.
Leaves diſtich, linear-lanceolate, acute, peduncles two-flowered, ſolitary, perforating the ſheaths of the leaves, lip of the nectary trifid, acuminate.

115. Epidendrum autumnale.
Forſt. flor. auſtral. n. 319.
Leaves cauline, lanceolate, nerved, crowded, ſheathing, peduncles terminating, ſcaly, panicled, lip of the nectary erect, retuſe.

116. Epidendrum Faſciola.
Forſt. flor. auſtral. n. 320.
Leaves rooting, paraſitical, bundled, linear, waved, ſcapes ſeveral, racemed, lip of the nectary ſlipper-ſhaped, with a ſpur.

117. Epidendrum umbellatum.
Forſt. flor. auſtral. n. 321.
Runners creeping, leaves oval, fleſhy, petioled, petioles fixed into ovate angular-keeled apophyſes, ſcape rooted, umbel ſimple, one-ſided, loweſt petals elongated.

118. Epidendrum reſupinatum.
Forſt. flor. auſtral. n. 322.
Baſaala-poulou-maravara. *Rheed. malab.* 12. *t.* 27.
Leaves cauline, petioled, ovate, acuminate, quite entire, plaited, keeled, five-nerved, raceme ſimple, ſpiked, flowers inverted, lower lip of the nectary toothed.

119. Epidendrum Clypeolum.
Forſt. flor. auſtral. n. 323.
Leaf radical, roundiſh, cordate, cowled at the baſe, reflex and ſharp at the tip, ſcape almoſt erect, racemed, lower lip of the nectary orbiculate, emarginate, very large.

120. Epidendrum nervoſum.
Thunb. in Linn. tranſ. 2. 327.
Ophrys nervoſa. *Thunb. jap.* 27.
Scape angular, leaves ovate, nerved, lip entire, reflex.

121. Epidendrum ſtriatum.
Thunb. in Linn. tranſ. 2. 327.
Limodorum ſtriatum. *Thunb. jap.* 28.
Scape angular, ſmooth, leaves ſword-ſhaped, nerved, petals lanceolate, lip oblong, flat.

122. Epidendrum teſſelatum.
Roxb. pl. corom. 2. 34. *t.* 42.

123. Epidendrum præmorſum.
Roxb. pl. corom. 2. 34. *t.* 43. *Rheed. mal.* 12. *t.* 4.

124. Epidendrum pendulum.
Roxb. pl. corom. 2. 35. *t.* 44.

DESCRIPTIONS, &c.

The whole genus is obſcure in its character, differences and ſynonyms; for the flowers in dried ſpecimens can hardly be unfolded; the plants are cultivated with difficulty in gardens; and the ſpecies have not been ſufficiently deſcribed by authors who have had an opportunity of ſeeing them in America and the Eaſt-Indies, their native places of growth.

Linneus had only thirty ſorts in his ſpecies plantarum, and the number was not increaſed in the twelfth and thirteenth editions of the ſyſtema vegetabilium. In the fourteenth edition of the ſame work, two only are added by Murray from Jacquin, who has eleven other new ſpecies in his Stirpium americanarum hiſtoria. Swartz has forty-nine from the Weſt-Indies, ſome of which are the ſame with Jacquin's. Retzius has twenty-three obſerved by Koenig in the Eaſt-Indies. And Forſter has ten from the iſlands in the South ſeas. The number of ſorts here regiſtered amounts to 124, and doubtleſs there are many more, ſince Dr. Smith, in his elegant works, has figured two ſpecies from Jamaica, which eſcaped the reſearch of the indefatigable Swartz. On a ſeverer ſcrutiny, however, ſome of theſe numerous ſpecies may turn out to be varieties, and others to be the ſame ſpecies repeated.

Jacquin remarks, that all his ſpecies, particularly the ſmaller ones, become by age more or leſs ceſpitoſe, and run over the bark of trees with their numerous roots, fixing themſelves into it with a conſiderable degree of firmneſs. They differ very much from each other in the ſtructure of the flower, more indeed than ſeveral of the different genera of this order; and might be diſtinguiſhed into ſeveral genera.—Linneus's character of the nectary is by no means ſufficient to form an eſſential character; for it is horn-ſhaped, ovate, ſlightly keeled, pedicelled, &c. The corollas alſo have from two to five petals; the anthers are from one to eight, and the capſules differ in their form. They are, however, all paraſitical, and could not be divided into genera without difficulty, which after all would be too artificial: Swartz, therefore, has done better by caſting the genus into eight ſubdiviſions or ſections. 1. Climbing. n. 39. 2. Stem leafy, upright. 40 to 49. 3. Stem creeping. 50, 51. 4. Stemleſs, with radical leaves. 52 to 62. 5. Leaves growing on the bulbs, 63 to 72. 6. Stem creeping, leaves imbricate. 73 to 76. 7. Stems one-leafed. 77 to 85. 8. Leafleſs. 86, 87.

Juſſieu obſerves, that the petiole of the leaves is ſometimes dilated into a bulb; and that the flowers are either in ſpikes or panicles, varying in their form.

1. The Vanilla is ſeparated from the other Epidendrums by Plumier, Juſſieu, Miller, and others.]

Stem trailing, ſomewhat like common Ivy, but not ſo woody, faſtening itſelf to whatever tree grows near it, by ſmall fibres or roots produced at every joint, by which it may receive nouriſhment, when cut or broken off from the root a conſiderable height above the ground. The leaves are as large as thoſe of the common Laurel, but not quite ſo thick; they are placed alternate at the joints, which are ſix or ſeven inches aſunder, and are of a lively green colour above, but paler underneath. The ſtems ſhoot into many branches, which alſo faſten themſelves to the boughs of trees, and thus riſe to the height of eighteen or twenty feet, ſpreading quite over ſmaller trees. The flowers are of a greeniſh yellow colour, mixed with white; and are ſucceeded by fruit ſix or ſeven inches long.

[Five diviſions of the calyx (or the corolla, as Linneus calls it) are equal, large, and ſpreading, generally waving; the ſixth, which is the inner one, is rolled up into a kind of funnel, with an unequal border; the flowers are in looſe flexuoſe ſpikes, both axillary and terminating[a].

The pods grow in pairs, are generally the thickneſs of a child's finger, and about five or ſix inches in length; they are green at firſt, then yellowiſh, and turn of a browniſh caſt as they ripen. The ſtalk is moderately ſlender, and throws out a long winding tendril oppoſite to each of the lower leaves, by which it ſticks to the branches, or bark of the tree; but after it gains the top, theſe become uſeleſs, and the place of each is ſupplied by a fellow leaf[b].

According to Swartz, the ſtem is ſubparaſitical, climbing very high, rooting by means of ſimple fibres like tendrils, oppoſite to the leaves, ſubflexuoſe, leafy, ſubdivided at top, round, thick, ſucculent, ſmooth. Leaves ſeſſile, or half-embracing, or ſomewhat ſheathed, alternate, ovate, acuminate, half a foot long, entire, longitudinally nerved, very ſmooth, thick. Flowers peduncled, axillary, large, purple: peduncle axillary, ſolitary, one or two-flowered, ſhort; with a ſeſſile ovate leaflet or bracte under each flower. Siliques pendulous, half a foot long and more, ſmooth, one-celled, three-valved. Seeds roundiſh, black, ſhining.

The manner of growth and flowering, the ſize of the flowers, fruit, and lens-ſhaped, dark ſhining ſeeds, without any aril, diſtinguiſh this from the other ſpecies. Vanilla, with E. flos aeris and claviculatum, might be ſeparated from the genus Epidendrum[c].

Native of South America and the Iſlands in old woods, in the moiſt ſhady parts of them.] In the bay of Campeachy, at Carthagena, the Caraccas, Honduras, Darien, Cayenne, &c. the fruit is gathered and preſerved. Cultivated by Mr. Miller in 1759.

When it turns of a yellow colour, and begins to open, they gather it, and lay it in ſmall heaps to ferment two or three days, in the ſame manner as is practiſed for the Cocoa or Chocolate pods; then they ſpread them in the ſun to dry, and when they are about half dried, they flat them with their hands, and afterwards rub them over with the oil of Palma Chriſti, or of the Cocoa; then they expoſe them to the ſun again to dry, and afterwards they rub them over with oil a ſecond time, then they put them in ſmall bundles, covering them with the leaves of the Indian Reed, to preſerve them.

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[a] Juſſieu. [b] Browne. [c] Swartz & Gærtn.

Theſe plants produce but one crop of fruit in a year, which is commonly ripe in may, fit for gathering, for they do not let them remain on the plants to be perfectly mature, becauſe then they are not ſo fit for uſe; but when they are about half changed yellow, they eſteem them better for keeping, than when they are changed to a dark brown colour, at which time the fruit ſplits, and ſhews a great quantity of ſmall ſeeds, which are incloſed within it. While the fruit is green, it affords no remarkable ſcent, but as it ripens, it emits a moſt grateful aromatic odour. When the fruit begins to open, the birds attack it and devour all the ſeeds very greedily, but do not eat any other part of the fruit.

The fruits which are brought to Europe, are of a dark brown colour, about ſix inches long, and ſcarce an inch broad; they are wrinkled on the outſide, and full of a vaſt number of black ſeeds, like grains of ſand, of a pleaſant ſmell, like Balſam of Peru.

The fruit is only uſed in England as an ingredient in Chocolate, to which it gives a pleaſant flavour to ſome palates, but to others it is very diſagreeable; but the Spaniſh phyſicians in America uſe it in medicine, and eſteem it grateful to the ſtomach and brain, for expelling wind, to provoke urine, to reſiſt poiſon, and cure the bite of venomous animals.

[The Spaniards, French and Italians not only uſe the Vanilla to give Chocolate a delicate ſmell, and agreeable flavour; but alſo to perfume ſnuffs and other ſubſtances. It yields a great quantity of oil and volatile ſalt[d].]

Mr. Miller has another ſpecies, which he calls *Vanilla axillaris*, and diſtinguiſhes by its oblong, blunt, compreſſed, jointed leaves, and axillary flowers. It was ſent him from Carthagena in New Spain, where it grows naturally. It has a climbing ſtalk, ſending out roots from the joints, like the other, and mounting to a great height. The leaves, which come out ſingly at each joint, are oblong, ſmooth and jointed. The flowers come out from the ſide of the branches; they are ſhaped like thoſe of the great Bee-Orchis, but are longer: the helmet is of a pale pink, and the lip is purple. It flowered in the Chelſea garden, but lived only one year.

There are two or three varieties of the common Vanilla, differing in the colour of their flowers, and the length of their pods.

[2. The flowers reſemble a ſpider. It is a native of Java, and is paraſitical[e]. See n. 112.

3. Native of Malabar in the Eaſt-Indies.

4. Native of the Eaſt-Indies. Compare Cateſb. car. t. 68[f].—See n. 13.

5. Native of the Eaſt-Indies. The ſynonyms of Rheede and Rumphius belong to different plants; for they differ in the form of their leaves, the ſize of their flowers, &c.[g].

6. This is an elegant paraſitical plant. Roots round, numerous, fibrous, aſh-coloured. Stems ſeveral, ſcarcely attaining to a foot in height; before theſe ſpring the flowers come forth in the axils of the root-leaves; they alſo come out from the axils of the ſtem-leaves ſucceſſively as the ſtems advance. On the ſides of the ſtems are alſo knots or little roundiſh, compreſſed, ſmooth, wrinkled, ſpongy, green bulbs, terminated by a leaf. Leaves both at the root and ſtem ſubenſiform, emarginate, obtuſe, entire, veinleſs, ſhining, thickiſh, ſomewhat flaccid, converging at the baſe, flat above, from four to eight inches long. Peduncles filiform, whitiſh, tender, two inches long, one-flowered, axillary, commonly in pairs, or three together, with a few ſheathing ſpathes. Flowers void of ſcent, the whole, with the germ, ſcarlet, agreeing in character with E. lineare, n. 8. except that the petals are ovate-acuminate and concave. Lower lip of the nectary lanceolate-cordate, ſomewhat rigid, and almoſt upright. Anthers on each filament double, compreſſed. Germ linear, ſlender, much longer than the petals.

Native of Martinico, in moiſt woods, eſpecially by the ſide of torrents[h]; alſo in Jamaica, but not common. Cultivated at Kew in 1794.

7. Paraſitical. Roots fibrous, white. Stem round at bottom, gradually compreſſed, leafy, pendulous. Leaves ſeſſile, ſheathing, alternate, ſpreading in two rows, the outmoſt tip emarginate, veinleſs. Peduncle ſcape-form, often two feet long, terminating, compreſſed, jointed as it were by the deciduous ſheaths. Flowers terminating, in form of a corymb, nodding one way, pale red or brown. Spathes minute. Three of the petals ovate-lanceolate, ſpreading, two linear, bent down. Nectary longer than the petals: lip three-lobed, the middle lobe emarginate, aſcending, ſpreading, the ſide ones ſmaller, emarginate. Column ſhort, bifid at the tip, bearing two pedicelled anthers under a two-celled lid, and concealed within the tube of the nectary. Stigma in front, funnel-form. Capſule oblong, angular, three-valved.

It varies with a rounder and more compreſſed ſtem; leaves broader, or more acuminate; flowers terminating, or breaking out on the ſide; and tube of the nectary ſhorter or longer than the petals[i].

Native of Martinico and Jamaica, in mountainous woods. Cultivated at Kew in 1794.

Swartz is of opinion that E. anceps of Jacquin is no more than a variety of this. Jacquin thus deſcribes it. Paraſitical, half a foot high, or ſomewhat more. Roots fibrous, round. Stem compreſſed, ancipital at top, with few leaves. Leaves oblong, blunt, coriaceous, alternate, ſheathing. Spadix lateral, few-flowered. The flowers have the ſame character with E. difforme (ſee n. 42.), but the tube of the nectary is little more than half the length of the petals, and the lower lip is half three-lobed; the lobes rounded, almoſt equal, the middle one ſlightly two-toothed. Germ equal to the petals. Native of Martinico.

8. Paraſitical. Roots filiform, creeping, ſtrict, white. Stems ſimple, heaped, tufted, from one to two feet long, erect, filiform, leafy, compreſſed a little, ſmooth. Sheaths radical, withering, whence the ſtems appear to be jointed. Leaves alternate, approximating, ſeſſile, ſheathing, ſlightly ſtreaked, ſmooth on both ſides. Sheaths of the leaves compreſſed. Spike ſcarcely the length of the leaves; flowers ſeſſile, alternate, imbricate, from ſix to ten, ſmall and blood-red. Spathes ſheathing, under the flowers, coloured. Corolla three-cornered, gibbous at the back; the three outer, and the two inner petals almoſt equal, oblong, concave, blunt, the two outer in front vaulted, compreſſed at the tip. Nectary of the ſame ſhape with the inner petals, erect, embracing the column at the baſe, having two dark-purple ſpots at the edge, concave, blunt at top, blood-red. Column ſhorter than the petals, gibbous at the back, with three teeth at the tip, bearing in a cavity four oblong pedicelled anthers, cloſed by a four-celled lid, hollowed in front for the ſtigma. Capſule oblong, three-valved, opening in the middle. Seeds extremely minute, duſty and briſtly[k]; as Jacquin ſays, irregularly ſhaped like ſaw-duſt.

Native of thick mountain woods in Martinico, and other of the Weſt-India iſlands; flowering in ſpring. Cultivated at Kew in 1794.

9. The ſheaths of the leaves, the panicle and the petals are dotted, whence the name. Native of America.

10. This alſo is a native of America.

11. Native of the Eaſt-Indies[l].

12. This is an elegant plant, a foot and half high, paraſitical on the trunks of vaſt trees, from which

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[d] Long's Jam. 3. 715.

[e] Linn.

[f] Linn.

[g] Swartz. obſ.

[h] Jacquin.

[i] Swartz.

[k] Ibid.

[l] Linn.

it hangs down towards the ground. Roots thick, fibrous, numerous. Stem ſimple, ſmooth. Leaves two, obtuſe, quite entire, ſhining, veinleſs, coriaceous, flat, alternate in two rows, half a foot long, erect like hare's ears, each ariſing from an oblong, thick, ſtriated, ſpongy body, forming the baſe of the ſtem. Spathes ſmooth, ferruginous, numerous, compreſſed below the flowers, imbricate, alternate, diſtich, covering the ſpadix, looſe and patulous in flowering time. Spike looſe, compoſed of about ten handſome white flowers, four inches in diameter, all pointing one way. Native of Martinico [m]. Cultivated at Kew in 1794.

13. Roots round, thick, filiform, whitiſh. Stem from one to two feet high, ſimple, erect, round, leafy, ſmooth. Leaves ſheathing, alternate, ſubdiſtich, from two to three inches long, oblong, entire, thickiſh, veinleſs, ſhining. Flowers terminating, two or three, ſeſſile, large, whitiſh yellow. Spathes a few, ovate, compreſſed. Petals almoſt equal, lanceolate-linear, ſpreading, the two inner narrower and white. Tube of the nectary compreſſed, gibbous, ſhorter than the petals; lip trifid, the lateral ſegments entire, the middle longer, erect, ſubulate-linear. Column incloſed within the tube of the nectary, gibbous, having at the top four pedicelled, obovate, compreſſed anthers, under a four-celled cover. Capſule oblong, attenuated at the baſe, three-cornered, three-valved, opening in the middle. Seeds reſembling ſaw-duſt [n].

Native of the mountain woods in Martinico; and in Jamaica, but not common. It ſmells very ſweet during the night.

14. Native of America. Cultivated at Kew in 1794.

15. Roots ſeveral, filiform, flexuoſe, creeping. Stem ſheathed with the rudiments of leaves. Leaves alternate, fleſhy, ſharp, a finger's length. Native of Japan [o].

16. Roots thick, numerous, filiform, ſtrict, whitiſh, knee-jointed. Stem one-leafed, thick, round, ſheathed, a foot high, thickened towards the roots, knotted. Sheaths cloſed, alternate, cloſely ſurrounding the ſtem, keeled, ſtreaked, membranaceous, whitiſh. Leaf in the middle of the ſtem ſeſſile, ſheathing, from round awl-ſhaped, deeply grooved, erect, ſpotted, thick, fleſhy. Spadix from the ſinus of the baſe of the leaf, and of the ſame length with it, erect, round. Spathes minute on the ſpadix, and below the flowers; which are from twelve to fifteen, large, whitiſh, yellow, ſeſſile. Petals three outer, lanceolate-linear, long, ſpreading; two inner linear. Nectary ſomewhat funnel-ſhaped, embracing the column, erect, compreſſed, bellying at the baſe, keeled, dilated at top; lip ovate, with an awl-ſhaped, ſtriated, veined, ſpreading, whitiſh point. Column minute, incloſed within the nectary, keeled, hollowed in front, bearing at top four, oblong, bipartile, pedicelled anthers, concealed by a four-celled cover. Germ very long, round, filiform. Stigma moiſtened in front under the cavity of the anthers. Capſules an inch long, oblong, pendulous, ſix-grooved, three-valved, many-ſeeded. Seeds duſty, briſtly. Native of the Weſt-Indies, near the coaſt; flowering in ſpring [p].

17. Native of the Philippine iſlands; on trees [q].

18. Root thick, fungous, crinite, knobbed, paraſitical. Leaves ſeveral from the knob of the root, from two to three feet long, and two fingers broad, ſmooth, ſhining, browniſh green, thick. Flowering-ſtems ſeveral, undivided, round, green, ſhining. Three of the petals are narrow, oblong, of a fine red colour within, with white edges, on the outſide white and green, in ſtreaks, with a tinge of red; nectary yellow, with red lines.

Native of Malabar, on different trees [r].

19. From a matted root this ſends out ſeveral leaves three inches long, and not a quarter of an inch broad, almoſt triangular, and of a yellowiſh green colour. From the midſt of theſe comes the flowering-ſtalk. Each flower is made up of four little white petals, ſpotted with brown, and one large one with fewer ſpots, on which is a ſmall yellow hood, and oppoſite to it one like it of a blue colour; on pedicels an inch long, round the top of the ſtalk. Native of Jamaica, on the ebonies [s].

20. Native of America.

21. Native of the Eaſt-Indies.

22. Three feet in height. Root white, woody, bent in, curled, fixing itſelf into the bark of trees by its capillary hairy fibres. Stem riſing between two rows of leaves, ſimple, ſhining, ſmooth, marked with rings. The leaves which come out from the top of the ſtem, and when dry conſtitute the ſtem itſelf, are oblong-narrow, equally thick and broad on every ſide, folded together, ſmooth, ſhining, without any viſible veins or nerves. Flowering-branches ten or twelve together, riſing ſtraight from among the leaves, green, rigid; accompanied at the baſe by abundance of very minute whitiſh buds, gradually enlarging, but not opening till they have acquired a conſiderable ſize. All the flowers opening together invert the ſtem, and reſemble a fox's tail; they are on whitiſh peduncles, iſſuing from a ſmall acute bracte, ſtiff, thick, oblong, irregular, whitiſh, ſpotted with red, blue and lurid colours.

Native of Malabar, where it flowers in april and october, the flowers continuing two months, and a branch ſet in water will flower for a month [t].

23. Roots thick, like packthread. Leaves like Crinum or Squills, fleſhy, half a foot long. Stem two feet high, naked, ſurrounded by a few acute, very ſhort ſcales. Flowers ſnow-white, like thoſe of Orchis Suſannæ, the ſize of Narciſſus flowers; the two ſide petals are orbiculate, the three others are ovate: cowl three-leaved, the two ſide ones oblong, the middle haſtate, bifid, with two awl-ſhaped briſtles. Obſerved in the Eaſt-Indies by Oſbeck [u]; on branches of trees, on the coaſt of Java, alſo by Rumphius. The flowers are large, and odoriferous; lying in a room they do not wither for ſeveral days, and fill it with a moſt agreeable ſmell. On the iſle of Ternate none but princeſſes are allowed to wear this precious flower [x].

24. Roots filiform, ſtrict, whitiſh. Leaves broad-lanceolate, acuminate, keeled at the baſe, compreſſed, growing on an oblong, fleſhy, ſmooth, fibrous, ſucculent, compreſſed bulb, involved in membranaceous ſheaths. Spathe two-leaved, one leſs than the other, acuminate, at the baſe of the ſcape among the leaves. Scape from the middle of the bulb, ſolitary, round, erect, with a few minute ſpathes. Flowers terminating, four or five, large, ſubſeſſile. Petals linear, acuminate, reflex, yellowiſh. Nectary, lip heart-ſhaped, blunt, concave, dark-blood-red, ſtreaked with white at the baſe, yellow at the tip. Column three-cornered, ſpotted with red at the baſe, three-horned at the tip, bearing two pedicelled, bipartile anthers. Capſules oblong, acuminate, pendulous.

Native of the mountainous parts of Jamaica [y]. This is one of the few ſpecies yet introduced; we are obliged to Mr. Alexander Anderſon for it in 1786. It flowers here in january and february [z].

25. This is a native of America. Linneus ſets it down as the growth of both Indies, ſuppoſing it to be the Angræcum terreſtre primum of Rumphius, which Swartz aſſures us it is not, becauſe it is drawn without leaf-bearing bulbs, and is ſaid to grow on the ground. It is probably a ſpecies of Limodorum [a]. Loureiro has deſcribed a plant cultivated in the gardens of China and Cochinchina, as the E. tuberoſum of Linneus; but as he refers to Rumphius, and ſays that it is not paraſitical on trees, but grows on the ground, it may alſo be a Limodorum, or at leaſt is a different ſpecies from this.

26. Root fibrous. Plant little more than an inch

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[m] Jacquin.
[n] Swartz.
[o] Thunberg.
[p] Swartz.
[q] Act. upſ.
[r] Hort. malab.
[s] Sloane.
[t] Hort. malab.
[u] Linn. ſpec.
[x] Oſbeck.
[y] Swartz.
[z] Hort. kew.
[a] Swartz obſ.

high. Leaves diſpoſed like thoſe of Iris, even, acute, all radical. Scapes between each of the leaves ſolitary, the length of the leaves, with three or four minute leaflets ſcattered over them. Flowers terminating one or two, from a three-valved glume: the three upper petals ſpreading, oblong, the uppermoſt very ſmall; the two inner toothed: lip trifid, the ſide-lobes ſubcordate, the middle larger, bifid.—Or, according to Allamand, in mantiſſa—petals ovate-oblong, acute; upper lip of the nectary ampullaceous-tubular, emarginate, lower very large, ſinuate with four lobes on each ſide, oppoſite, equal. Capſule ſpherical, ſix-keeled.

Obſerved in Surinam by Dahlberg[b].

27. Root perennial, conſiſting of a few thick fleſhy fibres. Leaves radical, ſeveral, equitant, erect, clothed with ſome brown permanent ſcales at the baſe, rigid, rather ſharp-pointed, with a rough margin towards the top, channelled, nerved, ſmooth on both ſides, when dry becoming longitudinally ſtriated. Stalk growing on the outſide of the leaves, and not quite ſo long, erect, ſimple, brown, bearing from four to ſix flowers, and furniſhed with three or four alternate, ſheathing, acute, ſtriated, brown ſcales, and compreſſed towards the top. Flowers alternate, ſeſſile, a little drooping. Bractes ſolitary, reſembling the ſcales on the ſtalk, but ſmaller. Petals obtuſe, ſmooth, pale green marked with red longitudinal ſtreaks; three external and ſpreading, two internal, approaching each other, and a little ſhorter. Lip of the nectary as long as the inner petals, blunted, keeled underneath at the baſe, erect and ſomewhat criſped in the margins, marked on the upper ſide with two tubercles, which meet together and cover a longitudinal furrow, in front it is of a broad lanceolate figure, obtuſe, pale yellow elegantly ſpeckled with purple. Column of the fructification ſeparate from the nectary, and half the length of its lip, curved; hollowed beneath, and ſpotted with red, obtuſely keeled and reddiſh on the back, ſlightly three-cleft at the tip. Cover roundiſh, ſwelling, yellow, fixed by its baſe to the column, looſe above, hollowed behind. Anthers obſcurely two-lobed, yellow, pellucid. Stigma depreſſed. Germ an inch long, roundiſh, incurved, ſtriated, green. The flowers have a ſweet lemon-like odour, pungent but not ſtrong, moſt remarkable at night or on entering the hot-houſe in a morning. On account of this perfume, the plant is much cultivated in China[c].

Thunberg makes it a Limodorum, and Swartz thinks that it ſhould rather be referred to that genus, as ſeveral other ſpecies may probably be. Thunberg however afterwards referred it to this genus.

Loureiro remarks, that the nectary is not turbinate in this and his tuberoſum, and that there are ſeveral varieties, particularly with flowers of a pure white, much eſteemed for its very ſweet and delicate ſmell.

Native of China and Japan. Cultivated by the Marchioneſs of Rockingham[d], before 1792.

28. Flowers white. Common on walls and in hedges in Japan. Paraſitical.—Chevalier Thunberg, in his travels through Japan, obſerved it at Miſima, tied up in bundles, and hung out before a houſe. It can live ſeveral years without water or other nouriſhment, and yet grow and flower all the while[e].

29. Native of America. Swartz affirms, that the E. ophiogloſſoides of Jacquin is the ſame with his trigoniflorum. See n. 75. Dombey's ſpecimens, brought from Peru, agree with Plumier's figure.

30. Roots numerous, filiform, rigid, whitiſh. Stems aggregate, often united at the baſe, filiform, a foot high, erect, ſheathed, ſmooth. Leaf terminating, ovate-lanceolate, half the length of the plant, acuminate, entire, keeled, channelled at the baſe, compreſſed, ſmooth, thick, veined. Sheaths of the ſtem long, acuminate, ſtreaked, withering. Peduncles ſhort, two-flowered. Common ſpathe ovate, acuminate, compreſſed, gaping, emitting peduncles that are bent down, with nodding flowers, of a pale green colour. Corollas ſmall, acuminate, four-petalled: the two outer petals, which are the upper and lower, oppoſite, lanceolate, acute, patulous; the two inner lateral, linear, ſhorter, erect. Nectary of the ſame ſhape with the inner petals, but leſs, erect, channelled, pale; lip obtuſe, recurved. Column of the fructification round; at the top, in a hollow, two roundiſh anthers, covered with a two-celled lid. Capſules ovate, ſmall, acuminate, ſix-grooved, three-valved.

Native of the high mountains of Jamaica, on the trunks of old trees[f]; and in the thick woods of Martinico[g]. Cultivated at Kew in 1794.

31. Native of America.

32. Found at the Cape of Good Hope by Thunberg, paraſitical on the trunks of trees[h].

33. Stems ſeveral, a little divaricated, compreſſed, entirely clothed with leaves; which are alternate, ſheathing, embracing, of a long oval form, obtuſe, entire, ſomewhat reflexed at the tip and margin, obſoletely nerved, coriaceous, ſmooth on both ſides, dark green above, purple beneath. Flower-ſtalk erect, very long, ſimple, compreſſed, with many knotty joints, ſmooth, green, but entirely covered with brown membranaceous ſheathing ſcales; which are alternate, ſharpiſh, compreſſed, keeled and ribbed. Spike terminating, erect, forming a globoſe denſe head of many flowers. Bractes ſolitary under each flower, lanceolate, concave, acute, purpliſh green, one third the length of the germ. Flowers pale greeniſh purple, with a faint herbaceous ſmell. Petals ſpreading, of equal length, the innermoſt narroweſt, lower ones ſomewhat ſickle-ſhaped, pointed upwards. Lip of the nectary a little longer than the petals, concave, keeled, ſlightly five-lobed; the lateral lobes largeſt and roundiſh, the odd one very ſmall, ſhorter than the reſt, and appearing like a little tubercle. Column of fructification bent down, affixed to the lip, and but half as long, triangular with the angles purple, terminated in front by two lateral yellow cloſed lips, at the top abruptly truncated. Cover of the anthers roundiſh, flattened, yellow, fixed by its baſe to the above-mentioned lips, looſe in the upper part, cloſing the hollow truncated top of the column. Stamens placed in the cavity of the column behind the cover. Filaments very ſhort; anthers in pairs, yellow, pellucid. Germ ſlender, rather cylindrical than angulated, a little twiſted.

This approaches to E. ſecundum; from which it differs in having a column ſhorter than the petals, capitate and purpliſh or browniſh-green flowers, inſtead of violet ones, leaning all one way. The ſtructure of its flowers ſeems like thoſe of E. anceps of Jacquin; but in the latter the ſpike is lateral, and its flower-ſtalk much ſhorter than in our plant.

Native of Jamaica. Cultivated by the Hon. Mrs. Barrington, at Mongewell in 1791[i].

34. Root of a few thick fleſhy long and nearly ſimple fibres, ſlightly downy. Bulbs above ground, numerous, ovate, but little compreſſed, ſmooth, green, ſomewhat glaucous, an inch long. Leaves ſheathing, a little ſpreading, pointed, entire, nerved, very ſmooth, paler beneath; moſt numerous from the radical bulbs, clothed with oblong acute concave ſheathing ſcales; fewer from the ſummits of the bulbs. Stalks thrice as high as the bulbs, erect, thickly covered at the baſe with ſmaller, concave, bluntiſh, reddiſh ſcales, imbricated in a two-fold order; in the upper part roundiſh, ending in a ſimple cluſter of many flowers. Flowers on footſtalks, ſpreading, white, without ſmell. Pedicels angular, ſhorter than the germ. Bractes ſolitary, linear-lanceolate, acute, membranaceous, nearly equal to the flowers, withering. Petals nearly equal, a little ſpreading, ovate, bluntiſh, concave, white

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[b] Linn. ſpec. & mant.

[c] Smith ſpicil.

[d] Ibid.

[e] Thunb. jap. & trav.

[f] Swartz.

[g] Jacquin.

[h] Linn. ſuppl.

[i] Smith ſpicil.

and ſemipellucid. Lip of the nectary of the ſame colour and nearly the ſame form with the petals, except its having on each ſide a ſlight angle, which ſeems bent upwards. Columns of the fructification very obtuſe, pitcher-ſhaped, notched at the top, without any cover. Anthers on the ſummit two, ſeſſile, ſmall and yellowiſh. Stigma a tranſverſe chink, not very evident, under the anthers. Germ oblong, with three membranous pointed wings, between each pair of which, on the ſides of the germ, are two ſmall intermediate wings.

Native of Jamaica. It flowered in the garden of the Hon. Mrs. Barrington in february 1793: alſo in Kew garden about 1791[k].

35. Root of numerous branched fleſhy fibres, brown downy and divaricating. Bulbs ſeveral, above the ſurface, large, ovate, ſlightly compreſſed, ſmooth, green, with an unequal and ſomewhat furrowed ſurface. Leaves three or four from the top of each bulb, ſheathing, a little ſpreading, pointed, entire, ſmooth, dark green, not very rigid, waved in the margin. Flower-ſtalks three inches high, nearly erect, bearing one flower, rarely two, round, green, ſmooth; clothed with four or more ſheathing alternate ſcales, which are ovate, concave, green with a ruſty-coloured powdery down. Flower from the uppermoſt ſcale, a little drooping, about the ſize of Limodorum Tankervilliæ, inodorous. Petals lanceolate, obtuſe, ſomewhat ſucculent, ſlightly ſpreading, greeniſh, towards the tips of an olive brown; the two innermoſt rather the ſmalleſt; the two lowermoſt lengthened out at the baſe, and united into a ſhort blunt pouch. Lip of the nectary ariſing from the back part of the inſide of this pouch, unconnected with every thing above, ſomewhat ſhorter than the petals, covered on its upper ſide with an oblong yellowiſh deeply furrowed calloſity, inverſely heart-ſhaped in front; its margin is three-lobed, the lateral lobes ſmall, acute, entire, erect, thin and tranſparent, terminating one very large, of a ruſty brown, blunt, hollowed above, ſwelling below, pale and beautifully fringed all round the margin. Column of the fructification white, elongated at the baſe, connected by its back to the pouch of the corolla, and by its fore part at the bottom to the lip of the nectary; incurved and blunt at the top; behind obtuſely keeled; flat and with two ſlight furrows before. Cover pointed, obſcurely three-celled within. Stamens red, cloſe together. Anthers two on each filament, obovate, yellow. Stigma large, very much excavated. Germ ſomewhat longer than the pouch of the flower, green, nearly cylindrical, with ſix furrows.

This is the moſt diſtinguiſhed of the ſpecies hitherto introduced among us, not only on account of its ſize, but its ſingularity. Neither this nor the preceding occurred to Dr. Swartz, who inveſtigated the iſland of Jamaica with no leſs ardour than accuracy. It is to be hoped therefore that more new ſpecies may hereafter be diſcovered there.

Native of Jamaica. It flowered in april 1791, in the collection of the Hon. Mrs. Barrington; and in Chelſea garden the year following[l].

36. to 84. All theſe ſpecies were obſerved by the indefatigable Swartz in the Weſt India iſlands, chiefly in Jamaica. Moſt of them are new, but ſome had been found before by Profeſſor Jacquin; and five by Sloane, Browne, *&c.*

36. This plant hangs down from the branches of trees and creeps up others to forty feet high. Stem jointed at the diſtance of about five inches, and at every joint fibres three or four inches long, catching hold by their broad viſcid end of any part of a tree they come near; it is about three quarters of an inch in diameter, very ſmooth, round and deep green, ſolid, juicy, and ſometimes branched: here and there, oppoſite to the tendril, comes out a thin membranaceous leaf, from a broad beginning ending in a point.

Native of Jamaica[m], and Hiſpaniola[n].

37. Plant a foot and half high, leafy, paraſitical. Roots fibrous. Branches compreſſed a little, ſmooth, aſh-coloured. Leaves oblong, obtuſe, coriaceous, rigid, veinleſs, entire, ſhining, ſheathing at the baſe, dirty green, alternate, an inch and half long. Spathes cordate-ovate, acute, converging. Spikes looſe, diſtich, an inch and half long, four-flowered or thereabouts. Flowers ſmall, inelegant, greeniſh; petals ſomewhat rigid, equal in length, the three outer lanceolate, the two inner linear. Lower lip of the nectary oblong-cordate, acuminate, concave, rigid, the length of the petals, of which it occupies the place of the third interior one. Anthers roundiſh. Germ a little longer than the corolla. The reſt as in E. lineare.

Native of Martinico[o], and Jamaica.

38. Native of Jamaica[p]. Cultivated at Kew in 1794.

39. Swartz thinks it probable that his umbellatum may be the ſame with the difforme of Jacquin, which he thus deſcribes.

Paraſitical, ſmooth, ſeldom a foot in height. Roots round, fibrous, aſh-coloured, numerous. Stems round, leafy, commonly horizontal or pendulous. Leaves oblong, coriaceous, pale green, ſheathing, clothing the whole ſtem, alternate, an inch or an inch and half in length, moſtly difform. Spadix very ſhort, concealed within the ſinus of the terminating leaf, five-flowered or thereabouts. Spathes very few. Flowers ſomewhat fetid, greeniſh white, rigid.

Common in the vaſt woods of Martinico[q], and in Jamaica,

40. Native of Jamaica. The anceps of Jacquin is probably a variety of E. fecundum, n. 7[r].

41. Paraſitical, a foot high. Roots fibrous, aſh-coloured, round, numerous. Stems ſimple, round, leafy, ending in a very looſe, diſtich ſpike, four-flowered or thereabouts. Leaves coriaceous, rigid, ſhining. Spathes very large, coriaceous, rigid, almoſt the length of the flowers, which are inelegant, ſmall, rigid and thick: petals ſpreading very much, the three outer ovate, the two inner lanceolate and a little ſhorter. Lower lip of the nectary cordate-roundiſh, blunt with a ſmall point, flat, upright, the length of the petals, with a toothlet on each ſide at the baſe. Anthers ſimple. Germ oblong, incurved, three-cornered. The reſt as in E. lineare.

Native of woods in Martinico[s], and Jamaica.

42. to 45. Natives of Jamaica[t]. Of theſe and others we lament that we have not deſcriptions from the accurate hand of Swartz.

46. Roots fibrous, round, aſh-coloured, numerous, paraſitical. Stems ceſpitoſe, quite ſimple, two or three inches high, round, ſmooth, leafy, ending in a ſpadix bearing one flower, ſeldom two, very ſeldom three: whence there are very few ſpathes. Leaves awl-ſhaped, acute, ſmooth, ſhining, ſomewhat rigid, ſeſſile, alternate, an inch long. Flowers ſmall, ſcarcely coloured, erect, of the ſame ſtructure with E. lineare, except that the germ is twice as long as the petals. Capſule ſix-grooved, the ſize of a ſmall pea.

Native of the woods of Martinico[u], and Jamaica[x].

47, 48. Natives of Jamaica[y].

49. Paraſitical and the largeſt of its ſort. Roots large. Leaves many, long, narrow, ſmooth, dark green, ſomewhat like thoſe of our common white Lily. Stalk round, tough, brown, crooked, ſix feet high, with joints at every eight or nine inches diſtance, where are branches ſtanding ſtraight out, with ſeveral flowers on peduncles an inch long. Petals ferruginous ſpotted[z].

Jacquin refers Sloane's plant here deſcribed to his altiſſimum. Swartz thinks that the carthagenenſe of Jacquin may poſſibly be the ſame with his undulatum. Jacquin thus deſcribes it.

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[k] Smith rar. [l] Ibid. [m] Sloane. [n] Swartz.

[o] Jacquin. [p] Swartz. [q] Jacquin. [r] Swartz.
[s] Jacquin. [t] Swartz. [u] Jacquin. [x] Swartz and Jacquin.
[y] Swartz. [z] Sloane.

Paraſitical, with the habit of Aletris guineenſis. Roots round, whitiſh. Leaves radical, lanceolate-oblong, acute at both ends, quite entire, ſmooth, coriaceous, green on both ſides and variegated with black dots, a foot long, two inches wide, few. Scape round, ſlender, browniſh red, a foot and half high, racemed at the top. Peduncles an inch long, alternate, an inch and half diſtant from each other, the upper ones one-flowered, the loweſt five-flowered. Spathes lanceolate, membranaceous, very ſlender and ſhort at the joints, and ſubaxillary at the peduncles and flowers; theſe are handſome, with whitiſh petals ſpotted with ferruginous purple; upper lip of the nectary pale purple, lower of the ſame colour with the petals, with a violet-coloured diſk. Anthers orange. Fruit an inch and half long[a].

Jacquin's plant is a native of Carthagena, in thick woods; that of Swartz, Sloane, and Browne, of Jamaica.

50. Swartz ſuſpects that his variegatum may be the ſame with the tetrapetalum of Jacquin, who deſcribes it thus.—It is an elegant paraſitical plant. Roots round, aſh-coloured, fibrous. Leaves radical, awl-ſhaped, acuminate, keeled, ſomewhat rigid, coriaceous, obtuſely angular on the back, with acute-angular margins, pale green, ſometimes rugged with ruſt-coloured dots, ſometimes without and quite ſmooth, from an inch and half to ſix inches in length. Scape round, ſlender, from a foot to two feet in length. Spathes lanceolate, ſmall, at the joints and peduncles. Peduncles about ten, one-flowered, forming a handſome raceme pointing one way. Flowers ſweet-ſmelling, elegantly variegated with purple, violet, yellow and red. Petals four, obovate-acuminate, unequal, ſpreading much, the lower bifid at the tip, the other three repand; of which the uppermoſt is a little ſhorter than the reſt. Diſk of the nectary oblong with a cruciform bump. The lateral ſegments of the lower lip obovate and obtuſe. The reſt as in E. carthagenenſe.

Native of the woods in Jamaica[b], and Hiſpaniola[c].

51. Native of Jamaica and Hiſpaniola.

52. to 55. Natives of Jamaica.

56. Native of Hiſpaniola.

57. to 61. Natives of Jamaica[d]. Of all theſe we have no deſcription.

62. This is an elegant paraſitical plant. Roots round, fibrous, aſh-coloured, numerous. Leaves acute, enſiform-oblong, veinleſs, ſhining, quite entire, thickiſh, an inch wide, and half a foot long, keeled at the baſe, in other parts flat, each ſpringing from a joint, or an ovate, compreſſed, ſmooth tuber, ſometimes as big as a gooſe's egg, which is placed on the baſe of another root-leaf or two, like the others. Between this and the joint ariſes a ſolitary, round, ſmooth ſcape, of a ruſt-colour, ſlender, inclined, four feet high, racemed at top, clothed at the peduncles and joints with membranaceous, lanceolate, aſh-coloured ſpathes. Peduncles two or three-flowered, alternate in two rows. Flowers without ſcent, yellow with brown ſpots, numerous. Petals oblong, diſtinct, acute at both ends, waved, nearly equal. The middle ſegment of the lower lip of the nectary is ſquariſh, and the whole is yellow without ſpots. The reſt as in E. carthagenenſe.

Native of the woods of Martinico[e]. Cultivated at Kew in 1794.

Jacquin mentions another, which he names E. violaceum, from its beautiful violet-coloured flowers. He found it on a very tall arboreous Cereus, and had not an opportunity of examining it particularly; it appeared to him to have the habit of the ſpecies thus deſcribed.

63. Native of Jamaica. Introduced here in 1786, by Hinton Eaſt, Eſq. It flowers in october[f].

64. This has many white thick fibres like thoſe of Leeks, or the tendrils of Ivy, taking firm hold of the bark of trees, and matted together; theſe ſend up one thick greeniſh roundiſh compreſſed bulbous or tuberous leaf, of an inch diameter, covered with ſome brown withered filaments. From the top of this come two ſmooth ſtriated hollow hard pale green leaves, three inches long and one inch broad, between which ſprings out a naked brown jointed round ſmooth ſtalk, about a foot high, near the top of which ſtand ſeveral long reddiſh purple flowers, very beautiful.

Native of Jamaica, on the Ebonies and other trees in the Savanna woods, plentifully[g]. Cultivated at Kew in 1794.

65. Native of Hiſpaniola.

66. to 69. Natives of Jamaica[h].

70. Roots ſmall, branched, fibrous. Stems pendant, ſimple. Leaves alternate, numerous, ſmall, reflex, quite entire, ſubtomentoſe, ſtem-claſping. From the axils of the leaves flowers ſolitary, on very ſhort peduncles. Corolla of a coral red colour, the upper and the two lower petals of the ſame ſize and figure; the two lateral ones larger and wider; nectary ſmall, three-lobed, the two upper lobes rounded and concave, the lower emarginate. Capſule red, ovate, warted.

Native of Guiana, on the trunks of old trees, which are ſometimes quite covered with it.

71. to 74. Natives of Jamaica[k].

75. This little paraſitical plant is only about four inches high. Roots fibrous, whitiſh, numerous. Leaf cauline, acute, quite entire, coriaceous, rigid, veinleſs, flat, ſhining, two or three inches long. From the ſinus of this come out ſucceſſively three or four ſpadixes, racemed, ſimple, ſlender, erect, a little longer than the leaf, having about ten flowers, and clothed at the baſe with a few ſpathes, and ſmall floral ones. Flowers ſmall, directed all to the ſame ſide, without ſcent, on ſhort peduncles, of a dirty yellow colour.

Native of the mountain woods in Martinico[l], and Jamaica[m].—According to Swartz, Jacquin's ophiogloſſoides is not that of Linneus, but this ſpecies.

76. Native of Jamaica.

77. Native of Hiſpaniola.

78. to 83. Natives of Jamaica.

84. Native of Hiſpaniola[n].

Of all theſe ſpecies we expect deſcriptions from the accurate hand of Dr. Swartz, the firſt diſcoverer of them.

85. Paraſitical, a foot high. Roots fibrous, whitiſh, thick, round, long. Leaves radical, two, three, or four, lanceolate, acute, coriaceous, flat, ſtiffiſh, quite entire. Scape ſimple, compreſſed, erect, ten-flowered or thereabouts. Common peduncles few, lateral, few-flowered. Flowers ſmall, ſeſſile.

Native of Martinico.

86. Paraſitical. Roots round, fibrous, numerous. Leaf round, acute, ſlightly grooved within, ſmooth, fleſhy, at bottom a finger in thickneſs, in length from one to two feet, but ſometimes four feet, ending at the baſe in a knot or roundiſh tubercle, permanent after the leaf is decayed. Scape round, two feet long or more. Spathe lanceolate. Peduncles many-flowered. The natives call it *Cebolletas* (Cibouls or little bulbs), and make uſe of the tubercles triturated with ſalt in violent contuſions, fractures, *&c.* The whole plant is void of ſmell.

Native of Carthagena in woods, eſpecially on the coaſt[o].

Theſe two plants are not mentioned in the Syſtema vegetabilium, or in any other book that I have ſeen.

87. to 109. Theſe twenty-three ſpecies are natives of the Eaſt Indies, where they were diſcovered by Koenig, and are deſcribed by him at great length, as may be ſeen in the ſixth faſciculus of Retzius's obſervations. Moſt of the ſpecies are new ones, not mentioned by any other author. A few of them

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[a] Jacquin. [b] Ibid. [c] Swartz. [d] Ibid. [e] Jacquin. [f] Hort. kew.

[g] Sloane. [h] Swartz. [i] Aublet. [k] Swartz. [l] Jacquin. [m] Swartz. [n] Ibid. [o] Jacquin.

however are probably deſcribed and figured by Rumphius. Neither Koenig nor Retzius have given any diagnoſes or ſpecific characters; inſtead of theſe I have ſubſtituted for the preſent the deſcriptions of the leaves.

87. Peduncles axillary, almoſt erect, ſometimes pendulous, round, ſmooth, jointed, woody at the joints bracted undivided half way, a foot and half long, within the raceme angular. Pedicels ſpreading very much, ſcattered, bracted at the baſe, round, ſmooth, white, the length of the flowers. Bractes oblong, preſſed cloſe, acute, ruſt-coloured. Petals united at the baſe to the nectary, flat; two lateral, ſpreading very much, ovate, broad, acute, larger; three inferior obovate, the middle one largeſt; all ſnow-white with a large roſe-coloured ſpot at the end. Nectary inflated, rounded, three-parted, aſcending, horned in the upper part, recurved, much larger than the corolla: ſegments of the inferior or inflated apex lateral, obliquely ovate, toothed at the edge, larger, ſnow-white; the upper linear, narrow, two-toothed and incurved at the tip, coloured, roſe-purple, ſomewhat more rigid; the lower divided horizontally to the middle: the lower part of the nectary in front is an erect truncated body, rounded on the outer ſide, concave on the inner, with a large hollow filled with a whitiſh honey juice; at the apex is a heart-ſhaped ſcale, concave, keeled, reſembling the head of a fowl, below this are two large globular yellow anthers, adhering to the truncated body, ſo glutinous that they may be drawn out into threads, divided on the outer ſide by a gaping chink. Style none: the ſtigma two approximating ſcalelets, below the tip of the ſcale and covering the anthers, faſtened to the truncated body of the nectary, ſilky-ſubtomentoſe, and very ſmall. Silique club-ſhaped triangular, the angles acute, attenuated at the baſe, truncated at top, thick, crowned with the withering corolla, ſmooth and more than an inch in length.

88. Swartz has given the ſame name to an Amecan ſpecies: ſee n. 50.

Roots of the former year, bulbs above ground, erect, oblong, narrow, compreſſed a little, clothed with four or more alternate membranaceous ſcales, an inch long, ſcarcely three lines broad, green, putting out below horizontal filiform flexuoſe whitiſh fibres. Root of the preſent year coming out laterally from the baſe of the former, ſcarcely bulbous, covered by three oblong acute ſheaths, ſpreading, membranaceous and purple at top. Stem none. Leaves in threes, variegated with green and blood red, with the edges white and red. Scape erect, a palm high, ſolitary, (ſeldom two) angular, ſtriated, ſmooth, coloured, terminated by an oblong raceme. Peduncles ſimple, ſubalternate, ſpreading very much, roundiſh, club-ſhaped, ſtriated, coloured, ſcarcely the length of the flowers. Spathes or bractes ſolitary, faſtened below the peduncles, pendulous, preſſed to the ſcape, linear-acute, ſmooth, membranaceous, of a ſort of roſe colour, the length of the peduncles. Petals ſpreading very much, oblong, acute, the edges rolled back, membranaceous, roſe-coloured, the two lateral inferior ones ſomewhat narrower, the two upper ones and the loweſt equal. Nectary margined; margin flat, the upper broader, toothletted, divided at bottom, ſegments diſtant, lanceolate, acute, membranaceous, lemon-coloured. Inner part vaulted, covering the proper turbinated nectary or truncated body, over which is a heart-ſhaped, appreſſed, white ſcalelet, convex on the outſide, and within having two cells incloſing the anthers, which are ſeſſile, faſtened to the truncated body, oblong, divided by a little groove, yellow. Silique club-ſhaped, compreſſed a little, angular with deeper grooves.

89. Roots capillaceous numerous flexuoſe whitiſh. Stems many crowded roundiſh flexuoſe jointed perennial ſcarcely a ſpan high. Racemes terminating ſimple. Flowers remote. Sheaths two or more, oblong, membranaceous, white and roſe-coloured mixed. Petals four; loweſt navicular, large, deſcending apex horned and a little blunt, aſcending broad, three-parted, the middle ſegment lanceolate, narrower, the ſide ones broader; upper petal inſerted in the horned apex, erect, a little incurved, club-ſhaped, flat, emarginate and a little criſped at the top, white, the length of the lower one; two petals within the ſegment of the lower petal at the baſe of the nectary, aſcending a little, lanceolate, equal in length to the ſegments of the lower petal, whitiſh. Nectary a truncated body, ſemicylindric, ſhort, having a large hollow in the fore part, rounded behind, and a rim running to the horn on each ſide; hollowed at top with an orbicular convex ſcalelet, divided by a longitudinal partition into two cells for the anthers, the whole ſnow-white. Filaments very ſhort and ſlender. Anthers ſubglobular with a little groove, large.

90. Roots capillaceous, flexuoſe, white, paraſitical. Stems ſeveral, round, naked a little way above the root, the reſt covered with oblong, tubular, acute, ſtriated, rigid, whitiſh ſcales. Leaves quite entire, rather fleſhy, ſcarcely the ſize of Hypericum leaves, but narrower. Racemes ſmall, axillary, peduncled, reflex, ſcattered, frequent towards the top, few next the root, ſhorter than the leaves. Peduncles axillary, ſimple, ſolitary, round, ſheathed: ſheaths oblong, acute, ſhort. Spathe one-leafed, at the baſe of the germ, faſtened to the peduncle, ovate, acute, recurved, preſſed to the peduncle, membranaceous, ſmooth, ſcarcely the length of the germ. Upper petal of the corolla erect, ovate-lanceolate, acute, a little concave, whitiſh; ſecond and third faſtened to the ſide of the nectary, erect, lanceolate, a little leſs than the former; the fourth horned at the baſe in front, the horn round and inflated, aſcending towards the ſuperior petal and two-parted, the ſegments ſpreading in two rows, recurved at the tip, ovate, acute, ſhorter than the flower; the fifth faſtened to the inſide of the horn of the fourth, oblong-club-ſhaped, riſing to an obtuſe apex, a little recurved, with a very ſmall toothlet in the middle, a little ſhorter than the ſegments of the fourth petal. Nectary a truncated erect body, a little compreſſed, terminated by double ſcalelets, which are erect, one at the back of the nectary, the other in the tranſverſe partition, faſtened above the truncated diſk, cordate-acute. Filaments ſcarcely any. Anthers ſix, club-ſhaped, yellow, ſubpellucid, three in each cell. Silique club-ſhaped, angular, grooved, a little incurved, the ſize of a grain of Rie, or hardly leſs than a grain of Wheat. The whole plant is ſcarcely a foot high, the leaves are ſmooth, and the flowers are white.

91. Roots fibrous, filiform, hirſute, white, fixed in the ground. Scape erect, clothed with ſheaths and leaves, round, grooved, acute, red, with recurved linear-acute ſmooth green long ſtipules ſcattered over it, a foot high or more. Sheaths ovate acute quite entire keeled nerved membranaceous, the lower ones broader, ſhorter, greeniſh with red nerves. Spike erect cylindrical, cloſely ſet with blood-red flowers, a palm and half in length, the thickneſs of the middle finger. Peduncles very ſhort, ſingle, ending in erect germs, a little recurved at the tip, club-ſhaped, ſtriated, coloured, with keeled criſp and toothletted ſtreaks. Spathe one-leafed, faſtened to the ſcape below the peduncle, recurved and preſſed cloſe, linear acute, quite entire, ſmooth, narrow, twice as long as the flower, a little coloured. Petals irregular, the three lower ſpreading, curved towards the anterior ones, linear, acute, rolled back on the edges, ſmooth on both ſides, a little broader than the intermediate ones; the two upper petals faſtened to the germ, and with the former curved towards the anterior part, obliquely ovate, convex at the baſe, flat behind, ſpreading a little; a little ſhorter than the former. Nectary a truncated body at the baſe of the back, lobed; lobe aſcending obcordate; from the ſinus of the heart proceeds a horned body half ſurrounding the truncated body, double its length, fleſhy and of the ſame colour. Proper nectary erect, cylindric ſomewhat

compreſſed, ſmooth, obliquely truncated : the diſk or apex hollowed. Scalelet faſtened to the anterior margin, which is ſingular ; it is orbicular, ſmooth, whitiſh, membranaceous, concave within. The two anthers are obovate or club-ſhaped, yellow, ſubpellucid, connate at the baſe, very ſmall and much reſembling thoſe of the Contortæ. Style none, except the nectary, at the back of which, a little below the diſk, is an oblong labiate cleft, the lips membranaceous and white. Silique obovate, angular, rugged, larger than a grain of Barley, crowned by the permanent apex of the nectary.

92. This is ſuppoſed to be *Herba Supplex minima* of Rumphius. It grows on trees by capillaceous fibres, a little compreſſed. Stem none. Leaves from five to ſeven, the length of the little finger. Spikes terminating, naked at the baſe, filiform, longer than the leaves, ſcarlet. Scape below the flowers round ſmooth, with a few bractes, among the flowers marked with prominent ſtreaks. Spathe ſolitary, faſtened to the ſpadix below the germ, almoſt erect, lanceolate, acute, ſmooth, membranaceous, longer than the germ, a little coloured. Petals ſix, three outer ſpreading, linear-lanceolate, ſmooth, ſemipellucid, leſs coloured, two anterior and one poſterior, two interior lying over the two anterior ones, a little broader, more concave and coloured ; the ſixth poſterior erect, at the baſe broad and concave. Nectary truncated, half ſurrounding, ending above in an obcordate lobe. The truncated body is very ſhort and ſmall, covered by a white ſcalelet, containing two very minute glandular anthers. Stigma, a very ſmall oval aperture at the back of the truncated body below the tip of the diſk. Silique globular, crowned with the truncated body, having grooves with acute three-valved edges.

93. Paraſitical, by means of filiform branched ſmooth green fibres. Stems ſimple pendulous jointed leafy flexuoſe ſheathed thicker than the roots, two feet long or rather more and a little more ſlender at the baſe. Leaves ſcarcely a palm and half in length and an inch in breadth, bright green. Sheaths tubular ſmooth naked, quite entire at the mouth, the length of the interſtices, ſcarcely an inch in length, coriaceous. Flowers above the leaves, uſually ſolitary, but ſometimes ſeveral, ſpreading, ſeſſile, the ſize of thoſe in Orchis pyramidalis. Spathes heart-ſhaped, ſmall, ſomewhat fleſhy, yellowiſh, caducous. Petals lanceolate, yellow with large darker ſpots ; the two upper ones aſcending, the middle one ſpreading from the lower petals, the two lateral ones larger, more reflexed towards the back, narrower, all concavo-convex. Nectary in the diſk of the flower, two-parted ; upper lip ſpreading, haſtate, the upper lip recurved, and between the lower ſegments two glands connate above, below running to the other ſide, purple-roſe-coloured, horned behind, the horn ſcarcely deſcending, conical, ſharpiſh, white, half the length of the germ. Filament ſingle, faſtened within the apex of the lip, flattiſh, white, incumbent and equal to it in length. Anther, two globules divided by a groove ; in the cavity of the truncated body, lemon-coloured. Style none. Stigma a cavity below the lip and diſk of the truncated body. The decurrent margins within the haſtate lip form an orifice in the horn, and are ſomewhat fleſhy, rigid and coloured, uſually roſe-colour or purple. Silique linear, three-ſided with the angles winged, incurved, aſcending ſtiffly, longer than an inch. It ſhould be remarked, that when the plant is pendulous, the parts above deſcribed are reverſed.

94. Root capillaceous few white paraſitical ſhoots in bundles preſſed cloſe to the bark, little branched, ſometimes jointed, unequal, a ſpan long, hoary, green. Racemes half an inch long, green-ruſt colour. Spathes heart-ſhaped, ſolitary, alternate, ſeſſile, acute, fleſhy, ſmall, permanent, from five to eight. Flowers alternate, ſpreading. Petals faſtened to the nectary, erect, linear-lanceolate, acute, a little longer than the nectary, equal, yellow. Nectary truncated at the baſe, ſemicylindric, horned on the upper ſide at the baſe : horn aſcending, ovate, inflated, ſomewhat compreſſed, a little longer than the truncated body ; in the diſk a pedicelled, concave, two-celled, roſe-coloured ſcalelet, membranaceous in front, acute, white, beaked, very ſmall. Silique round, incurved, ſmooth, ſcarcely an inch long.

95. Roots filiform very long whitiſh green paraſitical. Stem with the long roots commonly pendulous, roundiſh, ſheathed with leaves, ſimple, ſhort. Leaves ſcarcely a ſpan in length. Spikes oppoſite to the leaves, peduncled, ſpreading, flat, ſerrate, the length of the leaves, rather remote. Spathes bifarious, alternate, boat-ſhaped, compreſſed, acute, fleſhy, rigid, permanent, forming a ſerrate ſpike, one to each flower. Petals linear-acute, pendulous ſmooth, narrow, yellow. Helmet of the nectary ſcarlet, incumbent, inflated, with two lobes ſpreading a little, having an almoſt erect horn at the top, and below the horn on the inner ſurface, a tongue-ſhaped, retuſe, ſmall, aſcending lobe, faſtened to the diſk : the truncated body ſemicylindric with a concave tip, white, membranaceous, oblong, obtuſe, incloſed. Anthers ſolitary, oblong, obtuſe, grooved, large, white.

96. Roots filiform, white, paraſitical. Stems at the threads of the roots pendulous, round, ſheathed with leaves, ſhort. Leaves bright green. Spikes ſhort, oppoſite to the leaves, ſpreading very much, peduncled, club-ſhaped. Peduncles roundiſh, ſmooth with a few coloured dots, woody, ſcarcely the length of the leaves ; bractes ſolitary, preſſed cloſe, heart-ſhaped, ſmooth, rigid, towards the middle of it. Spathes ſeveral, alternate, ſomewhat ſpreading, heart-ſhaped, acute, compreſſed at the back, ſmooth, coriaceous, one to each flower. Corolla ſix-petalled, or more properly one-petalled ; five ſegments ſpreading, linear-lanceolate, nearly equal, yellow, long ; the ſixth galeate, inflated, incumbent on the nectary, horned at the tip ; horn erect, oblong, rounded, bearded, white, the reſt orange-coloured. Nectary truncated, erect, concave, ovate at the tip, ſubmembranaceous, white, covered with an oblong obtuſe concave white membrane, containing a ſolitary yellowiſh anther. Style club-ſhaped, ſmall, within the hollow of the nectary, in ſome ſpecimens. Silique filiform, ſtriated, with a groove on each ſide, ſmooth, longer than a palm, and one line in diameter.

97. Roots filiform ſmooth white paraſitical. Stems ſimple erect round ſmooth ſheathed ſhort. Leaves a ſpan long. Peduncles next the roots, alternate, ſpreading very much, round, ſmooth towards the middle, reddiſh, having a heart-ſhaped appreſſed ſolitary bracte, and being terminated by a round ſpike much ſhorter than the peduncle. Spathe one-leafed ſuperior heart-ſhaped broad ſpreading at the tip, ſmoothiſh, fleſhy, permanent. Petals five lanceolate, ſomewhat ſpreading, equal, ſnow-white ; ſixth galeate, oppoſite to the nectary at top, inflated at the back, lobed on both ſides at the edge, lobes approximate ſomewhat erect at the tips ; orange-colour, horned at the tip ; horn erect, oblong, a little thicker at the tip and thence club-ſhaped, tomentoſe, yellow. Nectary in the diſk of the flower ſurrounded by the lower petals, ſemicylindric, obtuſe, ſmooth, ſnow-white with the edge of the blunt apex of a moſt elegant carmine colour : apex covered by a ſuborbiculate convex ſcalelet ; this is membranaceous, growing cloſe to the back of the margin of the nectary, white tinged a little with roſe colour. Anthers two ſeſſile on the truncated concave body, incloſed in the ſcalelet, yellow. Silique filiform ſmooth roundiſh, with a groove on each ſide, crowned with the truncated body which is ſometimes incurved, narrower than the leaves.

98. Roots filiform, branched, ſmooth, green, paraſitical. Peduncles ſeveral, round, woody, ſheathed, jointed. Bractes double at the apex of the germ, ſubſeſſile, oppoſite, ſpreading very much, ovate-lanceolate, ſharpiſh, quite entire, fleſhy, ſmooth, a little ſhorter than the germ. Inſtead of a calyx there

are ſhort white tubular ſheaths preſſed to the tube. Corolla monopetalous irregular: tube erect capillaceous, with hairs ſcattered over it, ſnow-white, long: border double, lower four-parted; lower ſegment boat-ſhaped ſpreading larger; lower apex blunt four-parted; two lateral ſegments aſcending from the tips of the larger border, acute, two within thoſe tips towards the tube faſtened to the truncated nectary, erect, lanceolate, acute, the length of the former: the other apex horn-ſhaped, aſcending, a little inflated, round, much narrower than the other and longer. Anthers ſemiglobular, double, lemon-coloured, incloſed in the cells of the nectary. Silique linear-oblong, angular, ſtriated, a little incurved, the length of the peduncle. Sometimes the lower border is five-parted to the nectary, and then the middle ſegment is broader, the lateral ones narrower.

99. Roots paraſitical filiform round, clothed with ſcales, flexuoſe, from one bulb to another the thickneſs of a gooſe-quill, putting out briſtle-ſhaped thickiſh fibres, eſpecially below the bulbs, of a cheſtnut colour. Bulbs above the roots almoſt erect ſeſſile obovate compreſſed wrinkled, terminated by leaves, ſcarcely the ſize of a hen's egg. Apex of the root club-ſhaped, jointed, terminated by ſheaths and leaves alternate bifarious compreſſed. Scapes ſolitary from the baſe of the bulb, erect, with ſix or ſeven alternate ovate and oblong ſheaths at the baſe cloſely imbricate in two rows: the lower ones ſhort broader, the upper ones more diverging longer acute, round, with a cheſtnut-coloured nap. Bractes ſolitary or two alternate towards the middle of the ſcape; they are a foot long and not ſo thick as a gooſe-quill. Flowers racemed, diſtich, ſubalternate, peduncled. Peduncles ſpreading, round, covered with a cheſtnut nap, ſhorter than the ſpathes. Bractes preſſed cloſe, lanceolate, acute, concave, membranaceous, whiter than the ſcape, ſcarcely the length of the ſcapes. Spathe one-leafed below the peduncle faſtened to the ſcape, preſſed cloſe to the germ, lanceolate-oblong, flat with the edges curved back, ſeven-nerved, ſubvilloſe keeled on the back, fleſhy, red-ruſt-colour. Corolla irregular, conſiſting of doubled petals; the outer monopetalous, navicular, aſcending; anterior apex rounded, undivided, poſterior aſcending, three-parted; the two lateral ſegments obliquely lanceolate, a little broader, decurrent towards the anterior tip, the middle one lanceolate, the outer ſurface of all with a cheſtnut-coloured nap, the inner ſmooth, with very few hairs ſcattered over them: petals interior three; the upper faſtened by its anterior tip to the nectary, decumbent, with the other tip aſcending within the outer ſegments, oblong, concavo-convex, before the tip a little narrowed, rounded at the tip, the whole white except at the end which is ſcarlet: the two other petals are faſtened laterally to the back of the nectary, thence they are erect, lanceolate, ſmooth, white, the length of the outer ſegments but narrower. Nectary a truncated body, ſemicylindric at the baſe, the length of the flower, decurrent, thence aſcending, only half the length of the petals; ſcalelet ſemiglobular, two-celled on the inferior ſurface, covered, concave. Anthers double glands, faſtened to a filament on the edge of the back, within the cavity of the nectary, covered by the cells of the ſcalelet, yellow, ovate. Silique erect, a little incurved, club-ſhaped, round, alternately ſtreaked with hairs and naked lines, crowned with the permanent corolla, liver-coloured.

100. Roots filiform ſlightly complicated, a little flexuoſe, ſmooth, whitiſh green, very long. Stem ſcarcely any. Leaves the length of the middle finger and narrower than the little finger. Scape from the axil of the ſheath of the lower leaf laterally curved, ſpreading very much, ſmooth below the middle, cloſely ſurrounded at the baſe by ovate acute obſolete ſhort ſheaths, an inch long. Spike ſingle, ſeldom three-parted or double at the baſe, longer than the peduncle; rachis ſubflexuoſe, round, ſmooth; each flower ſpreading, ſmall, yellow. Spathe one-leafed, preſſed cloſe to the germ, ovate, acute, concave, ſmooth, green, margined, half the length of the germ. Corolla ſix-petalled, faſtened to the germ below the nectary: the two lateral ones are obliquely ovate, erect, ſmooth, yellow, three ſurrounding the back of the nectary, erect, of theſe the two more lateral ones are lanceolate, the third outer one is broader and ovate; all equal in height; the ſixth anterior towards the nectary incumbent, aſcending a little at top, rounded, the height of the former, ſometimes with three toothlets, margined, convex, having a keel within running towards the horn: inferior apex deſcending, horned, rounded, ſhorter than the germ. Filament ſingle faſtened to the truncated body, flat, membranaceous, white, ſhort. Anthers globular double pale, in the cavity of the nectary incumbent. Scalelet obcordate, divided by partitions, white, faſtened to the back of the nectary, formed of a very tender membrane, covered. Nectary truncated, ſemicylindric, concave at the tip then decurrent, white. Stigma, a large rounded aperture below the tip of the truncated body. Silique oblong, angular.

101. Roots ſimple filiform ſlender flexuoſe ſcarioſe hoary-green, faſtened to the bark of the Mangoſtan tree. Stems three or more, ſometimes but ſeldom above a foot long. Spikes terminating ſolitary peduncled, cylindric, acute, reſembling ſpikes of wolf's-claw Moſs (Lycopodium) but leſs thick, two inches long. Peduncle ſheathed at the baſe with double appreſſed leaflets, round, covered with heart-ſhaped ſcalelets ciliated at the edge, ſhort. Flowers ſeſſile cloſely approximating, covered with heart-ſhaped ciliate appreſſed membranaceous pale green caducous ſpathes. Corolla ſix-petalled, unequal, faſtened to a coloured germ; the uppermoſt petal ſpreading very much, preſſed cloſe to the ſpike, ovate, ſometimes obcordate, concave; the two upper lateral ones reflex towards the back of the upper one, ovate, ſmaller, the two lower lateral ones more ſpreading, incumbent on the lower, ovate, acute, very ſmall, a little thicker and more coloured; the lower petal flat, heart-ſhaped, a little leſs than the uppermoſt: the whole corolla orange-coloured. Filaments none; the two anthers included in the cavity of a very ſmall whitiſh truncated nectary, covered with an orbicular concave lid, divided by a membranaceous whitiſh partition; oblong, callous, more coloured than the corolla. Germ clubſhaped, with very ſmall ſtreaks, of the ſame colour with the flower: ſtyle none: ſtigma over the truncated body, divided by a membranaceous partition into cells for the anthers. Nectary a little oblong cavity, callous at the edge, faſtened to the upper petal, and of the ſame colour. Silique obovate. Obſerved by Koenig at Malacca, the fifth of ſeptember 1779, on the Tamarind.

102. Roots in bundles, filiform, flexuoſe, paraſitical. Stems creeping, filiform, unequal, with a whitiſh bark. Leaves more than a palm in length, and two thirds of an inch in breadth. Bulbs ſeſſile, incumbent, ſtraightiſh, ſolitary, ovate, grooved, wrinkled, ſcarcely more than half an inch in length, yellowiſh green. Scapes ſolitary by the ſide of the bulbs, ſimple, erect, round, ſmooth, jointed, ſcaly, ſhorter than the leaves. Scales four or five ſheathing, oblong acute, tubular at the baſe, a little inflated at top, membranaceous, pellucid, ſhorter than the interſtices. Flowers at the top of the ſcape or peduncle, crowded. Spathe one-leafed, faſtened to the ſcape below the germ, ſpreading, incurved, aſcending at the tip, linear-acute, concave, quite entire, rounded at the back, ſmooth, very tender, membranaceous, white, permanent, much longer than the germ. Petals unequal; the two upper ones approximating, linear oblong, curved at the baſe and ſpreading, a little concave, ciliate at the edge, nerved, having very ſmall hairs ſcattered over them, the tips very long, ſometimes two inches, pendulous, very narrow, ſtraw-coloured; the two ſide ones upright, oblong, obliquely ſharpiſh, flat, membranaceous, concolor, ſmall, ſcarcely longer than the truncated nectary; the fifth or loweſt ſpreading, boat-ſhaped, aſcending with a ſharp apex,

membranaceous, ciliate, concolor, more than three times the length of the ſide ones. Nectary, a truncated ſlipper-ſhaped body, containing the parts of fructification, growing on the diſk of the flower. Aſcending apex incurved, bluntiſh, callous, fleſhy, yellowiſh, in the tip of which is a ſort of anther on a very ſhort white filament, recurved and incumbent on the nectary, haſtate, acute with blunt edges, the length of the nectary, yellow, but ſeeming deſtitute of pollen. Truncated body ſemicylindric, erect, white-membranaceous on the upper edge, rounded on the back, truncated at the tip, three-toothed, the ſide toothlets prolonged, white. Scalelet ſubglobular, fixed to the back of the nectary at top, lying on the truncated body, membranaceous, white, opening a little on the lower ſide, having a ſmall partition, and containing two ſmall oblong ſmooth yellow anthers. Piſtil none, but the truncated body. Stigma, an orbicular hole below the diſk of the truncated body. Silique oblong angular. In the morning the flowers are ſpread out, and hence two petals are long ſtraight and upright; in the afternoon they are pendulous.

103. Roots filiform flexuoſe ſimple paraſitical. Stem none. Bulbs above the roots cloſely crowded, ovate, quadrangular, wrinkled, the ſize of ſparrows' eggs. Leaves a palm long, and two thirds of an inch broad. Petioles ſemicylindric, channelled, a little twiſted, ſhort. Peduncle at the baſe of the bulb, preſſed cloſe by a ſheath, and another ſheath above the baſe, the reſt naked, ending in an umbel in an erect flat ſemicircle, with from ſix to nine flowers in one row: pedicels erect but ſpreading towards the end, a little curved to one ſide, round, ſmooth, coloured. Bractes linear-oblong, concave, acute, membranaceous, whitiſh, each ſhorter than the pedicel to which it is affixed. Corolla four-petalled, unequal; the upper petal erect, linear-lanceolate, with two teeth at the tip, and a large ovate hole at the baſe, where it appears to be tubular on account of the edges being bent back; it is white with a purple baſe, and more than an inch long; the two ſide petals are erect, obliquely lanceolate, a little incurved at the tips, the edges yellow, recurved, and ciliate with golden hairs; they are longer than the nectary and of a blood red colour; the lower petal ſpreading, ovate, acute, inflated, ſtriated, ciliate, membranaceous, ſcarcely ſo long as the ſide ones, of a yellowiſh red colour. Nectary, a truncated body, with the tip incurved, aſcending, a little callous, coloured, ſlipper-ſhaped. Anther? ſeſſile, haſtate, acute, curved, incumbent, ſomewhat fleſhy, blood-red with a yellow tip, barren. Truncated body concave in the diſk, margined, three-toothed, the back ſemicylindric, ſmooth, concave. Scalelet ſemiglobular, divided, incumbent on the diſk of the truncated body. Anther double, ſubglobular, yellow, ſmall. Germ club-ſhaped, ſtriated, ſmooth, red, ſmall. Style none: ſtigma, a round hole on the inſide of the truncated body below the diſk.

104. Roots filiform, in bundles below the bulbs on the ſtems, paraſitical, flexuoſe, ſmooth, woody, whitiſh green, ſhining. Stems ſubſcandent, variouſly branched, compreſſed a little, ſmooth, jointed, ſometimes ſheathed, ferruginous-green, long. Bulbs at the baſe of the branches. Racemes terminating, ſimple, ſometimes a foot and half long, but ſeldom. Peduncle erect, curved a little and flexuoſe, covered with ſheaths. Pedicels ſheathed at the baſe, ſolitary alternate, remote ſimple, round, more ſlender at the baſe, ſmooth, ſnow-white. Flowers nodding. Sheaths ſolitary, ſeſſile, with ſcalelets between. Corolla boat-ſhaped, five-petalled, ſnow-white. Silique oblong with five unequal angles, ſmooth, the thickneſs of a finger, opening laterally, three-valved. It flowers in the morning, ſhutting after noon, during ſeveral days.

105. Roots fibrous flexuoſe paraſitical. Stem none. Sheaths membranaceous, ſtriated, margined, ſmooth, the breadth of the leaves, ſhort. Spike axillary, ſimple, peduncled, bifarious, erect, longer than the leaves. Peduncle erect, ſmooth, compreſſed a little, jointed in the middle, having a large oblong acute membranaceous caducous bracte; the upper one has two or three alternate ſmaller bractes. Flowers on very ſhort alternate pedicels, having involucres at the baſe, which are lanceolate ovate acute ſolitary appreſſed membranaceous whitiſh much longer than the pedicels. Corolla ſix-petalled, three outer larger, all ſpreading a little, concave, membranaceous, whitiſh. Nectary a truncate body, very ſmall, covered by an inflated ſemiglobular membrane. Anthers two twin faſtened to a ſingle filament. Silique ovate-oblong, obſcurely angular, ſmooth. Seeds very numerous, white, thrown out to a conſiderable diſtance by very ſlender elaſtic threads or hairs.

Obſerved by Koenig in a wood by Tſing near Malacca on the upper boughs of very lofty trees.

106. Stems ſcandent, branched, round, filiform, ſcaly. Flowers among the ſcales, in pairs, ſeldom ſolitary, approximating to the ſtem, ſmall. Inſtead of a calyx, an ovate, acute, keeled ſcalelet, faſtened to the germ, inflated, membranaceous, white, ſhort. Corolla ſix-petalled; three outer, almoſt erect, ovate at the baſe, with lengthened tips, ſlightly awned, equal, whitiſh, ſtiffiſh; two inner lateral, faſtened to the ſide of the nectary, erect, ovate-oblong, quite entire, rounded at the tip, flat, membranaceous, white, ſubtranſparent, much ſhorter than the outer ones; the ſixth or third inner petal is faſtened to the upper tip of the nectary, aſcending, lanceolate, recurved, a little channelled, longer than the two other interior ones, callous, yellowiſh. Truncated body very minute, white, with a bell-ſhaped ſcalelet for a lid, faſtened to the back of the nectary, membranaceous, white, containing a twin, globular, callous, yellow, elaſtic, ſmall anther. Germ linear-oblong, ſhorter than the flower, involved in ſeveral oblong acute appreſſed membranaceous white ſcales ſhorter than the germ. Style none. Stigma a little hole below the diſk of the truncated body. Silique parabolic obſcurely three-ſided ſmooth ſmall. The lid of the nectary when ripe opens elaſtically.

107. Roots filiform flexuoſe white paraſitical. Bulbs crowded ovate angular grooved pale green, terminated by two or ſeldom three leaves, the ſize of a lark's egg. Leaves dark green, ſcarcely a palm and half long and four lines wide. Scapes at the baſe of the bulbs, ſolitary, almoſt erect, thick at the baſe and as it were ſheathed by the bulb, ſhort, filiform, roundiſh, ſmooth, having two ſometimes three joints, at which are ſhort oval ſcarioſe membranaceous ſheaths, ſcarcely longer than a foot, dark green, flexuoſe between the flowers, angular. Raceme ſimple ſubſpiked. Flowers from eighteen to thirty pedicelled remote, the lower ones more ſo, alternate. Pedicels round ſmooth, a little coloured, ſcarcely longer than the germ. Bracte ſolitary, faſtened to the pedicel at the baſe, preſſed cloſe, heart-ſhaped acute membranaceous white ſmall; beſides this there is no calyx or ſpathe. Petals, the four outer ſpreading very much, the lower and upper linear acute, a little incurved at the tip, concave, the ſide ones broader, rounded at the tips, concave, more coloured purple, all equal in length, ſomewhat fleſhy, purple at the tips the reſt white. Truncated body ſcarcely any, in its place an erect fleſhy body, erect, compreſſed, acute, incurved at the tip, rigid, white, having a groove and hole in front, ſcarcely ſhorter than the ſegments of the apex. Filament none. Anther covered at firſt, then burſting elaſtically from its membrane. Style none. Stigma a little cleft with a hole within the horn. Silique obovate, obſcurely three-ſided, with three grooves, ſmoothiſh, leſs than an inch in length.

108. Roots creeping in the ground. Stems ſimple erect round ſheathed compreſſed a little ſmooth jointed, the interſtices ſhorter than half the length of the leaf, from three to four feet long, and half the ſize of a gooſe-quill. Sheaths at the joints cloſely involving the ſtem, membranaceous, ſtriated, two-keeled, blunt at the mouth, having one toothlet oppoſite to the leaf, a little ſhorter than the internodes;

internodes: ſheaths radical and below the middle of the ſtem ſemiovate at the mouth, keeled on the back. Flowers terminating, on two or three alternate compreſſed ſpathes, toothletted in two rows on the edge, flexuoſe naked. Calyx none but the toothlets. Corolla ſix-petalled; five outer lanceolate acute quite entire erect equal in length; of theſe three are leſs white on the outſide, and two faſtened below the baſe of the nectary, more white, with a ſemipellucid nerve, more ſlender but hardly leſs; the ſixth inner petal oppoſite to the nectary, or the border of the nectary, broad, trifid, inflated at the baſe, fleſhy, the middle ſegment wrinkled fleſhy yellow; the two lateral ſegments erect ſemi-ovate membranaceous, coloured, with cloſe purple ſtreaks. Nectary ſpreading, boat-ſhaped, oblong, margined, retuſe, keeled, rigid, ſnow-white, about half the length of the outer petals. Filaments ſcarcely any. Anthers double, diſtinct, ovate, inflated, covered with a lid or heart-ſhaped white membrane, rather large, white, not callous, another membrane is incumbent on the anthers, which is bell-ſhaped emarginate divided into two cells. Germ cylindric, leſs than half the length of the flower: ſtyle within the nectary: ſtigma, a large triangular hole below the anthers, covered by the above-mentioned membranaceous lid. The flowers are larger than thoſe of white Narciſſus.

In the ſwampy parts of thick woods near Malacca. From the name we are to preſume that this may not be ſpecifically diſtinct from n. 89.

109. This climbs variouſly on trees. Leaves from bulbs, ovate-oblong acute flat fleſhy. Scapes at the baſe of the bulbs, ſolitary or ſometimes in pairs, with ovate inflated naked membranaceous ſheaths at the baſe, covered with a ſnow-white nap, ſeldom a foot high, commonly ſhorter. Flowers ſubſpiked ſolitary alternate ſomewhat remote, ſeſſile on the germ, ſpathaceous, boat-ſhaped. Spathes ovate-oblong acute, prolonged at the tips to the length of the flower, quite entire nerved, having white hairs on the outer ſurface, naked on the inner, membranaceous. Calyx none. Corolla ſix-petalled; the three outer larger connate below the nectary above the germ, lanceolate acute quite entire, having a ſnow-white lanugo on the outſide, within naked, yellowiſh, nerved; two other petals by the ſide of the nectary, faſtened towards the truncated end, erect, lanceolate, acute, ſmooth on both ſides, yellow, ſmaller; the ſixth petal faſtened above the baſe of the nectary and incumbent on it; doubly cordate; the ſegment of the baſe cordate, quite entire, concave, with a callous-fleſhy diſk, and a few brown-blood-red dots and ſtreaks, a little larger in front, ſmooth; the outer ſegment from the boſom of the former, obcordate, acute, ſublobed with a repand edge, concave, with a callous-fleſhy diſk, and difform whitiſh glands towards the tip; the reſt deeper coloured, brown-blood-red. Nectary proſtrate, faſtened to the larger borders, linear, aſcending, ſmooth, white, callous; at the top a truncated body. Filaments eight very ſhort and ſlender, connate. Anthers eight likewiſe connate, obovate, flat, large and diſtinct, yellow, callous[p].

This having the name of Flos aeris with a note of interrogation, is ſuſpected to be the ſame with n. 2.

The above deſcriptions, though very long, are conſiderably ſhortened, by omitting ſuperfluities, by abridging what is prolix, and entirely leaving out ſome paſſages which are very obſcure and even ſcarcely intelligible.

110 to 119 are natives of the newly diſcovered iſlands in the South Seas: 110 of New Caledonia; 111, 112, 113, 114, 116, 117, 118, 119 of the Society Iſlands; and 115 of New Zealand. They are all ſuppoſed to be new, except n. 118. which is figured in Hortus Malabaricus. Forſter, in his appendix to his Florula Auſtralis, mentions another ſpecies to be found in the Society Iſles, to which he gives the name of diſtichum, n. 546.—and a ſecond, to which he does not give any trivial name.—We have to lament that we have hitherto no deſcriptions of theſe ſpecies.

Gærtner (fruct. 1. 47.) has a ſpecies, which he names E. terreſtre. He thinks it may be Angræcum terreſtre primum, Rumph. amb. 6. 112. t. 52. f. 1? which Linneus refers to E. tuberoſum.

120. Leaves ſubradical, alternate, from a grooved multangular ſheath; they are ovate-oblong, acute, waved, concave, grooved, ſtriated, entire, ſmooth, erect, a hand in length and two inches in breadth, three, four, or five. Scape ſurrounded with leaves at the baſe, ſharp-angled, ſmooth, erect, longer than the leaves. Flowers at the top of the ſcape in ſpikes, alternate, drooping, purple. Spike ſharp-angled, erect, ſmooth, about a ſpan long. A very ſhort, ovate, purple bracte under each flower. Upper petal of the corolla ovate, reflex in the middle, grooved, emarginate, forming a helmet twice as broad as the others, having two calluſes at the baſe between the petal and the ſtyle; the two lower petals lateral, bent down at the baſe, and then bent back, linear, like the leaflets of the calyx, and of the ſame length. Capſule cylindric-filiform, twiſted, erect except at the tip, ſmooth, purple.

Native of Japan between Oſacca and Jedo: flowering in may and june.

121. Leaves radical, four or five, ſheathing, entire, ſmooth, unequal, an inch wide, a ſpan long. Scape purple, the length of the leaves. Flowers on the top of the ſcape, in racemes, ſeveral, drooping. Bractes like the leaves, gradually diminiſhing. The two upper petals equal, ovate, the length of the calyx, yellow with a purple line, concave: lower petal or lip trifid, lateral ſegments rounded, ſhorter, white with red ſtreaks, middle ſegment longer, concave, emarginate, bent in, white with a purple baſe, with two oblong purple calluſes. Capſule cylindric-club-ſhaped, a little twiſted, ſtriated, purpliſh-green, ſmooth, drooping.

Native of Japan, flowering in june.

Though this be Limodorum ſtriatum of the Flora Japonica, yet it is diſtinct from the plant of the ſame name in Kæmpf. ic. ſel. t. 2.

Roots ſimple or branched, thick, ſmooth; long contorted fibres iſſuing from the lower naked part of the ſtem and from among the lower leaves, adhering firmly to the bark of the tree. Stem perennial, ſimple, one or two feet long, as thick as the little finger, crooked, the upper part covered with leaves, the lower naked, withering away at the lower extremity. Leaves approximate, imbricate, alternate, facing two ways, linear, channelled, fleſhy, ſmooth, very firm, having two or three teeth at the end, from ſix to nine inches long, and about one broad. Raceme axillary, naked, length of the leaves, the flower-bearing part flexuoſe. Flowers from five to ten, remote, facing two ways, beautifully waved and ſtriated, with various ſhades of a greeniſh yellow. Petals oval, ſpreading, equal, ſcalloped. Nectary the length of the petals: about the middle its ſides approach, forming a tube; the apex is ſomewhat pointed.—This is a very beautiful paraſite, found on trees among the Circar mountains; it flowers during the wet ſeaſon.

122. Leaves remote alternate, facing two ways, linear, channelled, ſmooth, very firm, end-bitten, jointed juſt above their ſheath-like baſe, about ſix inches long, and one inch broad. Spike before the leaf, or leaf-oppoſed, ſhort, ſtraight, thick, many-flowered. Bractes ſmall, triangular, one-flowered. Flowers ſurround every part of the ſpike, ſmall, variegated with red and yellow.—This grows in ſimilar places.

123. The root conſiſts of many fleſhy fibres, like the two laſt, but iſſuing from one head. Stem none. Leaves radical three to five, alternate, facing two ways, from one and a half to three feet long, and about an inch and half broad. Scape radical, about two feet long, three or four inches at bottom involved in chaffy ſheaths, the reſt, forming the raceme, pendulous, many-flowered. Bractes minute, one to each flower. Petals lanceolate, ſpreading,

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[p] Retzius.

equal, ſtriated with roſe-colour and yellow. Nectary red, the lower lip three-parted.

Native of the ſame places; and differing but little from the aloifolium of Linneus [q].]

PROPAGATION AND CULTURE.

Mr. Miller ſays there are near thirty ſpecies of this genus, but as the plants cannot, by any art yet known, be cultivated in the ground, it would be to little purpoſe to enumerate them, though could the plants be brought to thrive, many of them produce very fine flowers of uncommon forms. He adds, that he had three ſpecies ſent him from America, which he planted with care in pots, and placed them in a ſtove, where they ſhowed their flowers, but the plants ſoon after periſhed.

[Since Mr. Miller's time numerous ſpecies of this fine and very ſingular genus have been introduced into our gardens, and ſome of them cultivated with ſucceſs by the ſuperior ſkill of modern practice, which deſpairs not of rearing and preſerving any plants where expenſe is not regarded. It requires however great ſkill and attention to overcome the united difficulties which attend the cultivation of plants which are at the ſame time of the Orchis tribe and paraſitical.

Dr. Smith ſays, we have ſcarcely ſeen any one ſpecies of this genus, except in a dry ſtate, before the year 1787, when E. cochleatum flowered for the firſt time in the ſtove, at Kew; nor was it till october 1788, that E. fragrans of Swartz exhibited its fragant and elegant bloom in the ſame rich collection. At preſent ſeveral ſpecies are to be ſeen flowering in ſpring or autumn [r]. The following were in a thriving ſtate in the royal garden at Kew in 1794. Epidendrum Vanilla, coccineum, fecundum, lineare, ciliare, cucullatum, enſifolium, ophioglosſoides, ruſcifolium, fuſcatum, tripterum, Barringtoniæ, nutans, ſeſſile, altiſſimum, ſanguineum, glaucum.

They are all cultivated in the ſtove, with very great heat; being moſtly paraſitical, they flouriſh beſt with fragments of half-rotten bark at their roots [s]. They may be increaſed by parting their roots, or what are commonly called offsets, of which they generally have plenty.

Epidendrum. See *Lycoperdon.*]

EPIGÆA. (Επιγαια, *lying or creeping on the ground.*)
Lin. gen. n. 550. *Reich.* 594. *Schreb. n.* 748. *Juſſ.* 161. Memecylum. *Mitch.* 13.
Claſſ. 10. 1. Decandria Monogynia.
Nat. order of *Bicornes.—Ericæ.* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* double, approximated, permanent.
P. exterior three-leaved: *leaflets* ovate-lanceolate, acuminate: the exterior large.
P. interior five-parted, upright, a little longer than the exterior: *leaflets* lanceolate, acuminate.

Cor. One-petalled, ſalver-form. *Tube* cylindric, as long as the calyx or longer, hirſute within. *Border* ſpreading, five-parted: lobes ovate-oblong.

Stam. *Filaments* ten, filiform, length of the tube, affixed to the baſe of the corolla. *Anthers* oblong, ſharp.

Pist. *Germ* globoſe, villoſe. *Style* filiform, length of the ſtamens. *Stigma* obtuſe, ſubquinquefid.

Per. *Capſule* ſubgloboſe, depreſſed, five-cornered, five-celled, five-valved.

Seeds very many, roundiſh. *Receptacle* large, five-parted.

ESSENTIAL CHARACTER.

Cal. outer three-leaved; *inner* five-parted. *Cor.* ſalver-form. *Capſ.* five-celled.

SPECIES.

1. Epigæa repens. *Creeping Epigæa,* or *trailing Arbutus.*
Lin. ſpec. 565. *Reich.* 2. 296. *amæn.* 3. 17. *Gron. virg.* 49. (Arbutus) *Pluk. alm. t.* 107. *f.* 1. *Raii ſuppl.* 596.
Leaves cordate-ovate entire flat ſharp, corollas cylindric.

[2. Epigæa cordifolia. *Heart-leaved Epigæa.*
Swartz prodr. 73.
Leaves heart-ſhaped roundiſh ſerrate convex hiſpid rigid, corollas ovate.]

DESCRIPTIONS, *&c.*

1. It is a low plant, with a trailing ſhrubby ſtalk, which puts out roots at the joints, and when in a proper ſoil and ſituation, multiplies very faſt. The ſtalks are garniſhed with oblong rough leaves which are waved on their edges. The flowers are produced at the end of theſe branches in looſe bunches; they are white, and divided at the top into five acute ſegments, which ſpread open in form of a ſtar. It flowers in july, but does not produce fruit in England.

[Native of Virginia and Canada.

It ſeems to have been firſt introduced by Mr. Peter Collinſon in 1736 [t].

2. Native of Guadaloupe [u].]

PROPAGATION AND CULTURE.

1. This plant is eaſily propagated by its trailing ſtalks, which put out roots at the joints, may be cut off from the old plant, and placed in a ſhady ſituation and a moiſt ſoil: the beſt time for this is in autumn, that the plants may be well rooted before the ſpring. If the winter ſhould prove very ſevere, it will be proper to lay a few dried leaves, or ſome ſuch light covering over them, which will prevent their being injured by froſt; and after they are well rooted, they will require no farther care but to keep them clean from weeds.

[Epigeios. See *Arundo.*

Epiglottis. See *Aſtragalus.*]

EPILOBIUM. (επι λοβου ιον, *ſupra ſiliquam violá, a violet upon a pod; a rare inſtance of the name expreſſing an eſſential character of the plant.*)
[*Lin. gen.* 471. *Reich.* 507. *Schreb. n.* 639. *Gærtn. t.* 31. *Juſſ.* 319. Chamænerion. *Tourn.* 157.
Claſſ. 8. 1. Octandria Monogynia.
Nat. order of *Calycanthemæ.—Onagræ.* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, four-parted ſuperior; *diviſions* oblong, acuminate, coloured, deciduous.

Cor. *Petals* four, roundiſh, outwardly wider, emarginate, expanding, inſerted into the diviſions of the calyx.

Stam. *Filaments* eight, ſubulate: the *alternate* ones ſhorter. *Anthers* oval, compreſſed, obtuſe.

Pist. *Germ* cylindric, extremely long, inferior. *Style* filiform. *Stigma* four-cleft, thick, obtuſe, rolled back.

Per. *Capſule* extremely long, cylindric, ſtreaked, four-celled, four-valved.

Seeds numerous, oblong, crowned with down. *Receptacle* extremely long, four-cornered, free, flexile, coloured.

Obs. *In ſome the ſtamens and piſtil are upright, in others bent downwards to the lower ſide.*

ESSENTIAL CHARACTER.

Cal. four-cleft. *Pet.* four. *Capſ.* oblong, inferior. *Seeds* downy.

SPECIES.

* *Stamens bent down.*

1. Epilobium anguſtifolium. *Narrow-leaved* or *Roſebay Willow-herb.*
Lin. ſpec. 493. *Reich.* 2. 151. *fl. lapp.* 146. *ſuec. n.* 327. *hort. cliff.* 154. *Ait. hort. kew* 2. 5. *Hudſ. angl.* 161. *With.* 387. *Curtis lond.* 2. 24. *Lightf. ſcot.* 197. *Hall. helv. n.* 1000. *Pollich pal. n.* 369. *Gunn. norv. n.* 57. *Gmel. ſib.* 3. 164. *Krock. ſileſ. n.* 583. *Fl. dan. t.* 289.
E. Geſneri. *Allion. pedem. n.* 1615. *Villars dauph.* 3. 507.
Chamænerion Geſneri. *De Bry floril. t.* 42.—— anguſtifolium. *Scop. carn. n.* 455.
C. *Ger. emac.* 477. 7, 8. *Pet. brit.* 52. 10.—— flore delphinii. *Park. parad.* 267. 6.
Lyſimachia Chamænerion dicta latifolia & anguſtifolia. *Bauh. pin.* 245. *Mor. hiſt. ſ.* 3. *t.* 11. *f.* 1, 2.

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[q] Roxburgh.

[r] Smith ic. rar.

[s] Ibid.

[t] Hort. kew.

[u] Swartz.

L. ſpecioſa, quibuſdam Onagra dicta, ſiliquoſa. *Bauh. hiſt.* 2. 906. *f.* 907. 1. *Raii hiſt.* 860. 1, 2. *ſyn.* 310.
Leaves ſcattered linear-lanceolate quite entire veined, flowers unequal.
[2. Epilobium anguſtiſſimum. *Linear-leaved W. H.* *Weber dec.* 3. *Ait. hort. kew.* 2. 5. *Hall. helv. n.* 1001. *De Sauſſ. voy.* 2. 17. *Ger. prov.* 457. *n.* 2.
E. anguſtifolium γ. *Lin. ſpec.* 494.
E. Dodonæi. *Allion. pedem. n.* 1016. *Villars dauph.* 3. 507.
Lyſimachia Chamænerion dicta alpina. *Bauh. pin.* 245. *prodr.* 116. *Park. theat.* 547. 2. *Raii hiſt.* 860.
Pſeudolyſimachium purpureum minus. *Dod. pempt.* 85.
Leaves ſcattered linear obſcurely toothletted veinleſs; petals equal quite entire.
3. Epilobium latifolium. *Broad-leaved Willow-herb.* *Lin. ſpec.* 494. *Reich.* 2. 151. *Gmel. ſib.* 3. 164. *n.* 34. *Fl. dan. t.* 565. *Krock. ſileſ. n.* 584.
Leaves alternate lanceolate-ovate, flowers unequal.]

** *Stamens upright regular, petals bifid.*

4. Epilobium hirſutum. *Large-flowered Willow-herb.* *Lin. ſpec.* 494. *Reich.* 2. 152. *hort. cliff.* 145. *fl. ſuec. n.* 328. *Ait. hort. kew.* 2. 5. *Curtis lond.* 2. 21. *With.* 388. *Relh. cant. n.* 292. *Lightf. ſcot.* 197. *Hall. helv. n.* 995. *Neck. gallob.* 180. *Pollich pal. n.* 370. *Villars dauph.* 3. 508. *Krock. ſileſ. n.* 585. *Fl. dan. t.* 326.
E. ramoſum. *Hudſ. angl.* 162.
E. grandiflorum. *Allion. pedem.* 1018.
Chamænerion hirſutum. *Scop. carn. n.* 452.
Lyſimachia ſiliquoſa. *Ger.* 386. 3. *emac.* 476. 6.—hirſuta majore flore purpureo. *Bauh. hiſt.* 2. 905. 3. *Raii hiſt.* 861.—hirſ. magno fl. *Bauh. pin.* 245. *Raii ſyn.* 311. *Mor. hiſt. ſ.* 3. *t.* 11. *f.* 3. *Pet. brit.* 52. 11.
L. purpurea. *Fuchſ. hiſt.* 491.
Leaves ovate-lanceolate half-ſtem-claſping hirſute, ſtem branching very much, root creeping.
[5. Epilobium villoſum. *Hoary Willow-herb.* *Curtis lond.* 2. 22. *With.* 389. *Ait. hort. kew.* 2. 5. *Krock. ſileſ. n.* 586. *Relh. cant. n.* 291. *Fl. dan. t.* 347.
E. hirſutum β. *Lin. ſpec.* 494.
E. hirſutum. *Hudſ. angl.* 161. *Allion. pedem. n.* 1017.
Lyſimachia ſiliquoſa hirſuta parvo flore. *Bauh. pin.* 245. *prodr.* 116. *Raii hiſt.* 861. *ſyn.* 311. *Mor. hiſt. ſ.* 3. *t.* 11. *f.* 4. *Pet. brit.* 52. 12.—fl. minore. *Bauh. hiſt.* 2. 906.—ſylvatica. *Ger.* 387. *emac.* 479. 12.—ſiliquoſa ſylveſtris hirſuta. *Park. theat.* 549.
Leaves oblong-lanceolate toothed pubeſcent, ſtem columnar villoſe.
6. Epilobium montanum. *Mountain* or *wood Willow-herb.* *Lin. ſpec.* 494. *Reich.* 2. 152. *fl. lapp.* 147. *ſuec. n.* 329. *hort. cliff.* 145. *Hudſ. angl.* 162. *With.* 390. *Curt. lond.* 3. 24. *Relh. cant. n.* 293. *Lightf. ſcot.* 198. *Hall. helv. n.* 996. *Pollich pal. n.* 371. *Gunn. norv. n.* 56. *Gmel. ſib.* 3. 165. *Krock. ſileſ. n.* 587. *Villars dauph.* 3. 509. *Gærtn. fruct.* 157.
Chamænerion montanum. *Scop. carn. n.* 453.
Lyſimachia ſiliquoſa glabra major. *Bauh. pin.* 245. *Mor. t.* 11. *f.* 5, 6.—ſiliqu. major. *Park. theat.* 548. 3. *Raii hiſt.* 861.—campeſtris. *Ger.* 387. *emac.* 479. 11. *Raii ſyn.* 311. *Petiv. brit.* 53. 1.
Pſeudolyſimachium purpureum primum. *Dod. pempt.* 85.
Leaves oppoſite ovate toothed.
7. Epilobium tetragonum. *Square-ſtalked Willow-h.* *Lin. ſpec.* 494. *ſyſt.* 359. *Reich.* 2. 153. *Hudſ.* 162. *With.* 390. *Curtis lond.* 2. 23. *Relh. cant. n.* 294. *Lightf. ſcot.* 198. *Hall. helv. n.* 997. *Pollich pal. n.* 372. *Villars dauph.* 3. 509. *Krock. ſileſ. n.* 590. *Lour. cochinch.* 225.
Chamænerion tetragonum. *Scop. carn. n.* 454.
Lyſimachia ſiliquoſa glabra minor. *Bauh. pin.* 245. *Raii hiſt.* 861. *ſyn.* 311. 5. *Ger.* 387. *emac.* 479.
Leaves lanceolate toothletted, the bottom ones oppoſite; ſtem four-cornered.
8. Epilobium paluſtre. *Marſh Willow-herb.* *Lin. ſpec.* 495. *Reich.* 2. 153. *fl. ſuec. n.* 330. *lapp.* 149. *Hudſ. angl.* 163. *With.* 391. *Relh. cant. n.* 295. *Lightf. ſcot.* 199. *Hall. helv. n.* 998. *Pollich pal. n.* 373. *Leers herborn. n.* 288. *Krock. ſileſ. n.* 591. *Fl. dan. t.* 347? *Villars dauph.* 3. 510.
Chamænerion paluſtre. *Scop. carn. n.* 456?
Lyſimachia ſiliquoſa glabra anguſtifolia. *Bauh. pin.* 245. *Ger.* 386. 4. *emac.* 479. *Raii hiſt.* 862. 8. *ſyn.* 311. 6.
Leaves oppoſite lanceolate quite entire, petals emarginate, ſtem erect.
9. Epilobium alpinum. *Alpine Willow-herb.* *Lin. ſpec.* 495. *Reich.* 2. 153. *Fl. lapp.* 150. *ſuec. n.* 331. *Hudſ. angl.* 163. *With.* 391. *Lightf. ſcot.* 199. *t.* 10. *f.* 1. *Hall. helv. n.* 999. *Krock. ſileſ. n.* 592. *Fl. dan. t.* 322. *Villars dauph.* 3. 510.
Chamænerion alpinum, alſines fol. *Scheuch. alp.* 132. 332.
Lyſimachia ſiliquoſa nana, prunellæ fol. *Bocc. muſ.* 2. 161. *t.* 108?—glabra minor latifolia. *Raii ſyn.* 311. 7. *hiſt.* 862. 9.
Leaves oppoſite ovate-lanceolate quite entire, ſiliques ſeſſile, ſtem creeping.
10. Epilobium fruticoſum. *Lour. cochinch.* 226.
Stem ſhrubby very much branched, leaves quite entire alternate hirſute
11. Epilobium glabellum. *Forſt. flor. auſtral. n.* 160.
Leaves oblong toothed obtuſe, the bottom ones oppoſite, ſtem roundiſh erect.
12. Epilobium rotundifolium. *Forſt. flor. auſtral. n.* 161.
Leaves oppoſite roundiſh toothletted.
13. Epilobium parviflorum. *Schreb. lipſ.* 147. *Retz. obſ.* 1. 16. *n.* 42.
Leaves oppoſite lanceolate ſerrate ſeſſile, both they and the ſtem villoſe.
14. Epilobium alſinefolium. *Villars dauph.* 3. 511.
Lyſimachia ſiliquoſa glabra. *Raii hiſt.* 862.
Stem creeping, leaves ovate acute toothed, ſiliques the length of the ſtem.

DESCRIPTIONS, &c.

Theſe plants are hardy perennials, not void of beauty; they are however commonly conſidered only as weeds, and accordingly are ſeldom cultivated in gardens, except the firſt.

In the three firſt ſpecies the leaves are ſcattered or alternate; in the reſt the lower leaves are oppoſite, but the upper alternate: the ſpecific character therefore of *oppoſite* leaves is inſufficient.

1. *Root* creeping. *Stem* upright, from three to ſix feet high, branched at top, round, and pubeſcent; branches alternate. *Leaves* alternate, running ſlightly down the ſtem, ſmooth, the edge minutely and rarely indented, the midrib whitiſh: the lateral nerves are nearly at right angles with this: and the leaves at their firſt appearance are rolled in at the edge. Flowers purple, ſhowy, growing in a kind of long ſpike; on purple peduncles, the length of the germ; bending down before the flowers open, but afterwards erect; ſeldom more than four or five blown together on the ſame ſpike: the two lowermoſt petals ſomewhat remote from each other: filaments nearly of an equal length, purpliſh, at firſt bending down, finally becoming nearly upright, ſhorter than the piſtil; anthers red, having two cavities; pollen green: germ ſlightly quadrangular, crowned by a gland; ſtyle white villoſe towards the bottom: ſtigma large, the four ſegments villoſe: capſule ſomewhat incurvated; ſeeds affixed to a very long, looſe, flexible receptacle[*].]

[*] Curtis, Linn. Pollich.

There is a variety of this with white flowers.

From the ſimilitude of the leaves to thoſe of Willow, this plant obtained the name of *Willow-herb* or *French-Willow*. It was formerly much planted in gardens; but as it overruns all the neighbouring plants by means of its creeping roots, it has generally been caſt out: however in low moiſt places, or in great ſhade, this plant will make a good appearance when it is in flower, which will be near a month, if the ſeaſon be not very hot.

[It is native of moſt parts of Europe from Lapland to Italy. In Britain it is not common; on Maize-hill beyond Greenwich, and other places near London, it has probably got out of gardens; but in other places it is undoubtedly wild, as near Alton in Hampſhire; in Charlton foreſt, and ſeveral other woods in Suſſex, where Mr. Miller found it in great plenty, far from any habitations; about Berkhamſtead in Hertfordſhire; in ſeveral parts of Yorkſhire; and many places in Scotland.

Gerarde (p. 388.) informs us, that he had plants of this ſpecies from Yorkſhire, and that they grew in his garden "very goodly to behold for the decking up of houſes and gardens."—His deſcription is right, but the figure is of another ſpecies.

The young ſhoots are ſaid to be eatable, although an infuſion of the plant ſtupifies: the pith, when dried, is boiled, and becoming ſweet, is by a proper proceſs made into ale, and this into vinegar by the Kamtſchatdales; it is alſo added to the Cow-Parſnep, to enrich the ſpirit that is prepared from that plant; as fodder, goats are ſaid to be extremely fond of it, and cows and ſheep to eat it; the down of the ſeeds mixed with cotton or fur has been manufactured into ſtockings and other articles of cloathing[b].

2. This ſpecies has been confounded with the foregoing. Profeſſor De Sauſſure ſays it differs in its woody ſtem, its very narrow leaves with ſalient glands on their edges, the much more lively colour of the flower, ſhorter ſiliques, and the air entirely different. Haller adds, that the ſtem is only a foot or eighteen inches in height with a branch from almoſt every axil; the flowers almoſt the ſame with the foregoing, but the leaves totally different.

Monſ. Villars ſays, that the flowers do not come in a ſpike, like thoſe of the preceding, but terminate the ſtem, and are fewer in number.

It is an alpine plant, but is common low down in the beds of the alpine torrents; as in the *Vevaiſe*, and the *grande Eau* near Aigle; in both of which I gathered it abundantly. Found alſo in Provence, Dauphiné, Savoy, *&c.* It flowers in july and auguſt. Introduced in 1775 by Drs. Pitcairn and Fothergill.

3. This differs from the firſt ſpecies in having flowers twice the ſize; the leaves broader, regularly alternate not ſcattered, very ſmoothly tomentoſe on both ſides[c]. The ſtem is round, eighteen inches to upwards of two feet in height, and erect[d]. Both this and the firſt differ from the following ſpecies in having unequal corollas with entire petals; the ſtamens converging at the baſe to the ſtyle; the piſtil bent down; the leaves not oppoſite, and when they firſt break forth rolled back[e].

Native of Denmark, Sileſia, and Siberia.

4. *Root* full of ſhoots, with numerous fibres, ſending out from the upper part runners of a conſiderable thickneſs, which creeping under the ſurface, ſpread widely and propagate the plant. *Stem* from three to ſix feet high, upright, very much branched, cylindric, ſomewhat quadrangular at bottom, hirſute and purpliſh: with ſoft ſpreading hairs, flatted at the inſertion of the branches; which are like the ſtem, nearly upright, the upper generally ſolitary, alternate. *Leaves* ovate-lanceolate, the uppermoſt alternate, finely toothed at the edges, the ſerratures hooked and blunt, hirſute with ſoft hairs on both ſides, half-ſtem-claſping running a little way down the ſtem, the middle of the baſe higher than the ſides of it. *Flowers* large, ſhowy, purple or fleſh-coloured, ſomewhat bell-ſhaped, and hanging down a little, on peduncles, ſolitary, alternate: calyx upright, angular at the baſe, deeply divided into four ſegments, united at bottom by a glandular receptacle; the baſe within villoſe: petals obcordate, emarginate, with white claws, and twice the length of the calyx: filaments four nearly as long again as the other four, but the longeſt not half ſo long as the petals; anthers oblong, two-celled, yellowiſh or white, after ſhedding their duſt bowed: germ oblong, villoſe, four-cornered, grooved, crowned with very minute glands, the corners purple; ſtyle hanging down, and longer than the ſtamens, crooked, white: ſeed-veſſel three inches long, obtuſely four-cornered and grooved, ſlightly hirſute: ſeeds pale brown, ovate; viewed with a magnifier on one ſide convex and roughiſh, on the other flattiſh and grooved[f].

Native of moſt parts of Europe, by the ſides of ditches, ponds, lakes and rivers, flowering in july and auguſt.

The leaves, and particularly the top ſhoots when ſlightly bruiſed have a delicate cool fragrance, reſembling ſcalded codlings, whence its name of *Codlings and cream*; this fragrance is very ſoon loſt after the plant is gathered. It is alſo called *Great hairy codded Looſe-ſtrife.* Horſes, ſheep, and goats eat it; and if it were found to be an acceptable fodder, it might be cultivated to advantage in wet ſituations[g].

It varies with white flowers, and alſo with variegated leaves, in which ſtate it is ſometimes ſold by the gardeners; but having a creeping root, it is apt to increaſe too much[h].

5. This invariably differs from the foregoing in its corolla, root and pubeſcence. The corolla is in general not more than one-third of the ſize; the root does not creep; and both ſtem and leaves are covered with numerous ſoft hairs, which give the whole plant a hoary appearance. The plant is alſo much ſmaller, and in general not ſo much branched: the leaves ſeſſile but not decurrent, the ſerratures few and diſtant: the calyx is alſo very different; and the ſegments of the ſtigma are ſcarcely rolled back[i].

It grows in the ſame places, and flowers at the ſame time with the foregoing.

6. The *root* has, on its upper part, little buds of a bright red colour. *Stem* from one to three feet high, upright, red, cylindric, ſcarce perceptibly downy, ſometimes branched at top, but often ſingle. *Leaves* oppoſite, except the uppermoſt, on very ſhort petioles uniting at the baſe, ſharp at the end, finely ſerrate with unequal teeth, ſomewhat hooked, ſmooth on the upper ſide, on the under paler, and very ſlightly hairy, the downineſs is juſt perceptible on both ſurfaces, according to Withering, but moſt underneath. The bottom leaves are often of a bright red colour. Calycine leaflets four, lanceolate, with a conſpicuous midrib ſlightly hairy on the outſide and at the edges. Petals obcordate, deeply emarginate, pale purple, veined with deeper purple lines. Stamens moſtly on one ſide of the ſtyle, which is bowed upwards and reddiſh. Germ four-cornered: ſtyle the length of the ſtamens, thickening a little at top: ſegments of the ſtigma ſpreading, but not rolled back[k].

Native of Europe, in woods and hedges; ſometimes in moiſt meadows, but more frequently in dry gravelly ſoils, in courts, neglected walks, and on walls; I have often remarked it on old trees, eſpecially willows. It flowers from june to auguſt. Mr. Hudſon, marks it as biennial, and indeed it has not the appearance of being perennial, like moſt of the others.

This, like moſt of the reſt, varies with a white corolla, as alſo with three or four leaves at each joint.

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[b] Haller, Curtis, Withering, Lightfoot.
[c] Linn. ſpec.
[d] Krocker.
[e] Linn. ſpec.

[f] Curtis, Linn. Hudſ. With. and Stokes.
[g] Curtis and Withering.
[h] Curtis.
[i] Ibid.
[k] Curtis, Linn. Hall. With. and Stokes.

Schreber has a ſpecies under the name of *Epilobium roſeum,* which Retzius determines to be a variety of this ſpecies; to his opinion I willingly ſubſcribe, ſuſpecting that the ſpecies of this genus, as in many others, have been too much multiplied. The ſame author has another, under the title of *E. parviflorum:* ſee n. 13.—and Jacquin mentions a third, which he calls *E. alpeſtre* (Hall. 996. β.).

7. One of the moſt ſtriking characters of this is the apparent ſquareneſs of the ſtalk, which ariſes from projecting lines running from the leaves down it: to this we may add the narrowneſs of its leaves; the uncommon length of its pods, and its undivided ſtigma, a character firſt noticed by Ray[l]. The lower leaves are lanceolate, the upper ones narrower, all ſerrate and ſmooth; flowers ſmall, purple.

Willich remarks, that the young leaves have livid ſpots, and that the top of the plant, whilſt tender, hangs down: he confirms Ray's obſervation, of the ſimplicity of the ſtigma. Mr. Curtis has ſometimes found a variety, with leaves nearly as broad as thoſe of the *montanum,* and placed on petioles of a conſiderable length.

Native of Europe, the Eaſt Indies, China and Cochinchina; with us not uncommon, generally met with in marſhes, and by the ſides of rivulets and ditches; as in the lane from Newington to Hornſey-wood; near Bungay in Suffolk; Alconbury in Huntingdonſhire, *&c.* flowering in july and auguſt.

Haller doubts whether this and the next be diſtinct ſpecies, from the foregoing; Scopoli on the contrary has no doubt of it. Villars affirms that this can ſcarcely be diſtinguiſhed from the preceding.

8. *Stem* cylindric, upright, ſmooth or pubeſcent, a foot high. *Leaves* ſeſſile, ſmooth, obſcurely toothed, varying extremely in breadth; in the axils of theſe appear to be bundles of ſmaller ones, which are only ſmall leafy branches. Calyx a little hairy on the outſide: petals reddiſh or pale purple, emarginate not cloven to the middle: the anthers when they are ſhedding their pollen adhere firmly to the ſtigma ſo as hardly to be ſeparated without violence, but before and after that time they do not touch it: ſtigma thick, club-ſhaped, yellowiſh white, ſlightly cloven at top into four parts. Siliques peduncled[m].

Mr. Ray affirms that the calyx is five-parted: that it is much lower than the foregoing, the leaves ſmaller, of a darker green, and not toothed about the edge.

Monſ. Villars deſcribes it as being lower than any of the preceding, the ſtems ſingle, little branched, and half a foot high; the leaves narrow, almoſt linear, moſtly alternate, obtuſe and wider at the baſe; the flowers ſmall, pale red, emarginate. He ſays, that there are intermediate ſpecimens which ſo bring together this, and E. montanum and tetragonum, that it is difficult to diſtinguiſh them; that this however is marked by the form of its leaves, the branches being approximating, and by its truncate root full of fibres: he adds, it is clear that this is not Chamænerion paluſtre of Scopoli, becauſe the petals are entire; and he is of opinion that Scopoli has given this name to the ſecond ſpecies.

Native of Europe, on marſhes, bogs, and by the ſides of lakes.

9. This is a creeping plant, flowering early in the ſpring with ſeſſile germs: it is three or four inches, or hardly a ſpan high, decumbent at bottom, then upright, and bears one or two flowers at the top. Leaves quite ſmooth, ſometimes ſlightly toothed. Siliques quite ſmooth, four or five times longer than the leaves[n].

Native of the mountains of Lapland, Denmark, Switzerland, Sileſia, Savoy, Dauphiné, Britain; as on Cheviott hills, near Settle, about Buckbarrow-well, and in many parts of Scotland, by the ſides of rivulets, and in ſandy places.

10. Stem ſtraight round ſix feet high, with aſcending branches. Leaves lanceolate, acute at both ends, ſubpetioled. Peduncles one-flowered. Flowers ſuperior, yellow. Capſule columnar, eight-cornered, crowned with the permanent calyx. Seeds not pappoſe, allied to E. hirſutum, but in that the leaves are oppoſite, ſerrate, decurrent, ſtem-claſping.

This is a native of Cochinchina[o].

11, 12. Natives of New Zealand[p].

13. Native of Germany.

14. This is very nearly allied to E. alpinum in its ſize, habit, diſpoſition of the leaves, flowers and ſiliques: their ſtems at bottom decumbent are thence aſcending, they are ſimple and commonly two or three inches high, the leaves are oppoſite; thoſe of E. alpinum are elliptic, obtuſe, very ſeldom toothed, the upper ones are narrower and alternate; both upper and lower are of a bright green: the leaves of this are wider, oval, ſharp, always toothed, and of a duſky green inclining to black; the flowers are bright red, a little emarginate, middle-ſized; the ſiliques are few, ſmall, at an obtuſe angle in the firſt; ſquare, very long, and ſtraight in the ſecond. They both grow on the ſummits of the higheſt mountains, near the ſnow, where the ſiliques are often as long as the ſtem. It is poſſible that they may be only varieties of E. montanum and tetragonum[q].]

PROPAGATION AND CULTURE.

Theſe plants propagate ſpontaneouſly both by ſeeds and runners: and require to be reſtrained rather than increaſed by the hand of art. They may however be admitted to advantage in remote ſhady corners, or on rock-work. They require no culture, except ſuch as is neceſſary to keep them within bounds.

EPIMEDIUM, (*of Pliny,* Επιμηδιον *of Dioſcorides. From* επι *&* Μηδιον; *being larger than another plant named Medium: this derivation is very unſatisfactory, but we have not a better to ſubſtitute.*)

Engl. *Barrenwort.* Fr. *Chapeau d'Eveque.*
Lin. gen. n. 148. *Reich.* 154. *Schreb.* 193. *Tourn.* 117. *Juſſ.* 287.
Cl. 4. 1. Tetrandria Monogynia.
Nat. order of *Corydales.—Berberides* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* four-leaved: *leaflets* ovate, obtuſe, concave, expanding, ſmall, placed directly (not alternately,) below the petals, caducous, (with a ſingle bracte at the baſe of two of them, *J.*)

COR. *Petals* four, ovate, obtuſe, concave, expanding.
Nectaries four, cup-form, (ſlipper-form, *J.*) with obtuſe bottoms, of the ſize of the petals, and leaning on them, affixed by the edge of the mouth to the receptacle.

STAM. *Filaments* four, ſubulate, preſſing on the ſtyle. *Anthers* oblong, erect, two-celled, two-valved, gaping from the baſe towards the tip, with a free diſſepiment.

PIST. *Germ* oblong. *Style* ſhorter than the germ, length of the ſtamens. *Stigma* ſimple.

PER. *Silique* oblong, acuminate, one-celled, two-valved.

SEEDS very many, oblong.

ESSENTIAL CHARACTER.

Nect. four, cup-form, leaning on the petals. *Cor.* four-petalled. *Cal.* very caducous. *Fruit* a ſilique.

SPECIES.

1. Epimedium alpinum. *Alpine Barrenwort.*
Lin. ſpec. 171. *Reich.* 1. 330. *hort. cliff.* 37. *upſ.* 29. *Scop. carn. n.* 169. *Mill. fig. t.* 133. *Berg. phyt.* 2. 135.
Epimedium. *Bauh. pin.* 323. *Bauh. hiſt.* 3. 709. (deſcr. non fig.) *Tabern. ic.* 774. *Dod. pempt.* 599. *Lob. hiſt.* 176. *Ger.* 389. *emac.* 480.

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[l] Curtis.

[m] Linn. Withering, Woodw. Relh. Leers.

[n] Linn. Lightf. Haller.

[o] Loureiro.

[p] Forſter.

[q] Villars.

Park. theat. 1365. *f.* 1366. 1. *parad.* 283. *f.* 285. 6. *Raii hiſt.* 1330.

DESCRIPTION, &c.

This plant has a creeping root, from which ariſe many ſtiff ſmooth ſtalks about nine inches high, [cylindric, ſimple, near the root ſurrounded with ſcales, at top trichotomous. Leaves once and twice ternate, pendulous, heart-ſhaped ending in a point, ſerrate, the ſerratures ending in a hair, pale green on the upper ſide, gray on the under. Raceme a finger's length, naked, looſe, lateral, with three or four branchlets, uſually two-flowered, ſupported by a rufous bracte. Calycine leaflets reddiſh, nectaries yellow, longer than the petals: ſtamens ſhort, anthers acuminate: ſtigma yellowiſh, faſciated at bottom with a red ring. Seeds obliquely tranſverſe.

Native of the Alps, and Apennines; flowering in april and may, and longer in ſhady places; alſo in Japan.—Mr. Miller affirms that he received ſome plants of it, which were found growing naturally in a wood in the north of England: but he was propably miſinformed.

'This rare and ſtrange plant (ſays Gerarde) was ſent to me from the French King's herbariſt, *Robinus*, dwelling in Paris, at the ſign of the black head, in the ſtreet called *Du bout du Monde*. I planted it in my garden, but it was dried away with the extreme heat of the ſun, which happened in the year 1590, ſince which time it bringeth ſeed to perfection.'—Johnſon (Ger. emac.) adds that it grew in the garden of his friend Mr. John Milion in Oldſtreet, and ſome other gardens about town.

PROPAGATION AND CULTURE.

It may be increaſed by the roots, and ſucceeds beſt in the ſhade, where it muſt every year be reduced, otherwiſe it will ſpread its roots, ſo as to interfere with the neighbouring plants. It deſerves a place in gardens, though not ſhowy, for its beauty and ſingularity.

Epipactis. See *Aſtrantia*, *Ophrys*, *Orchis*, *Satyrium*, *Serapias*.

Epiphyllanthus. See *Xylophylla*.

Epipogium. See *Satyrium*.

Epithymum. See *Cuſcuta*.]

EQUISETUM, (*of Pliny. Equi ſeta: horſe-hair.*)
Engl. *Horſe-tail.* Fr. *Prêle.*

[*Lin. gen. n.* 1169. *Reich.* 1284. *Schreb.* 1614. *Tourn.* 307. *Juſſ.* 17. *Hedw. theor.* 33.

Claſſ. 24. 1. Cryptogamia Filices.

Nat. order of *Filices* or *Ferns*.

GENERIC CHARACTER.

Fructifications diſpoſed into a long ovate-oblong ſpike. *Each* orbiculate, gaping at the baſe with ſeveral valves, connected by a flat ſhield-ſhaped top.

SPECIES.

1. Equiſetum ſylvaticum. *Wood Horſe-tail.*
Lin. ſpec. 1516. *Reich.* 4. 372. *Fl. lapp.* 391. *ſuec. n.* 927. *Hudſ. angl.* 447. *Relh. cant. n.* 748. *Lightf. ſcot.* 646. *Hall. helv. n.* 1680. *Scop. carn. n.* 1252. *Pollich pal. n.* 948. *Leers herborn. n.* 779. *Villars dauph.* 3. 834. *Tabern. hiſt.* 562. *ic.* 253. *Ger.* 957. *emac.* 1114. 5. *Park. theat.* 1201. 5. *Raii hiſt.* 128. *ſyn.* 130.
E. ſylv. tenuiſſimis ſetis. *Bauh. pin.* 16. *theat.* 245. —ſ. Hippuris tenuiſſima non aſpera. *Bauh. hiſt.* 3. 730.
Stem ſpiked, fronds compound.

2. Equiſetum arvenſe. *Corn Horſe-tail.*
Lin. ſpec. 1516. *Reich.* 4. 372. *mat. med.* 224. *Fl. lapp.* 390. *ſuec. n.* 928. *hort. cliff.* 471. *Hudſ. angl.* 447. *Curtis lond.* 4. 64. *Lightf. ſcot.* 647. *Relh. cant. n.* 749. *Hall. helv. n.* 1676. *Scop. carn. n.* 1253. *Pollich pal. n.* 949. *Leers herborn. n.* 780. *Villars dauph.* 3. 835. *Gron. virg.* 123. *Blackw. t.* 217. *f.* 3.
E. arv. longioribus ſetis. *Bauh. pin.* 16. *Park. theat.* 1202. 12. *Raii ſyn.* 130. *hiſt.* 128.
E. minus. *Fuchſ. hiſt.* 323.—terreſtre. *Bauh. hiſt.* 3. 730.
E. ſegetale. *Ger.* 956. 3. *emac.* 1114. 3.
Fruit-bearing ſcape naked, barren leafy.

3. Equiſetum paluſtre. *Marſh Horſe-tail.*
Lin. ſpec. 1516. *Reich.* 4. 373. *Fl. lapp.* 392. *ſuec. n.* 929. *Hudſ. angl.* 448. *Light.* 648. *Relh. n.* 750. *Hall. helv. n.* 1677. α. *Scop. carn. n.* 1254. *Pollich pal. n.* 950. *Leers herborn. n.* 781. *Villars dauph.* 3. 835. *Lob. ic.* 795. *Ger.* 952. *emac.* 1114. 4. *Raii ſyn.* 131. *hiſt.* 129.
E. pal. minus. *Park. theat.* 1200.
E. pal. brevioribus ſetis. *Bauh. pin.* 15.
β. E. pal. minus polyſtachion. *Bauh. pin.* 16. *prodr.* 24. *Raii ſyn.* 131. *t.* 5. *f.* 3. *hiſt.* 129.
Stem angular, fronds ſimple.

4. Equiſetum fluviatile. *River Horſe-tail.*
Lin. ſpec. 1517. *Reich.* 373. *Fl. lapp.* 393. *ſuec. n.* 930. *Hudſ. angl.* 448. *Lightf.* 649. *Relh. n.* 751. *Hall. helv. n.* 1675. *Scop. carn. n.* 1255. *Pollich pal. n.* 951. *Leers herborn. n.* 782. *Blackw. t.* 217. *f.* 2.
Equiſetum. *Camer. epit.* 770.—majus. *Ger.* 955. 1. *emac.* 1113. *Raii hiſt.* 128. *ſyn.* 130.—paluſtre. *Park. theat.* 1200. 1.—longioribus ſetis. *Bauh. pin.* 15. *theat.* 242.—majus aquaticum. *Bauh. hiſt.* 3. 728.
Hippuris. *Lob. ic.* 793.
Stem ſtreaked, fronds almoſt ſimple.

5. Equiſetum limoſum. *Smooth Horſe-tail.*
Lin. ſpec. 1517. *Reich.* 373. *Fl. ſuec. n.* 931. *Hudſ. angl.* 448. *Lightf.* 648. *Relh. n.* 752. *Leers herborn. n.* 783. *Gouan illuſtr.* 80. *Hall. helv. n.* 1677. β.
E. nudum lævius. *Raii ſyn.* 131. *t.* 5. *f.* 2.
Stem almoſt naked, ſmooth and even.

6. Equiſetum hyemale. *Rough Horſe-tail.*
Lin. ſpec. 1517. *Reich.* 374. *mant.* 504. *Fl. lapp.* 394. *ſuec. n.* 931. *Hudſ. angl.* 448. *Lightf.* 650. *Relh. n.* 753. *Hall. helv. n.* 1679. *Pollich pal. n.* 952. *Leers herborn. n.* 787. *Gron. virg.* 196. *Villars dauph.* 3. 835.
E. nudum. *Ger.* 955. *emac.* 1113. 2. *Raii ſyn.* 131. *hiſt.* 129.
E. junceum ramoſum. *Park. theat.* 1201. 8.
E. foliis nudum ramoſum. *Bauh. pin.* 16. *Raii hiſt.* 130. 8, 9. *ſyn.* 132.
Stem naked ſcabrous ſubracemed at the baſe.

7. Equiſetum giganteum. *Giant Horſe-tail.*
Lin. ſpec. 1517. *Reich.* 374.
E. altiſſimum ramoſum. *Plum. ſpec.* 11. *ic.* 125. *f.* 2.
Stem ſtreaked arboreſcent, fronds ſimple ſtrict ſpike-bearing.

DESCRIPTIONS, &c.

Roots perennial, creeping.

They are leafleſs herbs, with a hollow ſtreaked ſtem, either ſimple or branched, the branchlets uſually diſpoſed in whorls; it is jointed, and the joints are ſurrounded with a toothed ſheath. The vernal ſtems uſually bear a ſort of cone and ſoon periſh, theſe are ſucceeded by others without cones, and laſting much longer.' Perhaps the former are males, and the latter females, in which the ſex has has not been diſcovered. Hedwig takes the little balls for the ſtigma, and the briſtles covered with duſt, converging in wet, and ſpreading in a dry ſituation, for ſtamens[a].

Linneus, Scopoli, Curtis and others conſider the powder in the ſpikes as the ſeed. M. Adanſon has removed the Horſe-tails from the Cryptogamous plants, and placed them in the family of Pines, from which they differ in every reſpect[b].

1. This grows to the height of a foot or eighteen inches, and even of three or four feet. Stem ſlender, ſcabrous, angular, the angles edged with ſhort ſpinules, ſcarcely viſible without a microſcope. Sheaths large, lax, membranaceous, yellowiſh, commonly divided into three or four deep, triangular dents; and at the baſe of the ſheaths generally twelve green acute dents coaleſce. The whorls

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[a] Juſſieu.

[b] Scop. and Curtis.

are hardly an inch aſunder There are twelve or more (ſixteen to twenty-four *Leers,* twenty-four to thirty *Scop.*) branchlets, or leaves as ſome call them, in a whorl; theſe are very ſlender, about five inches long, quadrangular, and beſet with ſeveral other ſecondary whorls, having five to ſeven branchlets on each; ſo that the whole reſembles a Pine-tree in miniature. The flowering ſpike is at the end of the frond[c].

Native of moſt parts of Europe in woods and ſhady places; flowering in april and may. According to Linneus it is a principal food of horſes in ſome parts of Sweden. Scopoli affirms that it is noxious to kine, making them ſhed their teeth, and bringing on them a diarrhæa. This is alſo ſaid of the next ſpecies.

2. The naked flowering ſtems appear early in the ſpring, and ſoon decay: they are the thickneſs of a large wheat ſtraw, a hand's breadth or more in height, upright, yellowiſh, with from two to five joints, covered with membranous ribbed ſheaths, divided at top into numerous ſegments or teeth. Spike terminating, oblong, ſwelling, about an inch in length, throwing out a greeniſh powder when ripe, which moves as if it were alive, eſpecially if it be breathed upon: every particle has three or four, rarely five fine pellucid threads, club-ſhaped at the end, which occaſion the motion, by extending and curling themſelves up. M. Adanſon takes this duſt to be the pollen, but Mr. Curtis could never obſerve any ſort of exploſion in it, and therefore rather inclines to think that it is the ſeed. The fronds, or leafy ſtems, as they are commonly called, appear after the others; they are a foot or more in height, durable, ſcabrous; the ſheaths divided into numerous, pointed, fuſcous dents: branchlets about eight in a whorl (ſeven to twelve *Lightf.* twelve to fifteen *Leers*) generally ſimple, but ſometimes emitting a branch or two.

Native of moſt parts of Europe, the Levant, Japan, and North America, in corn fields and wet meadows, flowering in march, april and may. It is a troubleſome weed and difficult to extirpate; is reputed noxious to cattle, eſpecially kine, which it affects with a diarrhæa; they do not readily meddle with it[d]. The country people call it *Horſe-pipe* and *Snake-pipe.* It is ſuppoſed to indicate ſubterraneous flowing waters or ſprings.

3. The ſtem is a foot or eighteen inches high, nearly ſmooth, channelled with five or ſix deep furrows; the ſheaths are divided into ſeven or eight acute, black dents, with white edges; from theſe, at flowering time, come out ſix to ten furrowed, ſmooth, ſimple, ſhort branchlets, becoming afterwards longer. Spike terminating, and turning black before it diſperſes the duſt; which is very lively, when freſh from the ſpike.—In marſhes and ditches, flowering in june.

β. has ſmaller fronds, almoſt all the branchlets having a ſpike at the end, but that at the end of the ſtem twice as large as the reſt[e].

This is alſo injurious to kine, as Haller experienced. In Scotland they call it *Paddock-pipe.*

4. This is the largeſt of all the European ſpecies. The ſtem is three or four feet high, the thickneſs of a finger, and ſometimes near an inch in diameter, ſtreaked not furrowed, ſmooth, ſoft, of a pale or whitiſh colour at firſt, but blackiſh in decay; joints numerous; ſheaths ſtreaked, and divided into as many long, linear dents as there are branchlets in the whorl, that is from twenty-four to thiry, thirty-ſix and even forty; the branchlets or leaves are quadrangular and generally ſimple. The ſpikes grow diſtinct from the fronds on ſcapes, but from the ſame root, theſe come out earlier, are a foot or eighteen inches in height, and the ſpikes are replete with a blueiſh powder[f].

Haller tells us that this ſpecies was eaten by the common people among the Romans; and Linneus affirms that rein-deer, who refuſe hay, will however eat this, that it is cut as fodder for kine with a view to increaſe their milk, but that it is not ſo acceptable to horſes.

Native of Europe, on the banks of rivers, lakes, ponds and ditches: flowering in may and june.

5. This grows three or four feet high, and is often quite deſtitute of leaves, but ſometimes produces a few ſtraggling ones. The ſtem is ſmooth, channelled with twelve or more furrows, and terminated with a black oval ſpike. The dents of the ſheath are acute and black, and of the ſame number with the furrows[g].

Haller is of opinion that this is only a variety of the *paluſtre.* Linneus and Leers ſuſpect it to be a variety of the foregoing.

Watery places, lakes, ponds and ditches: flowering in may and june.

6. Stems evergreen, about eighteen inches high, naked and unbranched for the moſt part, but ſometimes emitting two or three lateral branches near the baſe: they are furrowed with eighteen or twenty rough, obtuſe angles, and many of the joints are three inches aſunder. The ſheaths are black at the baſe and edge, and obſcurely indented with as many ſhort, obtuſe teeth as the ſtem has furrows. The flowering-ſpike terminates the ſtem, and the ſheath which immediately ſubtends it, is pale at the baſe, but black at the edge, diſtinctly and acutely toothed.

This is the beſt ſpecies for poliſhing wood and metal, as being the hardeſt and rougheſt. Hence our old writers called it *Shave-graſs.* It is much uſed by the white-ſmiths and cabinet-makers, under the name of *Dutch Ruſhes.* In Northumberland the dairy-maids ſcour their milk-pails with it[h]. Gerarde ſays, that the women ſcower their pewter and wooden things of the kitchen therewith, and thence call it *Pewterwort*; and that the fletchers and comb-makers do rub and poliſh their work with it.

Linneus informs us that it is ſalutary to horſes, noxious to kine, who loſe their teeth by feeding on it, and that ſheep avoid it[i]. How this may be I know not; but I am perſuaded, with Mr. Lightfoot, that the paſture muſt be very bad, where any cattle are compelled to eat ſuch food.

Native of Europe, by river ſides, in bogs and watery places, and in wet marſhy places in woods: flowering in july and auguſt; alſo of Japan.

7. We have no deſcription of this ſpecies.—It is a native of South America.

PROPAGATION AND CULTURE.

Though the Horſe-tails be inhabitants of the water, or at leaſt flouriſh beſt where they can lodge their perennial creeping roots in a wet ſoil or ſtrong clay which holds the wet, yet they will grow without difficulty in a garden, eſpecially near water, or under a north wall, or in the ſhade: they require only to be kept within bounds, as they run much at the root; it is better therefore to plant them in pots, plunged in the earth, than in the open ground.

It is not ſo eaſy to extirpate them from cultivated lands. Haller ſays that he tried in vain to accompliſh it by plowing, dunging, and other methods; and that any one who publiſhed the ſecret of deſtroying this unpropitious weed, ſo injurious to kine, would merit a conſiderable reward. I ſhould conceive that draining lands infeſted with it, would have the beſt chance of removing the evil.

EQUISETUM. See *Ceratophyllum, Chara, Hippuris.*

———— paluſtre. See *Elatine.*

ERACLISSA hexagyna of Forſkahl. The ſame with *Andrachne telephoides.*

ERAGROSTIS. See *Briza.*

ERANGELIA. See *Galanthus.*

ERANTHĔMUM. (*From εαρα, the earth, and ανθος, a flower.*)

Lin. gen. n. 23. *Reich.* 24. *Schreb. n.* 30. *Juſſ.* 110.

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[c] Lightf. and Leers.
[d] Curtis, Linn. Leers, Lightf. Haller.
[e] Leers, Lightf.
[f] Lightf. Leers, Haller.
[g] Lightfoot.
[h] Ibid.
[i] Fl. ſuec. from Loeſel.

Claſſ. 2. 1. Diandria Monogynia.
Nat. order of *Aggregatæ*. *Vitices*. Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* five-cleft, tubular, very narrow, upright, ſhort, acuminate, permanent.

Cor. one-petalled, funnel-form. *Tube* filiform, extremely long. *Border* five-parted (four-parted ſometimes,) flat: *diviſions* obovate.

Stam. *Filaments* two, very ſhort, in the mouth of the corolla. *Anthers* ſubovate, compreſſed, beyond the tube.

Pist. *Germ* ovate, very ſmall. *Style* filiform, length of the ſtamens. *Stigma* ſimple.

Per.

Seeds

Obs. *I ſaw but a ſingle ſpecimen, and therefore commit it to the attentive examination of others.*

ESSENTIAL CHARACTER.

Cor. five-cleft, with a filiform tube. *Anthers* beyond the tube. *Stigma* ſimple. *Fruit*

SPECIES.

1. Eranthemum capenſe.
Lin. ſpec. 12. *Reich.* 1. 22. *Fl. zeyl. n.* 15. *amœn.* 385. *Herm. parad.* 153. *Amm. herb.* 232. (Ephemerum). *Raii ſuppl.* 529. *n.* 10. (Centaurium).
Leaves lanceolate-ovate petioled.

2. Eranthemum anguſtifolium.
Lin. ſyſt. 57. *Reich.* 22. *Burm. afr.* 130. *t.* 47. *f.* 3. *Pluk. mant. t.* 445. *f.* 6. (Thymelæa). *Raii ſuppl.* 245. 4. (Valerianoides). *Comm. hort.* 2, 221. *t.* 111?
Selago dubia. *Lin. ſpec.* 877.
Leaves linear remote patulous.

3. Eranthemum parvifolium.
Lin. ſyſt. 58. *Reich.* 22. *mant.* 171. *Berg. cap.* 2. *Comm. amſt.* 2. 119. *t.* 60.
Leaves ovate-linear imbricate.

4. Eranthemum ſalſoloides.
Lin. ſyſt. 58. *ſuppl.* 82.
Leaves fleſhy nearly columnar linear very ſmooth, racemes axillary, they and the calyxes pubeſcent, tube bent back.

5. Eranthemum ſpinoſum.
Lour. cochinch. 19.
Leaves ovate oppoſite, ſtipules ſpiny, flower ſolitary lateral.

DESCRIPTIONS, &c.

Theſe are underſhrubs or herbs, natives of the Cape of Good Hope. Leaves oppoſite or alternate. Flowers in terminating ſpikes[a].

1. The herb has the appearance of *Phlox*, *Lychnis*, or *Mirabilis*. Leaves lanceolate-ovate or ovate, ſharp to both ends, oppoſite, on long petioles, quite entire, ſmooth, veined, large. Stems long, terminated by one or three ſpikes from lanceolate, green, imbricate bractes; within each of theſe a long purple flower, like that of *Phlox*[b].

It has the air of *Chironia*, but ſhould be examined more carefully[c].

2. Stem erect, branched. Leaves crowded. Racemes ſimple, very long, erect. Tube of the corolla very long, with a ſmall obtuſe border. Anthers incumbent, linear[d].

3. Leaves ſhort. Bractes ovate[e].

4. A ſhrub reſembling *Salſola*, but with axillary, pubeſcent racemes at the ends of the branches: pedicels reflex, and at the origin of each three ſubulate bractes. Calyx five-parted, with ſubulate, pubeſcent diviſions: tube of the corolla longer than the calyx, bent back in the middle; diviſions of the border ovate, acuminate[f].

5. Stem ſuffruticoſe, a foot high, ceſpitoſe, erect, with ſhort riſing branches, ſpiny ſtipules and bractes. Leaves ſmall, quite entire, hairy. Flower pale violet, ſolitary, lateral, peduncled. Calyx two-leaved, with acuminate erect leaflets. Tube of the corolla curved at the baſe; border five-cleft, ſpreading. Filaments placed in the tube, and exceeding it in length; anthers oblong, incumbent. Style ſhort, with a thickiſh ſtigma. Capſule ſuperior, ovate, two-celled, many ſeeded.

Native of Africa, in the ſuburbs of Moſambique[g].

Erebinthus. See *Galega*.

Eresia. See *Theophraſta*.]

ERICA, (*of Pliny.* Ερεικη *of Theophraſtus. From* ἐρίκω, *or* ἐρείκω, *frango, to break; from its ſuppoſed quality of breaking the ſtone in the bladder.*)
Engl. *Heath.* Fr. *Bruyere.*
Lin. gen. n. 484. *Reich.* 524. *Schreb.* 659. *Tourn.* 373. *α.* *Juſſ.* 160. *Gærtn. t.* 63.
Claſſ. 8. 1. Octandria Monogynia.
Nat. Order of *Bicornes*. *Ericæ* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* four-leaved; leaflets ovate-oblong, permanent.

Cor. one-petalled, bell-form, four-cleft, often bellied.

Stam. *Filaments* eight, capillary, inſerted into the receptacle. *Anthers* two-cleft at the tip.

Pist. *Germ* roundiſh, ſuperior. *Style* filiform, upright, longer than the ſtamens. *Stigma* crowned, four-cornered, four-cleft.

Per. *Capſule* roundiſh, ſmaller than the calyx; covered, four-celled, four-valved: *partitions* meeting with the ſutures, (oppoſite to the ſutures, *G.*)

Seeds numerous, very ſmall.

Obs. *There are ſome ſpecies with a double calyx.*
The figure of the corolla as to ovate and oblong differs in the different ſpecies.
The anthers in ſome are emarginate; in others two-horned, or awned: included, or ſtanding out.
The ſtamens in ſome are longer, and in others ſhorter than the corolla.
The ſtigma is alſo different in different ſpecies.

ESSENTIAL CHARACTER.

Cal. four-leaved. *Cor.* four-cleft. *Filaments* inſerted into the receptacle. *Anthers* cloven. *Capſ.* four-celled.

SPECIES.

* *Anthers awned, leaves oppoſite.*

1. Erica vulgaris. *Common Heath.*
Lin. ſpec. 501. *ſyſt.* 363. *Reich.* 2. 168. *diſſ.* 1. *Fl. lapp. n.* 141. *ſuec.* 336. *Thunb. monogr.* 45. *Gærtn. fruct.* 1. 302. *Hudſ. angl.* 165. *Wither. arr.* 396. *Lightf. ſcot.* 203. *Relh. cant. n.* 297. *Curtis lond.* 5. *t.* 30. *Hall. helv. n.* 1012. *Scop. carn. n.* 460. *Pollich pal. n.* 378. *Leers herborn. n.* 293. *Neck. gallob.* 182. *Gunn. norv. n.* 15. *Fl. dan. t.* 677. *Gmel. ſib.* 4. 129. *n.* 20. *Pallas roſſ.* 2. 59. *Krock. ſileſ. n.* 597. *Villars dauph.* 3. 514. *Plenck, ic. t.* 301. *Park. theat.* 1480. 1. *Raii hiſt.* 1713. *ſyn.* 470.
E. vulg. glabra. *Bauh. pin.* 485.
E. vulg. ſ. pumila. *Ger.* 1196. 1, 2. *emac.* 1380. 1.
E prima. *Matth.* 152. *Camer. epit.* 75.
E. vulg. humilis ſempervirens fl. purpureo & albo. *Bauh. hiſt.* 1. 354.
β. E. vulg. hirſuta. *Ger. emac.* 1380. *Raii ſyn.* 471.
Corollas bell-ſhaped almoſt equal, calyxes double (the inner longer than the corolla) leaves ſagittate (imbricate in four rows, St.)

[2. Erica lutea. *Yellow Heath.*
Lin. ſyſt. 364. *Reich.* 2. 169. *mant.* 234. *Berg. cap.* 115. *Thunb. monogr.* 33. *n.* 49.
Corollas ovate acuminate, flowers heaped, leaves linear.

Leaves in threes.

3. Erica halicacaba. *Purple-ſtalked Heath.*
Lin. ſpec. 507. *ſyſt.* 364. *Reich.* 2. 169. *amoen.* 6. *afr.* 15. *Thunb. monogr.* 33. *n.* 51.
Corollas ovate inflated, ſtyle included, flowers ſolitary.

4. Erica regerminans.
Lin. ſyſt. 364. *Reich.* 2. 169. *mant.* 232. *Thunb. mon.* 35. *n.* 54.
Corollas ovate, ſtyle included, calyxes acute, flowers racemed.

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[a] Juſſieu.
[b] Linn. zeyl.
[c] Linn. ſpec.
[d] Ibid.
[e] Bergius.
[f] Linn. ſuppl.
[g] Loureiro.

5. Erica Monſoniana. *Bladder-flowered Heath.*
Lin. ſyſt. 364. *ſuppl.* 223. *Thunb. mon.* 34. *n.* 52. *t.* 1.
Flowers at the ends of obtuſe branchlets, calyx calycled, corolla oblong inflated, ſtyle included.

6. Erica mucoſa. *Mucous Heath.*
Lin. ſyſt. 364. *Reich.* 2. 170. *mant.* 232. *Thunb. mon.* 46. *n.* 76.
E. ferrea. *Berg. cap.* 112.
Corollas ſubglobular mucous, ſtyle included.

7. Erica urceolaris. *Hairy-flowered Heath.*
Ait. hort. kew. 2. 15. *Berg. cap.* 107. *Thunb. monogr. n.* 55.
Flowers umbelled, calyxes lanceolate, corollas ovate-conical villoſe, ſtyle included.

8. Erica marifolia. *Marum-leaved Heath.*
Ait. hort. kew. 2. 15.
Leaves ovate pubeſcent whitiſh underneath, corollas ovate-conical, ſtyle of a middling length.

9. Erica Bergiana.
Lin. ſyſt. 364. *Reich.* 2. 170. *mant.* 235. *Thunb. mon.* 48. *n.* 81.
Calyxes reflex, corollas bell-ſhaped, ſtyle included.

10. Erica depreſſa.
Lin. ſyſt. 364. *Reich.* 2. 171. *mant.* 230. *Thunb. mon.* 33. *n.* 50.
Stem depreſſed, flowers few, corollas bell-ſhaped, ſtyle included.

11. Erica pilulifera.
Lin. ſpec. 507, *ſyſt.* 364. *Reich.* 2. 171. *Thunb. mon.* 40. *n.* 65.
Flowers umbelled, corollas bell-ſhaped, ſtyle included.

12. Erica viridi-purpurea.
Lin. ſpec. 502. *ſyſt.* 364. *Reich.* 2. 171. *hort. cliff.* 148. *Sauv. monſp.* 170.
E. vireſcens. *Thunb. mon. n.* 59.
E. major, floribus ex herbaceo-purpureis. *Bauh. pin.* 485. *Park. theat.* 1481. *n.* 3. *Raii hiſt.* 1715.
E. corios folio 3. *Cluſ. hiſt.* 1. 42.
Flowers ſcattered, corollas bell-ſhaped, ſtyle included.

13. Erica pentaphylla.
Lin. ſpec. 506. *ſyſt.* 364. *Reich.* 2. 171. *Seba muſ.* 1. 32. *t.* 21. *f.* 2.
Flowers pubeſcent, corollas bell-ſhaped, ſtyle included.

14. Erica nigrita.
Lin. ſyſt. 364. *Reich.* 2. 172. *mant.* 65. *Burm. prodr.* 11. *Thunb. mon.* 35. *n.* 53.
E. laricina. *Berg. cap.* 94. *Seba muſ.* 2. 11. *t.* 9. *f.* 7.
Calyxes imbricate three-flowered ſeſſile, corollas bell-ſhaped, ſtyle included.

15. Erica planifolia.
Lin. ſpec. 508. *ſyſt.* 364. *Reich.* 2. 172. *Berg. cap.* 100. *Pluk. mant. t.* 347. *f.* 1. *Thunb. mon.* 38. *n.* 60.
Leaves ſpreading very much, corollas bell-ſhaped, ſtyle ſtanding out.

16. Erica ſcoparia. *Small green-flowered* or *bruſh Heath.*
Lin. ſpec. 502. *ſyſt.* 364. *Reich.* 2. 172. *Sauv. monſp.* 170. *Park. theat.* 1481. *n.* 4. *Villars dauph.* 3. 515. *Thunb. mon.* 48. *n.* 80.
E. major ſcoparia, foliis deciduis. *Bauh. pin.* 485.
E. ſcoparia floſculis herbaceis. *Lob. ic.* 2. 215.
E. pyramidalis. *Ger.* 1197. 6. *emac.* 1381. 6.
E. coris folio 4. *Cluſ. hiſt.* 1. 42.
E. arboreſcens, flor. luteolis vel herbaceis minimis. *Bauh. hiſt.* *Raii hiſt.* 1715.
Corollas bell-ſhaped, ſtigma ſtanding out peltate.]

17. Erica arborea. *Tree Heath.*
Lin. ſpec. 502. *ſyſt.* 365. *Reich.* 2. 173. *hort. cliff.* 47. *Hall. helv. n.* 1014. *Sauv. monſp.* 170. 46. *Thunb. mon.* 40. *n.* 63.
E. maxima alba. *Bauh. pin.* 485.—major fl. albo. *Ger. emac.* 1381. *f.* 3.
E. coris folio 1. *Cluſ. hiſt.* 1. 4.—maxima alba. *Park. theat.* 1481. 1. *Raii hiſt.* 1714.
Branchlets hoary, corollas bell-ſhaped, ſtyle ſtanding out.

[18. Erica veſpertina.
Lin. ſyſt. 365. *ſuppl.* 221.
E. calycina. *Thunb. mon. n.* 78.
Corollas bell-ſhaped, ſtyle ſtanding out.

19. Erica cruenta. *Bloody-flowered Heath.*
Ait. hort. kew. 2. 16.
Leaves ſmooth, bractes remote, calyxes awl-ſhaped dilated at the baſe, corollas cylindrical incurved, ſtyle ſtanding out.

Leaves in fours.

20. Erica ramentacea. *Slender-branched Heath.*
Lin. ſyſt. 365. *Reich.* 2. 173. *mant.* 65. *Thunb. mon.* 51. *n.* 87.
E. multumbellifera. *Berg. cap.* 110.
Leaves briſtle-ſhaped, corollas globular, ſtyle included, ſtigma doubled.

21. Erica perſoluta. *Bluſh-flowered Heath.*
Lin. ſyſt. 365. *Reich.* 2. 173. *mant.* 230. *Thunb. mon.* 39. *n.* 62.
E. ſubdivaricata. *Berg. cap.* 114.
Calyxes ciliate, corollas bell-ſhaped, ſtyle included.

22. Erica ſtrigoſa. *Dwarf downy Heath.*
Ait. hort. kew. 2. 17.
Leaves pubeſcent ciliate, corollas bell-ſhaped ſmooth, ſtyle ſtanding out.

23. Erica Tetralix. *Croſs-leaved Heath.*
Lin. ſpec. 502. *ſyſt.* 365. *Reich.* 2. 174. *hort. cliff.* 148. *fl. ſuec. n.* 337. *Hudſ. angl.* 166. *Wither. arr.* 398. *Curtis lond.* 1. *t.* 21. *Lightf. ſcot.* 205. *Relh. cant. n.* 298. *Fl. dan. t.* 81. *Neck. gallob.* 181. *Krock. ſileſ. n.* 598. *Thunb. mon.* 41. *n.* 66.
E. ex rubro nigricans ſcoparia. *Bauh. pin.* 486.
E. major flore purpureo. *Ger. emac.* 1382. *n.* 4. (not the figure).
E. pumila. *Park. theat.* 1483. *n.* 5. 1482. *f.* 5.
E. brabantica folio coridis hirſuto quaterno. *Bauh. hiſt.* 1. 358. *Raii hiſt.* 1714. *ſyn.* 471.
E. fol. cor. 13. *Cluſ. hiſt.* 46.
Leaves ciliate, flowers in heads, corollas ovate, ſtyle included.

24. Erica pubeſcens.
Lin. ſpec. 506. *ſyſt.* 365. *Reich.* 2. 174. *Thunb. mon.* 38. *n.* 61.
β. E. parviflora. *Lin. ſpec.* 506. *Thunb. mon. t.* 5.
Leaves rugged, flowers ſeſſile lateral, corollas ovate, ſtyle included.

25. Erica abietina. *Fir Heath.*
Lin. ſpec. 506. *ſyſt.* 365. *Reich.* 2. 174. *hort. cliff.* 148. *Berg. cap.* 105. *Thunb. mon.* 42. *n.* 68. *Buxb. cent.* 4. 25. *t.* 41, 42. *Raii dendr.* 96. *Seba muſ.* 1. 31. *t.* 21. *f.* 1.
Flowers ſeſſile, corollas fig-ſhaped, ſtyle included.

26. Erica mammoſa.
Lin. ſyſt. 365. *Reich.* 2. 175. *mant.* 234. *Thunb. mon.* 42. *n.* 69.
Corollas fig-ſhaped, ſtyle ſtanding out.

27. Erica caffra.
Lin. ſpec. 502. *ſyſt.* 365. *Reich.* 2. 175. *hort. cliff.* 148.
Leaves pubeſcent, flowers heaped, corollas ovate, ſtyle ſtanding out.

28. Erica ſeſſiliflora.
Lin. ſyſt. 365. *ſuppl.* 222.
E. ſpicata. *Thunb. mon. n.* 71.
Flowers in a ſpike ſeſſile bent down oblong, corollas club-ſhaped, ſtyle ſtanding out.

Leaves ſcattered.

29. Erica faſcicularis.
Lin. ſyſt. 365. *ſuppl.* 219.
E. octophylla. *Thunb. mon. n.* 72.
Leaves ſeveral linear truncated, flowers in bundles, corollas fig-ſhaped, ſtyle included.

** *Anthers creſted, leaves in threes.*

30. Erica triflora.
Lin. ſpec. 508. *ſyſt.* 366. *Reich.* 2. 175. *Thunb. mon. n.* 79. *t.* 5.
Flowers terminating, corollas globular bell-ſhaped, ſtyle included.

31. Erica baccans. *Arbutus-flowered Heath.*
Lin. ſyſt. 366. *Reich.* 2. 175. *mant.* 233. *Thunb. mon. n.* 88. *Seba muſ.* 1. 32. *t.* 21. *f.* 3.
Leaves imbricate, corollas globular-bell-ſhaped, covered, ſtyle included.

32. Erica gnaphalodes.
Lin. ſpec. 508. *ſyſt.* 366. *Reich.* 2. 176. *Thunb. mon. n.* 75. *Pluk. mant. t.* 346. *f.* 11.
Corollas ovate covered, ſtyle included, ſtigma four-parted.

33. Erica corifolia. *Slender-twigged Heath.*
Lin. ſpec. 507. *ſyſt.* 366. *Reich.* 2. 176. *Berg. cap.* 108. *Thunb. mon. n.* 77. *Seba muſ.* 1. 32. *t.* 21. *f.* 3. *Pluk. mant. t.* 346. *f.* 5. *Petiv. gaz. t.* 3. *f.* 7.
Flowers umbelled, calyxes turbinate; corollas ovate, ſtyle included.

34. Erica articularis.
Lin. ſyſt. 366. *Reich.* 2. 177. *mant.* 65. *Thunb. mon. n.* 58.
Corollas ovate acuminate; ſtyle included longer than the calyx.

35. Erica calycina.
Lin. ſpec. 507. *ſyſt.* 366. *Reich.* 2. 177. *Berg. cap.* 119. *Thunb. mon. n.* 78? *Seba muſ.* 2. 13. *t.* 11. *f.* 7.
E. gnaphalodes. *Berg. cap.* 119.
Calyxes ſpreading very much wheel-ſhaped, corollas ovate, ſtyle included.]

36. Erica cinerea. *Fine-leaved Heath.*
Lin. ſpec. 501. *ſyſt.* 366. *Reich.* 2. 177. *Hudſ. angl.* 165. *Wither. arr.* 399. *Curtis lond.* 2. 25. *Lightf. ſcot.* 204. *Relh. cant. n.* 299. *Fl. dan. t.* 38. *Thunb. mon. n.* 85.
E. humilis. *Neck. gallob.* 182.——cortice cinereo, arbuti flore. *Bauh. pin.* 486.
E. tenuifolia. *Ger.* 1198. 7. *emac.* 1382. 7. *Raii hiſt.* 1713. *ſyn.* 471.
E. virgata 5. ſexta Cluſii. *Park. theat.* 1483. 8.
E. coris folio 6. *Cluſ. hiſt.* 1. 43. 2. *Lob. obſ.* 620. 1.
β. E. coris fol. 5. *Cluſ. hiſt.* 1. 43.
E. ternis per intervalla ramulis. *Bauh. pin.* 486.
Corollas ovate, ſtyle a little ſtanding out, ſtigma capitate.

[37. Erica paniculata. *Panicled Heath.*
Lin. ſpec. 508. *ſyſt.* 366. *Reich.* 2. 178. *Berg. cap.* 96. *Pluk. alm. t.* 175. *f.* 2. *Seba muſ.* 2. 46. *t.* 44. *f.* 4.
Flowers minute, corollas bell-ſhaped, ſtyle ſtanding out.

38. Erica auſtralis. *Spaniſh Heath.*
Lin. ſyſt. 366. *Reich.* 2. 178. *mant.* 231. *Thunb. mon. n.* 86.
Leaves ſpreading, corollas cylindric, ſtyle ſtanding out.

Leaves in fours.

39. Erica phyſodes.
Lin. ſpec. 506. *ſyſt.* 366. *Reich.* 2. 178. *Berg. cap.* 108. *Thunb. mon. n.* 89.
Flowers ſubſolitary, corollas ovate inflated, ſtyle included.

40. Erica empetrifolia. *Crowberry-leaved Heath.*
Lin. ſpec. 507. *ſyſt.* 366. *Reich.* 2. 179. *Berg. cap.* 28. *Thunb. mon. n.* 70.
Flowers ſeſſile lateral, corollas ovate.

41. Erica cernua.
Lin. ſyſt. 367. *ſuppl.* 222. *Montin. in act. nov. upſ.* 2. 292. *t.* 9. *f.* 3. *Thunb. mon. n.* 90.
Flowers ovate capitate, calyxes ciliate, anthers included.

42. Erica retorta.
Lin. ſyſt. 367. *ſuppl.* 220. *Montin. in act. holm.* 1774. *p.* 297. *t.* 7. *Thunb. mon. n.* 91.
Leaves recurved, corollas ovate-oblong, ſtyle of a middling length.

43. Erica margaritacea. *Pearl-flowered Heath.*
Ait. hort. kew. 2. 20.
Corollas pitcher-bell-ſhaped, ſtyle of a middling length.

*** *Anthers awnleſs included: leaves oppoſite.*

44. Erica tenuifolia.
Lin. ſpec. 507. *ſyſt.* 367. *Reich.* 2. 179. *Thunb. mon. n.* 2. *Berg. cap.* 116. *Seba muſ.* 2. 11. *t.* 9. *f.* 8.
Corolla and calyx blood-red.

45. Erica Paſſerinæ.
Lin. ſyſt. 367. *ſuppl.* 221. *Thunb. mon. n.* 16.
E. Paſſerina. *Montin. in act. nov. upſ.* 2. 289. *t.* 9. *f.* 1?
Corollas bell-ſhaped, ſtyle ſtanding out (included, Th.)

Leaves in threes.

46. Erica albens.
Lin. ſyſt. 367. *Reich.* 2. 179. *mant.* 231.
Racemes pointing one way, corollas ovate-oblong acute.

47. Erica ſpumoſa. *Six-angled Heath.*
Lin. ſpec. 508. *ſyſt.* 367. *Reich.* 2. 180. *amoen.* 6. *afr.* 14. *Thunb. mon. n.* 14. *Berg. cap.* 103. *Seba muſ.* 2. 11. *t.* 9. *f.* 10. (bad.)
E. ſcarioſa. *Berg. cap.* 102.
Corollas in threes covered by a common calyx; ſtyle ſtanding out.

48. Erica capitata. *Woolly Heath.*
Lin. ſpec. 504. *ſyſt.* 367. *Reich.* 2. 180. *Berg. cap.* 94. *Thunb. mon. n.* 15. *Pet. gaz.* 5. *t.* 2. *f.* 10. *Seba muſ.* 1. 30. *t.* 20. *f.* 1. *Raii dendr.* 98. *n.* 35.
Flowers ſeſſile, corollas covered with a woolly calyx, anthers middling.

49. Erica melanthera.
Lin. ſyſt. 367. *Reich.* 2. 180. *mant.* 232. *Thunb. mon. n.* 12.
Corollas bell-ſhaped longer than the coloured calyx, anthers middling, ſtyle ſtanding out.

50. Erica Thunbergii.
Lin. ſyſt. 367. *ſuppl.* 220. *Montin. in act. nov. upſ.* 2. 290. *t.* 9. *f.* 2. *Thunb. mon. n.* 4.
Corollas flat with a globular tube, anthers middling, ſtyle ſtanding out.

51. Erica abſynthoides.
Lin. ſyſt. 368. *Reich.* 2. 181. *mant.* 66. *Pluk. phyt. t.* 47. *f.* 14.
E. virgata. *Thunb. mon. n.* 18.
Corollas ovate-bell-ſhaped, ſtyle ſtanding out; ſtigma funnel-ſhaped.]

52. Erica ciliaris. *Ciliated Heath.*
Lin. ſpec. 503. *ſyſt.* 368. *Loefl. itin.* 138. *Thunb. mon. n.* 19.
E. hirſuta anglica. *Bauh. pin.* 602.
E. 12. *Cluſ. hiſt.* 1. 46.
E. tenuifolia calyculata. *Ger.* 1198. *f.* 8. *emac.* 1382. *f.* 8. *Raii hiſt.* 1716.
Racemes pointing one way, corollas ovate fig-ſhaped, ſtyle ſtanding out.

[53. Erica hiſpidula.
Lin. ſyſt. 368. *ſuppl.* 222. *Thunb. mon. n.* 20.
Stem hiſpid, leaves about three ovate acute ciliate, corollas roundiſh.

54. Erica petiolata. *Roſemary-leaved Heath.*
Ait. hort. kew. 2. 21. *Thunb. monogr. n.* 7. *t.* 6.
Leaves oblong petioled, corollas in threes ovate the length of the calyx, anthers ſtanding out a little, ſtyle ſtanding out.

55. Erica leucanthera.
Lin. ſyſt. 368. *ſuppl.* 223. *Thunb. mon. n.* 13.
Flowers in threes, calyx white, corolla bell-ſhaped, anthers and ſtyle ſtanding out.

Leaves in fours or more.

56. Erica tubiflora. *Tube-flowered Heath.*
Lin. ſpec. 505. *ſyſt.* 368. *Reich.* 2. 182. *Seba muſ.* 1. *t.* 20. *f.* 4. *Thunb. mon. n.* 31.
Leaves ſubciliate, corollas club-fig-ſhaped, anthers and ſtyle included.

57. Erica curviflora. *Curve-flowered Heath.*
Lin. ſpec. 505. *ſyſt.* 368. *Reich.* 2. 182. *hort. cliff.* 148. *Thunb. mon. n.* 30. *Seba muſ.* 2. *t.* 19. *f.* 5.
Leaves ſmooth, corollas club-fig-ſhaped, anthers and ſtyle included.

58. Erica coccinea.
Lin. ſpec. 505. *ſyſt.* 368. *Reich.* 2. 182. *Thunb. mon. n.* 27. *Raii dendr.* 98. *n.* 24. *Seba muſ.* 1. 32. *t.* 21. *f.* 4.
Calyxes hirſute, corollas club-fig-ſhaped, anthers ſubincluded, ſtyle included.

59. Erica conſpicua. *Long-tubed yellow Heath.*
Ait. hort. kew. 2. 22.
Leaves ſmooth, corollas cylindric curved very long hairy, with a revolute border, anthers ſubincluded, ſtyle ſtanding out.

60. Erica cerinthoides. *Honeywort-flowered Heath.*

Lin. ſpec. 505. *ſyſt.* 368. *Reich.* 2. 183. *Barth. act.* 2. 57. *Breyn. cent.* 25. *t.* 33. *Seba muſ.* 2. *t.* 22. *f.* 4. & *t.* 34. *f.* 6. *Curt. magaz. t.* 220. *Thunb. mon. n.* 33.

Corollas club-fig-ſhaped, ſtigma included cruciate.

61. Erica faſtigiata.

Lin. ſyſt. 368. *Reich.* 2. 183. *mant.* 66. *Burm. prodr.* 11. *Thunb. mon. n.* 37.

Corollas ſalver-ſhaped in bundles, ſtyle included.

62. Erica cubica.

Lin. ſyſt. 368. *Reich.* 2. 183. *mant.* 233. *Thunb. mon. n.* 46.

Calyxes four-cornered, corollas bell-ſhaped acute, ſtyle included.

63. Erica denticulata.

Lin. ſyſt. 368. *Reich.* 2. 184. *mant.* 229.

E. dentata. *Thunb. mon. n.* 39.

Calyxes toothletted, corollas ovate-funnel-ſhaped, ſtyle included.

64. Erica viſcaria. *Clammy-flowered Heath.*

Lin. ſyſt. 369. *Reich.* 2. 184. *mant.* 231. *Thunb. mon. n.* 40.

Flowers in racemes, corollas bell-ſhaped glutinous, ſtyle included.

65. Erica granulata.

Lin. ſyſt. 369. *Reich.* 2. 184. *mant.* 234.

Calyxes ſubimbricate, corollas globular, ſtyle included.

66. Erica comoſa. *Tufted-flowered Heath.*

Lin. ſyſt. 369. *Reich* 2. 185. *mant.* 234. *Thunb. mon. n.* 38.

Flowers heaped, corollas ovate-oblong, ſtyle included.

67. Erica Sparrmanni.

Lin. ſyſt. 369. *ſuppl.* 219. *Act. holm.* 1778. *p.* 24. *t.* 2. *Thunb. mon. n.* 34.

Leaves imbricate ciliate, heads four-flowered, corollas tubular ſtrigoſe-hiſpid, anthers ſubincluded.

68. Erica concinna. *Fleſh-coloured Heath.*

Ait. hort. kew. 2. 23.

Leaves in ſixes or thereabouts ſmooth, flowers terminating umbelled, corollas cylindric attenuated at the baſe.

69. Erica Maſſoni. *Tall downy Heath.*

Lin. ſyſt. 369. *ſuppl.* 221. *Thunb. mon. n.* 35.

Leaves in eight rows imbricate pubeſcent, flowers capitate, corollas cylindric fig-ſhaped.

**** *Anthers awnleſs ſtanding out, leaves in threes.*

70. Erica Plukenetii. *Smooth-twigged Pencil-flowered Heath.*

Lin. ſpec. 504. *ſyſt.* 369. *Reich.* 2. 185. *Pluk. mant. t.* 344. *f.* 3. *Seba muſ.* 2. *t.* 25. *f.* 5. *Thunb. mon. n.* 22.

Calyxes ſimple, corollas cylindric, anthers very long, ſtyle ſtanding out.

71. Erica Petiveri. *Downy-twigged Pencil-flowered Heath.*

Lin. ſyſt. 369. *Reich.* 2. 185. *mant.* 235. *Thunb. mon. n.* 21.

E. Plukenetii. *Berg. cap.* 91.

Calyxes imbricate, corollas acute, anthers very long, ſtyle ſtanding out.

72. Erica nudiflora.

Lin. ſyſt. 369. *Reich.* 2. 186. *mant.* 229. *Smith ic. ined.* 3. *t.* 57.

Branches tomentoſe, corollas cylindric ſcattered.

73. Erica Bruniades.

Lin. ſpec. 504. *ſyſt.* 369. *Reich.* 2. 186. *Petiv. gaz. t.* 2. *f.* 9. *Pluk. mant. t.* 347. *f.* 9. *Seba muſ.* 2. 64. *t.* 63. *f.* 7.

Flowers ſcattered, corollas covered by a woolly calyx, ſtyle ſtanding out.

74. Erica imbricata.

Lin. ſpec. 503. *ſyſt.* 369. *Reich.* 2. 186. *Thunb. mon. n.* 11.

E. quinquangularis. *Berg. cap.* 372.

Corollas bell-ſhaped, covered with the imbricate calyx, ſtyle ſtanding out.

75. Erica umbellata.

Lin. ſpec. 501. *ſyſt.* 369. *Reich.* 2. 187. *Loefl. itin.* 138. *Thunb. mon. n.* 6.

Leaves aceroſe, corollas bell-ſhaped, ſtyle ſtanding out.

Leaves in fours or more.

76. Erica purpuraſcens.

Lin. ſpec. 503. *ſyſt.* 370. *Reich.* 2. 187. *Segu. ver.* 280. *Thunb. mon. n.* 44.

E. procumbens dilute purpurea. *Bauh. pin.* 486. *Raii hiſt.* 1715.

E. coris folio 7. *Cluſ. hiſt.* 1. 43.—fl. purp. dilutioris coloris. *Bauh. hiſt.* 1. 358.

Flowers ſcattered, corollas bell-ſhaped, ſtyle ſtanding out.

77. Erica vagans. *Wandering Heath.*

Lin. ſyſt. 370. *Reich.* 2. 187. *mant.* 230. *Engl. bot. t.* 3. *Thunb. mon. n.* 45. (ſee n. 80. which is the ſame.)

Flowers ſolitary, corollas bell-ſhaped, ſtyle ſtanding out.]

78. Erica herbacea. *Early-flowering dwarf Heath.*

Lin. ſpec. 501. *ſyſt.* 370. *Reich.* 2. 188. *Hall. helv. n.* 1013. *Curt. magaz. t.* 11. *Krock. ſileſ. n.* 599. *Thunb. mon. n.* 43.

E. carnea. *Lin. ſpec.* 504. *Jacqu auſtr.* 1. 21. *t.* 32. *Scop. carn. n.* 461.

E. procumbens herbacea—&, ternis fol. carnea. *Bauh. pin.* 486. *Raii hiſt.* 1716. *n.* 13, 14.

E. coris folio 8, 9. *Cluſ. hiſt.* 1. 44.

E. ſupina herbacea, & carnea. *Park. theat.* 1484. *n.* 2, 3.

E. cruciata. *Ger. emac.* 1381. *f.* 5.—&, coris folio 9 Cluſii. 1385. *f.* 15.

Flowers directed all one way, corollas oblong, ſtyle ſtanding out.

[79. Erica multiflora. *Many-flowered Heath.*

Lin. ſpec. 503. *ſyſt.* 370. *Reich.* 2. 188. *Thunb. mon. n.* 42.

E. fol. corios multiflora. *Bauh. hiſt.* 1. 356. *Raii hiſt.* 1714. *n.* 7.

E. coris folio altera. *Cluſ. hiſt.* 1. 42. *n.* 2.

E. juniperifolia denſe fruticans narbonenſis. *Lob. obſ.* 620. *Garid. aix.* 160. *t.* 32. (good).

Leaves in fives, flowers ſcattered, corollas cylindric, ſtyle ſtanding out.

80. Erica didyma. *Double-anthered Heath.*

Wither. arr. 400.

E. multiflora. *Hudſ. angl.* 166.

E. fol. corios multiflora. *Raii ſyn.* 471.—humilior. *Raii hiſt.* 1714. ſub. *n.* 7.

Leaves in fives, peduncles ſcattered longer than the flower, corollas bell-ſhaped, anthers twin, ſtyle ſtanding out.

81. Erica mediterranea. *Mediterranean Heath.*

Lin. ſyſt. 370. *Reich.* 2. 189. *mant.* 229. *Thunb. mon. n.* 41.

E. maxima purpuraſcens, longioribus foliis. *Bauh. pin.* 485.

E. fol. corios quaternis, flore purpuraſcente. *Bauh. hiſt.* 1. 356.

E. coris fol. 2. *Cluſ. hiſt.* 1. 42. (Murray, ſee n. 79.) —maxima purpuraſcens. *Park. theat.* 1481. 2. *Raii hiſt.* 1714.

E. major fl. purpureo. *Ger. emac.* 1381. *f.* 4.

Leaves ſpreading, flowers ſcattered, corollas ovate, ſtyle ſtanding out.

82. Erica grandiflora. *Great-flowered Heath.*

Lin. ſyſt. 470. *ſuppl.* 223. *Hort. kew.* 2. 25. *Curt. magaz.* 189. *Thunb. mon. n.* 28.

Leaves in ſixes or thereabouts aceroſe ſmooth, flowers axillary peduncled, corollas cylindric ſubincurved ſmooth, ſtyle elongated.

Place uncertain.

83. Erica tetragona.

Lin. ſyſt. 470. *ſuppl.* 223.

Leaves in threes, flowers in racemes pointing all the ſame way, calyx linear, corolla four-cornered oblong, ſtyle included.

84. Erica pyramidalis. *Pyramidal Heath.*

Ait. hort. kew. 3. 491.

Anthers awnleſs included, corollas funnel-ſhaped in fours, ſtyle a little protruded, leaves in fours pubeſcent.

DESCRIPTIONS, &c.

Heaths are ſmall ſhrubs, or what are commonly called underſhrubs (Suffrutices). Their leaves are very ſmall, linear, lanceolate, or ovate, imbricate or remote, entire, ciliate or ſerrate, in ſome oppoſite, in moſt whorled, in others again ſcattered. Bractes uſually three, two of which are oppoſite. The flowers are either axillary or terminating, and variouſly diſpoſed. Corolla moſtly of a purple colour. Anthers commonly oblong, but ſometimes linear. Germ in moſt ſpecies ſmooth.

In ſome ſpecies the anthers are awned, in others creſted, in others awnleſs; in ſome they are included within the corolla, in others they are projected, or ſtand out beyond the corolla. Hence this unwieldy genus is commodiouſly divided into four ſections; and theſe are ſubdivided into ſubordinate ſections from the diſpoſition of the leaves. The incluſion or projection of the ſtyle alſo affords another diviſion of the ſpecies. The calyx in ſome is double. And laſtly the form of the corolla aſſiſts us much in diſtinguiſhing the numerous ſpecies. The campanulate and ovate forms, with their ſeveral modifications, are the predominating ones. All this may beſt be underſtood by the following table, which may be of conſiderable uſe, by exhibiting theſe material differences at one view.

Anthers awned, from 1 to 29.
——— creſted, ——— 30 to 43.
——— awnleſs, ——— 44 to 82. 84.
Anthers included, from 1 to 69. 84.
——— ſtanding out, ——— 70 to 80.
Leaves in pairs oppoſite, 1. 2. 44. 45.
——— in threes, from 3 to 19; from 30 to 38; from 46 to 55; from 70 to 75; 83.
——— in fours, from 20 to 28; from 39 to 43; from 56 to 67; from 76 to 78; 81. 84.
——— more than four, 29, 68, 69, 79, 80, 82.
Style included, from 2 to 7; from 9 to 14; 20, 21; 23 to 25; 29 to 35; 39; 44; 56 to 58; 60 to 66; 83.
——— middling, 42, 43.
——— ſtanding out, 1; from 15 to 19; 22; 26 to 28; 36 to 38; 45; 47 to 52; 54, 55, 59, 70, 71; 73 to 82. 84.
Corolla,
  Bell-ſhaped, 1; 9 to 18; 21, 22, 37, 45, 47, 55, 62, 64; 74 to 77; 80.
  Bell-ſalver-ſhaped, 49.
  Pitcher-bell-ſhaped, 43.
  Globular-bell-ſhaped, 30, 31.
  Globular, 20, 48, 65.
  Subglobular, 6, 50.
  Roundiſh, 53.
  Ovate, 2 to 4; 23, 24, 27; 32 to 36; 39 to 41; 46, 54, 81.
  Ovate-bell-ſhaped, 51.
  Ovate-conical, 7, 8.
  Ovate-oblong, 42, 66.
  Ovate-fig-ſhaped, 52.
  Ovate-funnel-ſhaped, 63.
  Funnel-ſhaped, 84.
  Oblong, 5, 28, 78.
  Cylindric, 19, 38, 59, 68, 70, 71, 72, 79, 82.
  Cylindric-fig-ſhaped, 69.
  Fig-ſhaped, 25, 26, 29. (I know not any other ſenſe of the word *Groſſus* but this.)
  Club-fig-ſhaped, 56, 57, 58, 60.
  Salver-ſhaped, 61.
  Tubular, 67.
  Four-cornered, 83.

This genus has within the compaſs of a few years riſen from neglect to ſplendour. Every one remembers that Mr. Pope marks it with contempt, at the ſame time that he celebrates the colour of the flowers:

> “ E'en the wild Heath diſplays its purple dyes.”

Mr. Miller, ſo late as the year 1768, makes mention of no more than five ſorts, four of which, as being wild, he conſigns to oblivion; the fifth (n. 17.) is an inhabitant of the ſouth of Europe; but he has not one of thoſe beautiful natives of the Cape of Good Hope, which now form ſo great an ornament to our green-houſes or dry ſtoves. In Linneus's ſpecies plantarum (1762) we have thirty-eight ſorts; in Dahlgren's diſſertation, 1770, there are fifty-eight; which are increaſed to ſeventy-four in Murray's edition of ſyſtema vegetabilium (1784.) From Bergius, the ſupplement, &c. and to ninety-one in Thunberg's diſſertation on this genus, publiſhed the year following. Our liſt, by the aſſiſtance principally of the hortus kewenſis, contains eighty-three ſpecies.

Our firſt acquaintance with the African Heaths is from Hermann and Oldenland towards the end of the laſt century. The latter of theſe authors enumerates twenty-ſix ſpecies.

Ray in his hiſtory (1688) enumerates fifteen ſorts, which are chiefly our wild ones, and thoſe from the ſouth of Europe; he has only one African in this liſt: in his Dendrologia, however, (1704) he has a long catalogue of fifty-ſix African Heaths, from Petiver and Plukenet, but chiefly from Sherard. This is a mere enumeration of names; and Heaths continued to be little known, except from the dried ſpecimens in the herbariums of the curious, till ſome of the European ſpecies were imported into our gardens between the years 1763 and 1770; and the rich harveſt of Africans were introduced from the Cape of Good Hope, by Mr. Francis Maſſon, who made two voyages to that ſpot, ſo abundant in rare plants, by the command and at the expenſe of the King of Great Britain; firſt in the years 1773, 1774 and 1775; and again in the years 1786 and 1787. Since theſe two periods, no genus of plants has attracted more regard than that which is now to be deſcribed.

1. Common Heath is a foot or two in height, or more; the ſtems brown and woody, very much branched; the branches in oppoſite pairs, moſtly upright, round, downy and reddiſh; the branchlets ſquare. Leaves nearly ovate, bluntiſh, with a whitiſh furrow, ſlightly hairy at the edge; according to Lightfoot tetragonal, in four imbricate rows, the uppermoſt having angles at the baſe like the barbs of an arrow. Flowers ſolitary, on peduncles the length of the leaves, from the ſides of the branches, ſlightly nodding, oppoſite, but generally pointing one way, giving the branches the appearance of long bunches, but leafy ſhoots will be always found at the end. There is a ſmall bracte at the baſe of each peduncle; and two (ſometimes three), roundiſh-ſagittate concave bractes, woolly about the edge, at the baſe of the flower, of the ſame ſhape as thoſe of the outer calyx. This is very ſhort, compoſed of four (or five) leaflets, often tinged with red, fringed at the edge with ſoft hairs; the two outer leaflets ſomewhat larger, ovate, ſlightly keeled, the two inner roundiſh-ovate, ſomewhat membranaceous. The inner or proper calyx conſiſts alſo of four oval-oblong, concave leaflets, ſlightly adhering at the baſe, alternating with the ſegments of the corolla, of the ſame colour, and nearly of the ſame texture with them, five times as long as the outer calyx, open, but after flowering approaching, with the points bent in. We may here obſerve a curious inſtance of the gradual tranſition from the green herbaceous leaves of the ſtem, to the more delicate texture of the corolla; which is of a pale purpliſh roſe-colour, whitiſh towards the baſe, divided two-thirds of the way down into four (ſometimes five) ovate, blunt, equal, open ſegments. Filaments awl-ſhaped, double to and fro towards the point, white, or tinged with purple, ſpringing from ſmall glands at the baſe of the germ. Anthers reddiſh-brown or orange-coloured, lanceolate, having two cells opening at the ſides; horns awl-ſhaped, white, appearing woolly when magnified, ſometimes cloven, pointing downwards, nearly half as long as the anther; pollen white. Germ orbicular, but thick in proportion to its breadth, reddiſh, with eight perpendicular ridges beſet with ſoft white hairs: ſtyle ſlanting upwards, white, purpliſh above, longer than the calyx: ſtigma purpliſh red[a]. Capſule ſmall, involved in the permanent flower, globular, ſlightly depreſſed, partitions ſimple, faſtened

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[a] Stokes in With. Wither. Curt. Lightf.

to the axis of the capſule, and oppoſite to the ſutures of the valves: receptacle globular, fleſhy, four-lobed, in the upper part of the capſule. Seeds ſix to nine in each cell, ſubovate, ſcrobiculate-wrinkled, pale yellow [b].

It varies with white flowers, and with hoary leaves. The latter has been conſidered by ſome as a diſtinct ſpecies, and by others confounded with E. ciliaris. It is frequent on Bagſhot heath, Enville common in Staffordſhire, Birmingham heath, and as Ray ſays, not only about Windſor, where Cluſius obſerved it, but all over England.

This plant, which is little regarded in warmer climates, is made ſubſervient to a great variety of purpoſes in the bleak and barren highlands of Scotland, and other northern countries. The poorer inhabitants cover their cabins with it inſtead of thatch, or elſe twiſt it into ropes, and bind down the thatch with them in a kind of lattice work. They alſo make the walls with alternate layers of heath, and a ſort of cement made of black earth and ſtraw. The hardy Highlanders frequently make their beds with it. In moſt of the Weſtern iſles they dye their yarn of a yellow colour, by boiling it in water with the green tops and flowers of this plant: and woollen cloth boiled in alum water, and afterwards in a ſtrong decoction of the tops, comes out a fine orange-colour. In ſome of theſe iſlands they tan their leather in a ſtrong decoction of it. Formerly the young tops are ſaid to have been uſed alone to brew a kind of ale; and Boethius relates that this liquor was much uſed by the Picts. In ſome of the iſles it is ſaid they ſtill brew ale with one part malt, and two parts of the young tops of heath, ſometimes adding hops. In many parts of Great Britain beſoms are made of it. The turf, with the heath growing on it, is cut up and dried for the fuel of the cottager, for heating ovens, covering under-ground drains, &c.

Sheep and goats will ſometimes eat the tender ſhoots, but they are not fond of them. Cattle not accuſtomed to browſe on heath give bloody milk, but are ſoon cured by drinking plentifully of water. The branches of heath afford ſhelter, and the ſeeds a principal part of the food of many birds, eſpecially thoſe of the Grous kind: and for this purpoſe the ſeed-veſſel is formed and protected in ſuch a manner, that the ſeeds are preſerved a whole year, or even longer. Bees collect largely from the flowers, and honey made from them was anciently ſuppoſed to be of a bad quality, but in fact it is only of a darker colour. The foliage affords nouriſhment to the Phalæna quercus, or great egger Moth. Dodder frequently entwines itſelf about this plant, and gives it a ſingular appearance [c].

Almoſt every part of Europe abounds with heath, eſpecially the northern countries; it is alſo common in all the temperate parts of the vaſt Ruſſian empire.

Heath is called Ling in ſome parts of England, in Shropſhire Grig, in Scotland Hather. It is remarkable that Shakſpeare enumerates Heath and Ling as different plants. The former of theſe names is from the German *Heide*, and the latter from the Daniſh *Lyng*: in Swediſh it is *Liung*; in Italian *Erica*; in Spaniſh *Brezo*; in Portugueze *Urze*, *Erice*, *Torga* or *Eſtorga*; in Ruſſian *Wereſk*.

2. The ſtem is ſubdivided into narrow branches. Leaves preſſed cloſe, almoſt imbricate. Calyx lanceolate, rounded, yellowiſh, not more than half the length of the corolla, cloſe. Corolla ovate-oblong, ſubroſtrated, yellow. Anthers and ſtyle included. Stigma truncated, four-cornered, echinate [d].

It is thus deſcribed by Thunberg. The whole is ſmooth, with a rufeſcent upright ſtem, two feet high. Branches ſcattered, from erect, ſpreading, wand-like; branchlets alſo ſcattered, filiform, very frequent, wand-like, ſhort. Leaves oppoſite, blunt, grooved underneath, a line in length. Flowers on the extreme branchlets, one, two or three together, upright. Bractes linear, obtuſe, concave, pale. Calycine leaflets ovate, acuminate, keeled below the tip. It varies with the corolla, calyx and bractes yellow or white. The whole plant being covered with its ſhining golden or ſilvery flowers, is very beautiful.

Native of the Cape of Good Hope, where it was obſerved by Bergius; and thence introduced here by Mr. Francis Maſſon, in 1774 [e].

3. This is a lofty ſhrub with purpliſh branches; the branchlets ſubtomentoſe and white. Leaves crowded very much, even, rugged about the edge. Peduncles ſhorter than the leaves. Corolla purpliſh, ſmooth, diſtinct from all others in its flowers being the ſize of an acorn [f].

Thunberg thus deſcribes it. Stem ſmooth, rugged, brown, flexuoſe, decumbent, ſtrict, a ſpan high. Branches alternate, divaricate, like the ſtem. Leaves in threes, lanceolate, acute, ſmooth, flat above, convex beneath, with a ſlender groove, ſpreading. Peduncles tomentoſe, reflex. Bractes ovate, acute, approximating, many times ſmaller than the calyx. Calycine leaflets ovate, acute, keeled, entire, preſſed cloſe, ſmooth, pale, two lines in length. Corolla acute, pale fleſh-colour; the ſegments ſtraight, acute, converging; the largeſt of all the Ericas.

Native of the Cape of Good Hope. Introduced here about 1780. It flowers in may and june [g].

4. Stem ſhrubby, determinately branched, branches ruſhy. Leaves linear-ſubulate, acuminate, even, patulous. Racemes pointing one way, nodding, on peduncles the length of the flower, fleſh-coloured: bractes remote, minute, coloured. Calyx red, lanceolate, very ſmall. Corolla ovate-globular, red, with a blunt mouth. Anthers a little ſhorter than the corolla. Style included, the length of the corolla. Stigma ſubcapitate [h]. The branch continues the ſpike [i]. Native of the Cape of Good Hope.

5. According to Thunberg, the ſtem is erect, pubeſcent, leafleſs, two feet high. Branches ſcattered, frequent, ſpreading, covered with leaves, very ſhort, ſimple. Leaves in threes, ovate, obtuſe, convex beneath, with a longitudinal groove, flat above, entire, imbricate, ſmooth, ſcarcely a line in length. Flowers ſolitary, nodding, on pubeſcent reflex peduncles. Bractes ovate, keeled, acute, white, a little ſhorter than the calyx, on the middle of the peduncle. Calycine leaflets ovate, acute, concave, keeled, white, ſmooth, almoſt three times ſhorter than the corolla, which is almoſt an inch long, divided at the mouth into four very ſhort blunt ſegments. It reſembles n. 3. but has ovate, not linear leaves, corollas leſs, deeply divided, and not ſo much inflated, the flowers more copious, and the ſtem erect.—This is one of the moſt beautiful of this beautiful genus, with large white flowers. Thunberg found it in the interior part of Africa [k]. It was introduced here in 1787, by Mr. Francis Maſſon [l].

6. Stem fruteſcent, determinately branched, with white, awl-ſhaped, decurrent lines under the ſcars of the leaves; which are linear, even, preſſed cloſe, ſcarcely longer than the interſtices. Flowers terminating, ſubumbelled, on peduncles the length of the flowers: bractes linear, minute, remote. Calyx ſcarioſe, mucoſe, a little ſhorter than the corolla, ovate, acute. Corolla blunt. Anthers ovate, ſhort. Style ſhort, cylindrical. Stigma naked.

Native of the Cape of Good Hope [m]. Introduced in 1787, by Mr. Francis Maſſon [n].

7. Thunberg deſcribes the ſtem as flexuoſe-erect, aſh-coloured, two feet high. Branches oppoſite, or in threes, cinereous-villoſe, wand-like. Branchlets filiform, ſcattered, frequent, wand-like. Leaves in threes, linear-lanceolate, beneath grooved from the revolute margins, tomentoſe-whitiſh, from erect ſpreading, curved a little. Peduncle, calyx, and corolla hirſute. Calyx ſhorter by half than the co-

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[b] Gærtner.

[c] Penn. tour, Wither. Curtis, Lightf.

[d] Linn. mant.

[e] Hort. kew.

[f] Linn. ſpec.

[g] Hort. kew.

[h] Linn. mant.

[i] Linn. ſyſt.

[k] Linn. ſuppl.

[l] Hort. kew.

[m] Linn. mant.

[n] Hort. kew.

rolla, which is fleſh-coloured, oblong, ſubcampanulate, and a line in length. It varies with flowers very hirſute and hairy, red, and whitiſh fleſh-colour.

Native of the Cape of Good Hope. Introduced about 1778 by Mr. James Gordon. It flowers in may and june[o].

8. Native alſo of the Cape. Introduced in 1773 by Mr. Francis Maſſon, and flowering in may and june[p].

9. This ſhrub is about two feet high, and pubeſcent. Leaves linear, ſubciliate, erect. Flowers at the ends of the branchlets, ſubſolitary, on very ſhort peduncles. Calyx lanceolate, acute, one third of the length of the corolla, ſpreading or reflex. Corolla ſhaped like that of Lily of the valley, purple, blunt. Stamens ſhorter than the corolla. Piſtil the length of the corolla. Stigma ſubcapitate.

Found at the Cape by Bergius. [q] It is covered with beautiful flowers.

10. Stems procumbent, copious, a palm in length. Leaves lanceolate, bluntiſh, even, keeled. Flowers ſcattered, ſolitary. Calyx ſcarioſe, lanceolate, acute, ſhorter by half than the corolla; which is obtuſe, red and even. Anthers very ſhort. Stigma blunt. Native of the Cape[r].

11. The whole ſhrub is ſmooth, purple, erect, a foot high and more. Branches and branchlets trichotomous, from erect ſpreading, ſubfaſtigiate. Leaves in fours, obliquely whorled, three equal in ſituation, the fourth lower, linear, obtuſe, flat above, beneath convex, with a deep longitudinal groove, the lower ſmooth, the uppermoſt very finely ciliate, attenuated into paler petioles, imbricate. Flowers terminating, four to ten, drooping. Peduncles blood-red, longer than the leaves. Calycine leaflets boat-ſhaped, acute, pale blood-red, ſmooth, ciliate at the tip, preſſed cloſe, a little ſhorter than the corolla; which is blood-red and ſmooth. The above is Thunberg's deſcription.

Corolla globular-bell-ſhaped[s]. Native of the Cape.

12. Leaves, according to Thunberg, lanceolate, ſmooth. Flowers in racemes, directed all the ſame way. Corolla purple.

This varies, with leaves in fours[t]. Native of Portugal.

13. Native of the Cape of Good Hope. E. urceolaris of Bergius, which in ſyſt. veget. is referred to this ſpecies, is n. 7.

14. Leaves ſubtriquetrous, ſmooth, ſhort, patulous. Bractes three, having the appearance of a calyx. Flowers terminating, white. Anthers convex, blunt, black[u].

Thunberg thus deſcribes it. Stem brown, upright, a foot high and more. Branches and branchlets ſcattered and whorled, flexuoſe-erect, wandlike, aſh-coloured, tomentoſe. Leaves linear-ovate, obtuſe, very finely rugged about the edge, flat above, convex beneath, with a ſlender longitudinal groove, ſhining, preſſed cloſe at the baſe, ſpreading and recurved from the middle, a line in length. Flowers terminating, in threes, peduncled, erect. Bractes oblong, acute, keeled, white, approximating to the calyx, imbricate, ſhaped like the calycine leaflets, which are ovate, acute, keeled, very finely rugged about the edge, white, ſmooth, nearly equal to the corolla.

15. Branches filiform, creeping. Flowers violet-coloured. Leaves ovate, acute, ciliate[x]. Theſe are both natives of the Cape.

16. This is a ſhrub growing to the height of ſeveral feet. The leaves quickly fall off. With the branches of it they make beſoms, whence the trivial name[y]. It is common in the South of Europe, was introduced here about 1770, and flowers in april and may[z].

17. This is an upright ſhrub, growing to the height of ſix feet, with upright branches covered with a white nap. Leaves very abundant, upright, ſmooth, almoſt awl-ſhaped, covering the branches, wrinkled when dry. Flowers very numerous, on the middle of the branches, ſo that the later leaves are above them; they are on branching peduncles, forming a panicle. Calyx ſingle, ſhort, with lanceolate leaflets. Corolla white, ſhort, broad, four-cleft two thirds of the way[a].

Native of the South of Europe, and the iſland of Madeira. Introduced here about 1748. It flowers from february to may[b].

Mr. Miller makes it a native of the Cape of Good Hope and Portugal, but moſt of the little he has ſaid on this genus is wrong. He ſets down E. herbacea and ciliaris as natives of England; and he gives no deſcription of any except of this, and that is imperfect and erroneous.

18. This is an upright ſhrub, with the branches growing by threes. Leaves triquetrous, even, preſſed cloſe. Flowers in a panicle, nodding, alternate, white, on white pubeſcent peduncles; with ovate, alternate, white bractes. Leaflets of the calyx ovate, keeled, ſharpiſh; the length of the tube. Corolla double the length of the calyx, broad, ſharp; almoſt like that of E. cubica. Anthers black, two-parted, above the throat. Style purpuraſcent, rather longer than the corolla: ſtigma blunt. Found at the Cape of Good Hope by Thunberg[c].

19. Branches round, ſmooth: branchlets pubeſcent. Leaves linear-awl-ſhaped, grooved, ſpreading, half an inch long, on appreſſed petioles ſcarcely half a line in length. Flowers axillary. Peduncles hardly half an inch long, ſometimes bifid or trifid. Bractes three, awl-ſhaped, three-ſided. Leaflets of the calyx keeled, ſmooth, two lines in length. Corolla deep crimſon, an inch long, a little bent in, ſmooth, ſubpellucid, a little ſwelling at top, with a four-cleft mouth; ſegments broad, ſharpiſh, ſuberect. Filaments whitiſh. Anthers included, oblong, brown, bifid; awns ſubulate-capillary, the length of the anthers. Style a little longer than the corolla, red. Stigma ſtanding out, incraſſated, very dark purple. Found by Mr. Francis Maſſon at the Cape of Good Hope; and introduced in 1774. It flowers at various ſeaſons[d].

20. Branches filiform, ramentaceous, long, ferruginous. Leaves very narrow, upright, preſſed cloſe. Flowers umbelled. Calyx ſhorter than the corolla, green. Corolla purple. Anthers with two ciliate horns, inwardly mucronate, opening in an ovate form on the ſides. Style purple. Stigma double, the upper roundiſh, the lower quadrifid. Native of the Cape of Good Hope[e]. Introduced in 1786, by Mr. Francis Maſſon. It flowers in july[f].

21. Stem ſhrubby, ſmoothiſh, with pubeſcent branches. Leaves linear, obtuſe, erect, channelled underneath, the length of the joints, hiſpid or ſubſcabrous. Flowers umbelled, diſperſed on the upper twigs. Calyx extremely minute, if obſerved, cloſely ciliate. Corolla obtuſe. Anthers two-awned at the baſe, included. Style the length of the corolla. Stigma headed. Native of the Cape[g]. Introduced in 1774, by Mr. Francis Maſſon. It flowers from february to may[h].

22. Branches ſomewhat villoſe. Leaves linear, acute, ſpreading, ſomewhat villoſe, ciliate, with a few long hairs, glandulous at the tip, three lines long, on petioles half a line in length. Flowers axillary on the extreme twigs, on peduncles a line and half long. Bractes three, linear, minute, caducous. Calycine leaflets lanceolate, villoſe, preſſed cloſe, a line in length. Corolla pale red, almoſt twice as long as the calyx; tube a little ventricoſe; ſegments of the border obtuſe, erect. Filaments white, a little ſhorter than the calyx. Anthers included, oblong, blackiſh, two-parted: awns awl-ſhaped, ſhort, a little divaricating. Style a little longer than the corolla, greeniſh. Stigma thickened,

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[o] Hort. kew.
[p] Ibid.
[q] Linn. mant.
[r] Ibid.
[s] Linn. ſyſt.
[t] Ibid.
[u] Linn. mant.
[x] Linn. ſyſt.
[y] Ibid. & Villars.
[z] Hort. kew.

[a] Haller.
[b] Hort. kew.
[c] Linn. ſuppl.
[d] Hort. kew.
[e] Linn. mant.
[f] Hort. kew.
[g] Linn. mant.
[h] Hort. kew.

convex, black-purple. Found at the Cape by Mr. Francis Maſſon. Introduced in 1775. It flowers in march and april[i].

23. Stems ſhrubby, from nine to twelve inches high, branched, brown, ſomewhat rugged from the remains of the leaves which have fallen off: branches a little woolly. Leaves commonly in fours, but ſometimes in fives, ovate-linear, ſpreading, near the flowers preſſed cloſe to the ſtem, the edges turned in and ciliated, each hair terminating in a ſmall round gland; the upper ſurface is flat, the lower concave and white. Flowers hanging down one over another all one way, forming a little head. Peduncles downy, about the length of the flowers. Bractes three at the baſe of each flower on the upper ſide, of the ſame ſhape as the leaves of the calyx, the lowermoſt the largeſt, inſerted about a line below the calyx; the two others, one on each ſide riſing from the baſe of the calyx. Calycine leaflets from four to ſix, linear, three times ſhorter than the corolla, woolly, fringed with long hairs tipt with browniſh red globules. Corolla pale purple or fleſh-colour, varying to white; divided into four very ſhallow ſegments, which turn back. Anthers ſagittate, purple, with two white horns at the baſe, and two little apertures for the diſcharge of the pollen. Germ woolly, glandular at the baſe. Capſule villoſe, truncate.

It flowers twice in the year. Native of the northern parts of Europe, on moiſt heaths and mooriſh grounds; flowering in july and auguſt; Linneus ſays, twice in the year.

This ſpecies is not inferior to many of the foreign heaths in the beauty and delicacy of its flowers. It is diſtinguiſhed from the other Britiſh heaths, not only by the flowers growing in a kind of pendulous cluſter on the tops of the ſtalks, but by the leaves growing in fours, and forming a ſort of croſs; whence the trivial and Engliſh names. Our old writers call it Low Dutch Heath or Beſome Heath[k].

24. Thunberg thus deſcribes it. Stem aſh-coloured, hiſpid, flexuoſe, erect, two feet high and more. Branches ſcattered, ſeldom in whorls, like the ſtem; branchlets filiform and capillary, ſhort, wand-like. Leaves in threes or fours, frequently four on the branches, and three on the branchlets, ſeldom all in fours, linear, obtuſe, rugged, villoſe, incurved, grooved beneath, ſpreading, a line in length. Flowers at the end of the branchlets, umbelled, two, three, or more together, abundant, blood-red, hirſute. Peduncles capillary, bracted. Calycine leaflets lanceolate, rufeſcent, hairy, very ſhort. Corolla obtuſe, villoſe.

This has its name from the pubeſcency of the flowers.

β. Leaves linear, incurved, hiſpid. Flowers among the leaves terminating, converging, ſhorter than the leaves.

According to Thunberg this varies much in the ſtem, branches, leaves and flowers. The principal varieties are theſe:—1. Hairy, with leaves in threes, and the corollas very finely hairy. 2. Hiſpid, with leaves in threes, and hiſpid. 3. Villoſe, with leaves in fours, rugged, and the branches in whorls. 4. Small-flowered, with the leaves on the branches in fours, on the branchlets in threes, hiſpid, corollas minute.

Native of the Cape of Good Hope[l].

25. Stem aſh-coloured, rugged, erect, a foot high and more. Branches and branchlets in a ſort of whorl, from erect-ſpreading. Leaves in fours, lanceolate-ſubulate, grooved underneath, ſmooth, imbricate. Flowers at the ends of the branches in racemes, nodding. Peduncles blood-red, villoſe, the length of the leaves. Bractes below the middle of the peduncle, ovate, acute, ciliate, keeled, pale. Calycine leaflets broad-ovate, acute, keeled, very finely ſubciliate, ſmooth, blood-red. Corolla cylindric, ſubventricoſe below the tip, a little curved, obtuſe, ſmooth, blood-red, half an inch long. Corollas, according to Linneus, twice as long as the leaves[m].

Native of the Cape. Introduced in 1774, by Mr. Francis Maſſon. It flowers in june and july[n].

26. Stem ſomewhat rigid, with white awl-ſhaped decurrent lines from the ſcars left by the fallen leaves. Leaves awl-ſhaped, crowded, ſomewhat rugged on the edge. Flowers in a ſort of head, on very ſhort purple peduncles, with very ſmall remote bractes. Calyx blood-red, ovate, very ſhort. Corolla ovate-cylindric, blood-red, very long, with a blunt mouth. Anthers a little ſhorter than the corolla, two-parted. Stigma turbinate-headed, four-cornered. Thunberg ſays it differs from the preceding, in having the calyx linear, the corollas more inflated, the flowers in umbels, and the leaves in ſixes. Native of the Cape[o].

27. This is the ſize of Juniper[p]. Native of the Cape.

28. This is a brown rugged ſhrub, determinately branched, ſomewhat rigid, having the appearance of a ſmall Pinus ſylveſtris. Leaves crowded very much together, linear, acute, deep green. Spike terminating, ſurrounded by ſeſſile, imbricate, broadiſh flowers. Corollas longer than the leaves, obtuſe, commonly drooping. Stamens not ſtanding out; but the ſtigma is ſo a little. Native of the Cape[q].

29. Stem ſhrubby, upright, compound, two feet high. Leaves crowded, ſcattered, almoſt filiform, an inch long, even, capillary at the baſe, from erect ſpreading a little, glandular near the tip. Flowers terminating, faſtigiate. Calyx ſhorter, four-parted, linear, erect. Corolla cylindric, purple, with a four-cleft, yellow, upright mouth. Anthers the length of the corolla. Style the length of the ſtamens. Native of the Cape; obſerved there by Bäck[r].

30. Stem, according to Thunberg, brown, ſmooth below, hiſpid at top, erect, a foot high. Branches dichotomous, brown at bottom, and ſmooth, above aſh-coloured, hirſute, erect, faſtigiate: branchlets ſcattered all over the branches, filiform, frequent, hairy-rough, wand-like. Leaves linear-ſubulate, entire, ſmooth, flat above, convex beneath, with a very ſlender groove, incurved, from erect ſpreading. Flowers ſolitary, or two or three together, on very ſhort drooping peduncles, aſh-coloured, tomentoſe. Bractes lanceolate, ſmooth, white, ſhaped like the leaflets of the calyx; which are broad-ovate, acuminate, concave, keeled, membranaceous on the edge, entire, from erect, ſpreading, ſmooth, white, equal to the corolla; which is ſmooth, white, the ſize of a pepper-corn.—Branches and peduncles tomentoſe. Corolla the length of the calyx[s].

Native of the Cape. Introduced in 1787, by Mr. Francis Maſſon[t].

31. Stem erect, branched. Leaves linear, bluntiſh, rugged on the edge, longer than the internodes, on white petioles. Flowers terminating, in threes or thereabouts, nodding, the ſize of a pea, on purple peduncles, with alternate, remote, fleſh-coloured bractes. Calyx fleſh-coloured, lanceolate, the length of the corolla, keeled, bent in. Corolla obtuſe, red. Anthers awnleſs, very ſhort, yellowiſh. Style cylindric, ſhort. Stigma headed. Native of the Cape[u]. Introduced in 1774, by Mr. Francis Maſſon. It flowers in april and may[x].

32. Thunberg deſcribes his gnaphalodes thus. It is a ſmall ſhrub, ſmooth all over, of a cinereous brown colour, erect, a ſpan high. Branches and branchlets dichotomous and trichotomous, filiform, from erect ſpreading, faſtigiate. Leaves ovate, entire, ſmooth, flat above, convex beneath, with a longitudinal groove, preſſed cloſe, the length of the internodes, forming as it were jointed branchlets, a line and half in length. Flowers terminating, about three together, purple. Bractes approximating to the calyx, boat-ſhaped, purple, very finely ciliate.

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[i] Hort. kew.

[k] Curtis, Wither. Stokes in With.

[l] Linn. ſpec.

[m] Linn. ſyſt.

[n] Hort. kew.

[o] Linn. mant.

[p] Linn. ſyſt.

[q] Linn. ſuppl.

[r] Ibid.

[s] Linn. ſyſt.

[t] Hort. kew.

[u] Linn. mant.

[x] Hort. kew.

Calycine leaflets boat-ſhaped, preſſed cloſe, purple, the length of the corolla; which is bell-ſhaped and ſmooth. Native of the Cape of Good Hope.

33. Stem ſhrubby, compound. Leaves linear, ſmooth. Flowers terminating, ſeſſile. Bractes on each peduncle three, alternate, ovate, purple, the ſize and appearance of a calycine leaflet. Calyx ſpreading, with ovate, purple leaflets. Corolla purple. Stigma headed. Native of the Cape[y]. Introduced in 1774, by Mr. Francis Maſſon. It flowers in auguſt[z].

34. This is a ſhrub with linear, appreſſed, ſmooth leaves, the length of the internodes. Flowers racemed, peduncled. Bractes ſolitary, or in pairs, having the appearance and colour of the calyx; which is ovate, even, and fleſh-coloured. Corolla bell-ſhaped, white. Stamens ſhorter than the corolla. Anthers brown, two-parted. Style dark purple. Stigma becoming blue at the tip. Native of the Cape[a].

35. Calyx and bracte white. Corolla yellow[b].—Leaves three-ſided. Bractes alternate. Calyx blunt[c]. The calycina of Thunberg is the ſame with the veſpertina of Linneus, n. 18.

Native of the Cape.

36. Root perennial, woody. Stems ſhrubby, about a foot high, with oppoſite branches; the bark aſh-coloured. Leaves linear, fleſhy, ſpreading; above ſmooth and ſhining, tranſverſely wrinkled, towards the end beſet with a few ſcattered hair-like points; beneath having a longitudinal furrow, which is white from a woollineſs apparent to the magnifier; the edge ſomewhat membranaceous, and when viewed with the microſcope appearing ſerrulate: the leaves, when young, have three flat ſides, but when full grown are nearly flat. Flowers in long cluſtered whorled terminating ſpikes, ſonorous when ſtruck; they come out from the ſides of the young ſhoots; thoſe from the end-ſhoots are near each other, but ſcattered and bare; thoſe from the ſmall lateral branches generally in pairs. Peduncles ſhorter than the flowers, purpliſh brown, ſomewhat downy, the lower nodding, the upper upright; with a bracte about the middle. Bractes ovate, purpliſh, one cloſe to the peduncle; and three, ſometimes two only at the baſe of each flower, the largeſt half as long as the calyx. Leaflets of the calyx dark purple, with membranaceous, white, ſerrulated edges, and a furrow along the upper half. Corolla three times as long as the calyx, bluiſh purple, ſhrivelling, and turning of a fawn-colour; the clefts very ſhallow. Filaments awl-ſhaped, aſcending, doubled to and fro towards the point, white. Anthers blackiſh-purple, double; the horns crimſon, half-ovate, the outer edge toothed, half the length of the anthers; apertures oval, oblique, extending nearly half way down the ſide. Germ cylindric, ribbed, ſmooth. Style crimſon, inclining to one ſide. Stigma roundiſh. Seeds oval, the ſurface netted, and four times as big as thoſe of E. Tetralix[d].

Dr. Stokes remarks, that the lower part of the trunk is free from hairineſs, that the bark of the laſt year's ſhoot is aſh-coloured, covered with a ſhort light brown woollineſs, and that the branches are moſtly in threes. Mr. Curtis obſerves, that the ſtyle is incloſed within the corolla, but is longer than the ſtamens; and that it is diſtinguiſhed from E. Tetralix, with which and the common Heath it grows promiſcuouſly, by the fineneſs, ſmoothneſs, and deep green colour of its leaves; the flowers alſo grow more in ſpikes, and are of a deeper purple colour.

Native of Europe, but not in the ſouth, nor in the extreme northern parts; alſo of the Levant. It flowers from june to auguſt. It may be applied to the ſame purpoſes as the common Heath; and the flowers are much more ſhowy.

37. This is a ſhrub, with linear upright leaves, almoſt even. Flowers purple, very ſmall, as are alſo the calyxes and peduncles; they are ſo abundant as to cover the whole plant. Native of the Cape of Good Hope[e]. Introduced in 1774, by Mr. Francis Maſſon. It flowers from february to april[f].

38. This is an upright rigid ſhrub, with an aſh-coloured bark. Leaves in threes or fours, linear, obtuſe, ſomewhat rugged on the edge. Flowers terminating, two or three, ſubſeſſile. Calyx rude, acute, keeled, imbricate, with ſimilar bractes. Corolla ſcarcely club-ſhaped, obtuſe, three times as long as the calyx; the ſegments becoming hoary. Anthers included, bifid. Stigma capitate[g]. Native of Spain and Portugal. Obſerved in the former by Alſtroemer. Introduced in 1769, by George W. Earl of Coventry. It flowers in april and may[h].

39. Leaves patulous, broad-linear, keeled. Calyx ovate, ſmooth, coloured, one third of the length of the corolla, which is the ſize of a pea, and viſcid. The flowers are at the ends of the branches in a ſort of umbel. Native of the Cape of Good Hope[i].

40. Stem, according to Thunberg, brown, rugged, a foot high. Branches in whorls, like the ſtem, flexuoſe-erect: branchlets trichotomous and dichotomous, like the branches. Leaves in ſixes, oblong, obtuſe, incurved, above three-cornered, flat, beneath grooved, rugged eſpecially underneath, very finely ciliate, imbricate, a line in length. Petioles ciliate. Flowers aggregate, in whorls, in the middle and at the ends of the branchlets. Calycine leaflets lanceolate, ciliate, blood-red. Corolla ovate-bell-ſhaped, hairy-rough at bottom, blood-red. Style purple, curved, twice as long as the corolla, with the headed ſtigma ſtanding out. The leaves are ſcattered, like thoſe of Lycopodium or Wolf's-claw Moſs, in a ſort of ſpiral, whence it is difficult to reckon their number[k]. Introduced in 1774, by Mr. Francis Maſſon. It flowers in april and may[l].

41. Thus deſcribed by Thunberg. The whole ſmooth, brown, erect, a foot high. Branches ſcattered in threes, filiform, flexuoſe, erect. Leaves ovate, obtuſe, ciliate, flat above, convex beneath, grooved, imbricate. Flowers terminating, drooping. Bractes like the leaflets of the calyx, only not ſo broad, ovate, acute, ciliate, concave, fleſh-coloured. Corolla ovate-globular, fleſh-coloured, ſmooth. Native of the Cape of Good Hope.

42. Stem fruteſcent, ſomewhat rugged, determinately branched. Leaves oblong-ovate, terminated by a little briſtle, convex above, ſmooth, ſhining. Flowers terminating, corymbed, ſubſeſſile. Calyx red, lanceolate, with an awn at the end. Corolla long, inflated, viſcid, with a globular throat, and a four-parted, acuminate, ſhort border. Filaments linear, membranaceous. Anthers within the throat, oblong, acuminate, woolly at the baſe, ſcarcely creſted, awnleſs. Germ oblong. Style filiform. Stigma obtuſe, a little longer than the anthers. Found at the Cape by Thunberg[m].

43. Flowers terminating, four or eight from the uppermoſt axils. Peduncles filiform, ſhorter than the leaves. Bractes three, linear. Calycine leaflets, from a broad baſe awl-ſhaped, keeled, even, a line and half in length. Corolla white: tube pitcher-ſhaped, a little longer than the calyx; ſegments of the border obtuſe, patulous. Filaments white, ſhorter than the tube, bent in at the tip. Anthers ovate, compreſſed, brown, two-parted: laminas oblong, acute, gaſh-ſerrate without, white, the length of the anthers. Germ red, having eight little knobs at top. Style the length of the corolla, whitiſh. Stigma headed, flat beneath, convex above, commonly four-lobed. Native of the Cape: where it was found by Mr. Francis Maſſon. It was introduced in 1775; and flowers in may and june[n].

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[y] Linn. ſpec. [z] Hort. kew. [a] Linn. mant. [b] Linn. ſpec. [c] Linn. ſyſt. [d] Stokes in With. Curtis, Wither.

[e] Linn. ſpec. [f] Hort. kew. [g] Linn. mant. [h] Hort. kew. [i] Linn. ſpec. & ſyſt. [k] Linn. ſyſt. [l] Hort. kew. [m] Linn. ſuppl. [n] Hort. kew.

44. According to Thunberg, the whole ſtem is ſmooth, erect, a ſpan high. Branches and branchlets filiform and capillary, erect. Leaves oppoſite, lanceolate, ſmooth, convex beneath, with a ſlender groove, preſſed cloſe. Flowers terminating, umbelled, in threes. Calycine leaflets equalling the corolla, keeled. Flowers blood-red. Style included[o]. Native of the Cape.

45. Flowers ſolitary, terminating, peduncled. Peduncles white-tomentoſe, generally longer than the flowers. Calyx bell-ſhaped, bluntiſh, four-parted, with ovate leaflets. Corolla twice as large as the calyx. Filaments the ſhorteſt of any. Germ white-tomentoſe. Stigma ſubcapitate. This has the herb of Paſſerina Ericoides, not to be diſtinguiſhed from it, inſomuch that Paſſerina Ericoides has entirely the herb of an Erica, with the flowers of Paſſerina. Here we have an inſtance of the intermixture of genera, which is not uncommon in the Cape plants. Native of the Cape[p].

46. Stem fruteſcent, with determinate, wand-like branches. Leaves linear, three-ſided, erect, even, longer than the internodes, ſharpiſh. Flowers in a ſort of ſpike, white, with lanceolate white bractes on the peduncle. Calyx ſcarioſe, white, ovate, acuminate, half the length of the corolla; which is white, with the belly hyaline, and the border four-parted, narrowed, acute, funnel-form. Anthers bifid, obtuſe, ſhort. Style ſhorter than the corolla. Stigma blunt. Native of the Cape[q].

Thunberg will have it, that this does not differ from lutea, n. 2. but that has oppoſite leaves; in this they are in threes.

47. A ſmall ſhrub with narrow branchlets. Leaves ovate-oblong, three-ſided, channelled. Flowers terminating, nodding, ſeſſile. Calyxes globular, waved, imbricate, with roundiſh ſcales, keeled and bent in at the tip, blood-red. Corollas bell-ſhaped, yellowiſh, ſcarcely longer than the calyx. Style very long, nodding[r]. Native of the Cape. Introduced in 1774 by Mr. Francis Maſſon[s].

48. Thunberg thus deſcribes it. Stem ſeldom erect, commonly decumbent, ſmooth, flexuoſe, filiform. Branches filiform, flexuoſe, villoſe: branchlets capillary, frequent, tomentoſe. Leaves ovate, ſpreading, rough, with long hairs. Flowers at the ends of the extreme branchlets, peduncled, one, two or three together, the whole calyxes covered cloſe with a white wool. Anthers protruded, purple. Style protruded, a little above the anthers.

Linneus, in his Species plantarum, ſays that this is known by its globular flowers, covered with a greeniſh yellow lanugo.—Corolla half-five-cleft, obtuſe, not longer than the calyx. Anthers included[t]. Native of the Cape. Introduced in 1774, by Mr. Francis Maſſon. It flowers from april to july[u].

49. Stem ſhrubby, flexile. Leaves linear, obtuſe, even, patulous. Flowers terminating, ſubumbelled, ſcattered in cloſe parcels, nodding a little. Peduncles the length of the corolla, purpliſh. Bractes lanceolate, alternate, coloured. Calyx blood-red, obovate, more in breadth than length, keeled, with a dagger-point at the tip. Corolla bell-ſalver-ſhaped, blood-red; tube the length of the calyx; border ſpreading, generally longer than the tube, the ſegments roundiſh-ovate. Anthers dark-coloured, bifid, the length of the border. Style twice as long as the corolla, briſtle-ſhaped. Stigma blunt, ſlightly four-cornered. Native of the Cape[x].

50. Stem ruteſcent, round, ſeldom branched. Leaves linear, even, ſeſſile, acute, generally preſſed cloſe. Flowers terminating, peduncled. Bractes two, alternate, ſcarioſe, lanceolate. Calyx even, with ovate, ſcarioſe, acute, yellow leaflets. Tube of the corolla ſubglobular; border four-parted, the length of the calyx, with ovate, acute, ſpreading ſegments. Anthers purple, bifid, ſtanding up above the throat. Style longer than the ſtamens. Stigma ſimple, obtuſe. Found at the Cape by Thunberg[y].

51. This ſhrub has the ſtature of Wormwood, and is panicled. Stem rufous; branches in threes. Leaves linear, gibbous on the outſide, ſubhirſute. Flowers at the ends of the branchlets. Corollas pale. Anthers very dark purple, bifid, within the mouth of the corolla. Stigma purple, four-cleft. Native of the Cape[z].

Thunberg ſays it varies 1. With a wand-like ſtem, and branches and leaves very hirſute and rugged. 2. With a wand-like hirſute ſtem and branches, and wrinkled villoſe patulous leaves. 3. With a panicled ſtem, very ſhort branchlets, and the leaves a little rugged and hirſute. 4. With a panicled ſtem, longer faſtigiate branchlets, and the leaves a little rugged, and ſmooth.

52. This is a ſuffruticoſe plant, two feet high. Leaves ſpreading very much, ſeſſile, ovate, acute, reflex and ciliate on the edge. Raceme terminating, whorled by threes. Corolla large, with a contracted unequal mouth[a]. According to Thunberg, oblong, bell-ſhaped, white. Anthers purple. Style almoſt twice as long as the corolla.—Native of Spain and Portugal. Introduced about 1773. It flowers from july to ſeptember[b]. Caſpar Bauhin gives it the epithet of Engliſh; no one, however, has heard of its being found in our iſland, though Mr. Miller has fallen into Bauhin's error, and ſets it down as one of our wild plants.

53. Stems decumbent, half a foot high, ſtrigoſe or hairy. Leaves ſubſeſſile, horizontal, patulous, even. Flowers ſmall, bell-ſhaped, bent towards the ground, ſcattered thinly. Style longer than the corolla. Thunberg ſays it much reſembles the planifolia, but differs in having an erect ſhrubby ſtem, awnleſs anthers, the leaves ſcarcely ciliate, revolute, more approximating, the corollas globular and ſmooth.—Native of the Cape of Good Hope[c].

54. Stem round, flexuoſe, decumbent, rigid, ſmooth. Branches ſcattered, oppoſite, or by threes, almoſt erect, bent in, flexuoſe, tomentoſe at top. Leaves lanceolate, flat above, grooved beneath from the revolute margins, entire, ſmooth, ſpreading. Petioles ſemicylindric, the length of the leaves, equalling the internodes, preſſed cloſe, pale. Flowers terminating, umbelled, on very ſhort tomentoſe peduncles. Bractes lanceolate, towards the baſe of the calyx. Calycine leaflets ovate, acute, entire, ſmooth, concave, keeled below the tip, preſſed cloſe. Corolla bell-ſhaped, pale, ſmooth. Native of the Cape. Introduced in 1774, by Mr. Francis Maſſon. It flowers from march to june[d].

55. Stem erect, ſmooth, a foot high and more. Branches commonly in threes, pubeſcent, erect, wand-like: branchlets ſcattered, very frequent, filiform and capillary, pubeſcent, erect, leafy. Leaves three-cornered, obtuſe, preſſed cloſe, ſmooth, with a very ſlender groove underneath. Flowers on very ſhort peduncles, erect. This is diſtinguiſhed by its white corolla, and awnleſs, projected, white anthers. Found at the Cape by Thunberg[e].

56. Leaves linear, even, the upper ones ciliate. Flowers terminating, ſolitary, ſeſſile. Corollas purple, acuminate, pubeſcent, ſeveral times longer than the calyx, the ſegments lanceolate. Style ſcarcely projected. Native of the Cape[f].

57. This is allied to the preceding. The corollas are pubeſcent, with the ſegments lanceolate-awl-ſhaped: but the branches are hairy, and the leaves are ſmooth. Native of the Cape[g].

58. Flowers copious. Corollas pubeſcent. Native of the Cape[h].

59. Found at the Cape of Good Hope by Mr. Francis Maſſon. Introduced in 1774. It flowers from may to auguſt[i].

60. Branches compound. Leaves oblong, convex, even, grooved underneath, ciliate, with ſpinules. Flowers large, heaped on the ſide into a ſort of head, ſeſſile, pubeſcent. Calyx rough, with

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[o] Linn. ſyſt.
[p] Linn. ſuppl.
[q] Linn. mant.
[r] Linn. amoen. & ſyſt.
[s] Hort. kew.
[t] Linn. ſyſt.
[u] Hort. kew.
[x] Linn. mant.
[y] Linn. ſuppl.

[z] Linn. mant.
[a] Linn. ſpec.
[b] Hort. kew.
[c] Linn. ſuppl.
[d] Hort. kew.
[e] Linn. ſuppl.
[f] Linn. ſpec. & ſyſt.
[g] Linn. ſyſt.
[h] Ibid.
[i] Hort. kew.

white hairs, as it were doubled. Corolla bright blood-red, rough alſo, with white hairs, having the mouth obſcurely four-cleft. Native of the Cape[k]. Introduced in 1774, by Mr. Francis Maſſon. It flowers moſt part of the year[l].

61. This is a ſmall ſhrub with even branches, ſtreaked in four rows. Leaves linear, acuminate, three-ſided, even, rugged about the edge, erect, the length of the internodes, but the upper ones longer. Flowers erect, faſtigiate, terminating. Calyx ſimilar to the leaves. Corolla with a cylindric patulous tube, a little longer than the leaves; border flat, red above, white underneath, the four ſegments ſubcordate. Stamens ſhorter than the corolla. Anthers ſcarcely emarginate. Native of the Cape[m].

62. Stem ſhrubby, determinately branched. Leaves ſpreading, linear, acute, longer than the internodes, ſlightly incurved, on white petioles. Flowers terminating, corymbed; on ſubtomentoſe peduncles, having briſtle-ſhaped bractes in the middle. Calyx ſcarioſe, with the leaflets obcordate, complicate, keeled, bent in and rude at the tip. Corolla half-four-cleft, purple, with a pale baſe, twice as long as the calyx. Anthers two-horned at the tip, acuminate, very ſhort. Style the length of the corolla. Stigma obtuſe. Native of the Cape[n].

63. Stems diſtorted, as in common Heath. Leaves crowded together, ſpreading a little, ſubcylindric, even. Flowers in terminating bundles. Calyx doubled. Tube of the corolla oblong-ovate, the ſegments ovate, obtuſe, ſpreading. Anthers not longer than the corolla, almoſt included. Stigma obtuſe. Obſerved at the Cape by Bergius[o].

64. Stem determinately branched. Leaves linear, erect, acute, longer than the internodes, rugged at the edge. Bractes calycine, rude, approximating. Calyx rude, awl-ſhaped, half the length of the corolla; which is purpliſh, with the ſegments erect and acute. Anthers bifid, with a cavity on the outſide, and very ſhort. Style ſhorter than the corolla, but twice as long as the ſtamens, purple. Stigma headed, four-lobed. Germ hirſute. Native of the Cape[p]. Introduced in 1774, by Mr. Francis Maſſon. It flowers in march[q].

65. This reſembles E. ramentacea in the plant, (and Thunberg makes it to be the ſame): Stem determinately branched. Leaves linear, erect. Flowers terminating, few, peduncled. Calyx ſcarioſe, very ſhort. Corolla red. Anthers rugged, bifid at the tip as it were two-horned. Stigma headed. Native of the Cape[r].

66. Branches heaped above the flowers. Leaves linear, bluntiſh, erect. Flowers heaped, lateral, below the top of the ſtalk. Calyx ſcarioſe, ſubdiaphanous, bluntiſh, erect. Corolla like that of E. albens, with a flat ſharpiſh border. Anthers very ſhort. Stigma headed. Native of the Cape[s]. Introduced in 1787, by Mr. Francis Maſſon[t].

67. This is remarkable for having the flowering heads always divided into four flowers; before theſe are elongated, the head appears globular, and echinate, as in Achyranthes, from the very ſpreading yellow briſtles of the leaves of the involucre and calyx. Corollas extremely hirſute, with a four-cleft mouth, the ſegments very ſhort. Obſerved by Sparrmann far inland from the Cape of Good Hope[u].

68. Branches ſmooth. Leaves on the branches in ſixes, on the branchlets in fours, petioled, erect, aceroſe, four lines in length. Petioles ſmooth, ſcarcely half a line long. Flowers from three to ſix in an umbel. Peduncles filiform, ſomewhat hairy, two lines in length. Bractes three, awl-ſhaped, ciliate, preſſed to the calyx. Leaflets of the calyx from a broad baſe awl-ſhaped, ciliate, grooved, two lines long. Corolla fleſh-coloured, ſomewhat villoſe on the outſide, ſcarcely an inch long, the thickneſs of a fowl's quill. Filaments ſmooth, a little ſhorter than the tube of the corolla. Anthers oblong, acuminate at the baſe, two-parted at top as far as the middle, where they are fixed to the filaments; they are awnleſs, and of a brown colour. Germ turbinate, concave above, crenulate on the edge. Style red, the length of the ſtamens. Stigma ſubcapitate, very dark red. Obſerved by Maſſon at the Cape of Good Hope. Introduced in 1773. It flowers in ſeptember and october[x].

69. Stems ſhrubby, filiform, covered all round with leaves. Leaves in fours, imbricate in eight rows, very ſhort, elliptic, crowded, obtuſe, ciliate, ſo that they appear villoſe. Flowers in a terminating ſeſſile head. Calyx ſhorter, linear, hairy. The corolla has a four-cleft, erect, ſharpiſh mouth. Piſtil the length of the ſtamens, which are ſhorter than the corolla. Obſerved by Back at the Cape[y]. Introduced in 1787, by Mr. Francis Maſſon[z].

70. Leaves linear, crowded. Flowers peduncled, nodding. Calyx ſhorter by half than the corolla, awl-ſhaped, keeled. Corolla long, with the mouth obſcurely four-cleft. Stamens almoſt membranaceous, linear, obtuſe, twice as long as the corolla[a]. It reſembles the following ſpecies, but the calyx is ſimple, and the corolla obſcurely four-cleft and red[b]. Native of the Cape. Introduced in 1774, by Maſſon[c].

71. This is a brown ſhrub. Branches covered with branchlets in threes, crowded, very ſhort, pubeſcent, clothed with ſquarroſe leaves; which are alſo crowded, awl-ſhaped, ſubtrigonal, ſomewhat rugged at the edge, patulous, or ſtanding out at the tip. Flowers ſolitary, at the ends of the branchlets, drooping, on a ſhort, pubeſcent peduncle. Calyx ſubcartilaginous, angular, imbricate, with ſimilar but ſhorter bractes, in threes. Corolla cylindric, three times as long as the leaves, with a four-cleft, acute, yellow mouth. Anthers linear, twice as long as the corolla, bifid at the tip, without any apparent filaments. Style filiform, longer than the anthers. Stigma ſimple. In the corolla and ſtructure of the ſtamens it reſembles the preceding; but the calyx is imbricate, not ſimple; the corolla yellow, more deeply four-cleft and ſharpiſh, not red, obſcurely four-cleft and obtuſe; the leaves awl-ſhaped, ſubſquarroſe-imbricate, not linear, diſtant and erect. Native of the Cape[d]. Introduced 1774, by Maſſon. It flowers from january to march[e].

72. Stem ſhrubby, determinately branched, round, twiſted: bark covered with a white nap, chinky, deciduous. Branchlets very many, erect, leafy, many-flowered, very cloſely tomentoſe. Leaves on ſhort petioles, from erect ſpreading, linear-lanceolate, bluntiſh, beneath gibbous, grooved, above ſomewhat concave, on both ſides ſmooth, very minutely dotted; the younger ones ciliate at the baſe. Flowers numerous, axillary, peduncled, nodding a little. Peduncles the length of the leaves, capillary, pubeſcent. Bractes none. Calyx ſimple, ſmall; leaflets ovate-lanceolate, acute, keeled, gibbous at the baſe, ſmooth. Corolla bell-cylindric, half the length of the peduncles, almoſt four times as long as the calyx, ſmooth, four-cleft at the edge; ſegments ſmall, blunt, upright. Filaments erect, parallel, capillary, ſmooth. Anthers erect, ſemibifid; the lobes blunt, divaricating, opening at top on the inſide with a roundiſh pore; gibbous within at the baſe, and ſmooth. Germ ſmall, roundiſh. Style longer than the ſtamens, capillary. Stigma headed-blunt. Native of the Cape. Known only by a ſingle ſpecimen in the Linnean herbarium[f].

73. Leaves linear, remote, patulous, with a few hairs ſcattered over them. The calyxes clothed with a white wool cover the whole ſubtruncate corolla. Native of the Cape[g].

Thunberg makes this to be the ſame with the capitata.

74. Flowers lateral, white. Corolla covered with the white calyx. Native of the Cape[h].

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[k] Linn. ſpec. & ſyſt.
[l] Hort. kew.
[m] Linn. mant.
[n] Ibid.
[o] Ibid.
[p] Ibid.
[q] Hort. kew.
[r] Linn. mant.
[s] Ibid.
[t] Hort. kew.
[u] Linn. ſuppl.

[x] Hort. kew.
[y] Linn. ſuppl.
[z] Hort. kew.
[a] Linn. ſpec.
[b] Linn. ſyſt.
[c] Hort. kew.
[d] Linn. mant.
[e] Hort. kew.
[f] Smith.
[g] Linn. ſpec. & ſyſt.
[h] Linn. ſyſt.

75. This little ſhrub has the habit of common Heath. Leaves ſhort, ſmooth, with a white line underneath. Umbellets naked, without an involucre. Calyx compound. Corolla pale blue, angular. Anthers gibbous-tailed at the baſe. Native of Portugal [i].

76. Leaves in threes or fours, but on the upper branchlets in fives, according to the obſervation of Seguier. Calyx awl-ſhaped. Corollas cylindric. Anthers deeply bifid [k]. Native of the South of Europe.

77. Stem like that of Empetrum, ſhrubby, ſomewhat rugged; the extreme branches whitiſh and divaricating. Leaves in fours, ſeldom in fives, linear, bluntiſh, ſometimes ſmoothiſh, ſometimes a little rugged, beneath convex and channelled, ſhortiſh, crowded. Flowers on the ſides of the branchlets, ſcattered, peduncled. Calyx coloured, erect, concave, very ſhort. Corolla blunt. Anthers without any tail, two-parted. Stigma ſimple. It reſembles E. herbacea, which however has the branchlets even, the leaves ſharp, the corollas ovate ſharpiſh, the calyxes ſpreading, half the length of the corolla, the anthers linear, acute, twice as long, and not gibbous at the baſe. Native of Africa, and alſo of the neighbourhood of Thouloufe [l]. See n. 80. which is ſuppoſed to be the ſame.

78. This is a ſmall ſhrub, from a foot to eighteen inches in height, decumbent at bottom, then upright, branched, flexible. Leaves almoſt covering the whole ſtem, deciduous, reſembling thoſe of the fir, thickiſh, having a prominent nerve, narrow, very ſharp, ſmooth. Flowers at the tops of the branchlets, on ſhort peduncles, alternate, among the leaves. They come out in autumn, continue cloſed during winter, and are then green; in may the year following the flowers are unfolded, the anthers which were incloſed are protruded, the calyx and corolla opening are both changed into a pale purple or fleſh-colour [m]. Hence many authors, among whom is Linneus, have made two ſpecies of this. The calyx is four-cleft, with lanceolate ſegments. The corolla is larger than the calyx. And the capſule is globular [n]. Native of Auſtria, Switzerland and Sileſia. Introduced in 1763, by the Earl of Coventry [o].

79. Stem the height of a man. Leaves in fours or fives, ſpreading, obtuſe, gibbous at the baſe. Flowers purpliſh [p]. Native of the ſouth of Europe. It flowers from june to november [q]. Linneus ſets this down as a native of England: but our plant which he ſuppoſed to be the ſame with his multiflora is the next ſpecies.

80. Stems twiſted, trailing. Branches between ſcored and angular, light reddiſh brown, the more ſlender ſhoots aſh-coloured, all lateral, to ſeven or more riſing from the ſame point in the manner of an umbel, in ſome ſtates of its growth giving it much the appearance of Euphorbia Cypariſſias; when beginning to flower, gradually tapering towards the end. Leaves linear, ſomewhat like thoſe of fir, bowed ſideways, ſmooth, but not gloſſy, ſomewhat pointed, when magnified appearing to have diſtant ſerratures on the edge, which is bent in, upper ſurface green, ſlightly elevated in the middle, under whitiſh, convex, with a ſmooth furrow running along it, longer, and ſometimes thrice as long as the corolla, and crowded ſo cloſe as to conceal the younger ſhoots. Petioles ſhorter and narrower than the breadth of the leaf, flat, generally ſmooth, but ſometimes ſlightly downy, preſſed to the branch. Flowers roundiſh, on long ſlender peduncles, from the ſides of the branches, beginning from below the middle, and extending to the ends, continuing on, at leaſt in the cultivated plants, till the next ſeaſon. Peduncles ſlender, capillary, from the baſe of the leaves, nearly upright, and as long as the leaves, three or four riſing from a kind of caly bud, compoſed of lanceolate-ovate yellowiſh ſcales fringed at the edge, three to each peduncle, two a little below the middle, oppoſite; the third a little below. Calyx without bractes at the baſe as in the other Britiſh ſpecies; ſegments ovate, concave, the edges bending inwards, appearing fringed when magnified, divided to the baſe. Corolla truly bell-ſhaped, pointed at the baſe, cloven near half way down, ſegments broad, ſoon coming to a bluntiſh point, ſpreading, generally of a pale fleſh-colour, approaching to white, but ſometimes with a deep tinge of purple. Filaments capillary, ſomewhat flatted, white, as long as the corolla. Anthers juſt projecting, two to each filament (or ſo much divided as to appear like two), ſpreading, ovate, blunt, blackiſh brown or purple, with an oval orifice on the outer ſide extending nearly half way down. Germ roundiſh, ſmooth, with four deep furrows. Style as thick again as the filaments. Stigma juſt thicker than the ſtyle, the end flat. Seeds reddiſh brown.

Found on heaths, as on Goon Hilly downs, going from Helſton to the Lizard point in Cornwall. It flowers from june to auguſt [r]. The ſame with E. vagans. n. 77.

81. Branches whitiſh, angular. Leaves in fours, ſeldom in fives, even. Flowers lateral. Calyx ſimple, coloured, lanceolate, acute, ſhorter by half than the corolla. Style twice as long as the corolla. Stigma entirely ſimple. It reſembles E. multiflora, but the corolla is abſolutely ovate; the branches angular and white [s].

Native of the South of Europe. Introduced about 1765 by Mr. Joſhua Brooks. It flowers from march to may [t].

82. This reſembles E. curviflora, but the leaves are longer. Obſerved at the Cape of Good Hope by Thunberg [u]. Introduced here in 1775 by Maſſon. It flowers from may to july [x].

83. Flowers yellow, like thoſe of E. lutea, but longer. Native of the Cape [y].

84. Introduced from the Cape by Maſſon in 1787 [z].

PROPAGATION AND CULTURE.

1. Common Heath, which over-runs immenſe tracts, eſpecially in the elevated parts of northern countries, can be extirpated only effectually by paring and burning. In ſome lands, deep and croſs ploughings, getting up roots with heavy harrows, burning the whole, and ſpreading the aſhes may be ſufficient *.

Dr. Anderſon affirms, that wherever Heath abounds, there is generated, by the rotting of the plant, a peculiar black earth, that is not only of itſelf ſterile, but has a powerful tendency to make any other ſoil unfertile; ſo that in improving heathy grounds, the top ſoil ſhould be buried by trenching or deep ploughing †.]

1. 23. 36. 80. Notwithſtanding the commonneſs of our Britiſh heaths, they deſerve a place in ſmall quarters of humble flowering ſhrubs, where by the beauty and long continuance of their flowers, together with the diverſity of their leaves, they make an agreeable variety. They may be taken up, with a ball of earth to their roots, from the natural places of their growth, in autumn. The ſoil ſhould not be dunged, and the leſs the ground is dug, the better they will thrive, for they commonly ſhoot their roots near the ſurface. They may alſo be propagated by ſeeds, but this is a tedious method.

[12. 16. 17. 38. 52. 75—79. 81. Theſe, which are natives of the ſouthern countries of Europe, will bear the open air in England in a dry ſoil and a warm ſituation. They may be increaſed and treated in the ſame manner with our Britiſh Heaths, and may alſo be propagated by layers and cuttings.

All the reſt of this numerous and beautiful genus being natives of the Cape of Good Hope, or the more interior parts of Africa leading to that famous promontory, muſt be preſerved in the dry ſtove, green houſe or glaſs caſe. Theſe may be increaſed either from cuttings or from layers. There are not many of the ſpecies but what may be increaſed in the firſt way, provided good young ſhoots can be got for cuttings; eſpecially if they are put under bell-glaſſes, and the pots are ſet where they can be ſhaded, and have a moderate heat. E. empetrifolia, articularis, halicacaba, faſcicularis, Maſſoni, petiolata, retorta, and a few others, have not yet been ſtruck from cuttings: theſe therefore muſt be increaſed from layers, which however will not always ſtrike the firſt year. Theſe plants ſhould have a light and rather poor ſoil to grow in; a compoſition of bog earth and light loam will ſuit them well.

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[i] Linn. ſpec. & ſyſt.
[k] Linn. ſyſt.
[l] Linn. mant.
[m] Haller & Krock.
[n] Krocker.
[o] Hort. kew.
[p] Linn. ſyſt.
[q] Hort. kew.

[r] Stokes in With. & Woodw. Mſs.
[s] Linn. mant.
[t] Hort. kew.
[u] Linn. ſuppl.
[x] Hort. kew.
[y] Linn. ſuppl.
[z] Hort. kew.
* Bath Society Papers, 1. 116.
† Eſſays, 2. 195.

Mr. James Donn, the Curator of the botanic garden at Cambridge, has collected upwards of ſixty of theſe Cape Heaths, which he cultivates this year 1795; though he was appointed to his office only at michaelmas 1794.

ERICA. See *Alyſſum, Andromeda, Blæria, Brunia, Bryonia, Dioſma, Empetrum, Hottonia, Paſſerina, Penæa, Phylica.*

Erica Daboecia. See *Andromeda.*

—— marina. See *Fucus.*

—— maritima. See *Frankenia.*

ERICÆFORMIS. See *Dioſma* and *Hudſonia.*

ERICOIDES. See *Elatine.*

ERICOILA. See *Gentiana.*

ERICU. See *Aſclepias.*]

ERIGERON. (*of Pliny,* Ηριγερων *of Theophraſtus and Dioſcorides. From* ηρ *ſpring, and* γερων, *old man; becauſe it is hoary in the ſpring.*)

Lin. gen. n. 951. *Reich.* 1031. *Schreb.* 1287. *Juſſ.* 180. *Gærtn. t.* 170. *Conyzoides. Dill. gen. Conyzella. Dill. gen.*

Claſſ. 19. 2. Syngeneſia Polygamia Superflua.

Nat. order of *Compoſitæ Diſcoideæ. Corymbiferæ,* Juſſ.

GENERIC CHARACTER.

CAL. *Common* oblong, cylindric, imbricate: *ſcales* ſubulate, upright, gradually longer, nearly equal.

COR. *Compound* rayed: *corollets* hermaphrodite, tubular in the diſk. *Females* ligulate in the ray.

Proper of the hermaphrodite funnel-form; *border* five-cleft.

Of the *female* ligulate, linear, ſubulate, upright, commonly quite entire.

STAM. In the hermaphrodites: *Filaments* five, capillary, very ſhort. *Anthers* cylindric, tubular.

PIST. In the hermaphrodites *Germ* very ſmall, crowned with a down longer than its corollet. *Style* filiform, length of the down. *Stigmas* two, very ſlender.

PER. none. *Calyx* converging.

SEEDS in the hermaphrodites oblong, ſmall. *Down* long, hairy.

Of the *females* extremely like the hermaphrodites.

REC. naked, flat.

OBS. *Dillenius obſerves that the inmoſt or intermediate florets of the diſk are commonly males.*

One ſpecies has female naked florets.

ESSENTIAL CHARACTER.

Recept. naked. *Down* hairy. *Cor.* of the ray linear, and very narrow.

SPECIES.

1. Erigeron viſcoſum. *Clammy Erigeron.*

Lin. ſpec. 1209. *ſyſt.* 753. *Reich.* 3. 777. *hort. upſ.* 258. *mant.* 468. *Gron. orient.* 267. *Gouan hort.* 437. *illuſtr.* 67. *Jacqu. hort.* 2. *t.* 165. *Villars dauph.* 3. 240. *hort. cliff.* 409. (Aſter.)

Conyza major. *Dod. pempt.* 51. *Cluſ. hiſt.* 2. 20. *Ger. emac.* 481. 1. *Raii hiſt.* 261.—vera. *Lob. ic. Mor. hiſt.* 3. *ſ.* 7. *t.* 19. *f.* 11.

C. mas Theophraſti, major Dioſcoridis. *Bauh. pin.* 265. *Mill. fig. t.* 103.—major monſpelienſis odorata. *Bauh. hiſt.* 2. 1053.—major verior Dioſcoridis. *Park. theat.* 125.

Peduncles one-flowered, lateral, leaves lanceolate, toothletted in the middle, reflex at the baſe, calyxes ſquarroſe, corollas radiate.

2. Erigeron graveolens. *Strong-ſmelling Erigeron.*

Lin. ſpec. 1210. *ſyſt.* 754. *Reich.* 3. 778. *mant.* 468. *amæn.* 4. 290. *Gouan. hort.* 437. *illuſtr.* 67. *Villars dauph.* 3. 239.

Conyza minor vera. *Lob. ic.* 346. *Barrel. ic.* 370. *Bauh. hiſt.* 2. 1054. *Ger. emac.* 481. 2. *Park. theat.* 127. 9. *Raii hiſt.* 261. *Mor. t.* 20. *f.* 12.

C. femina Theophraſti, minor Dioſcoridis. *Bauh. pin.* 265.

Leaves ſublinear, quite entire, branches lateral, many-flowered.

[3. Erigeron glutinoſum. *Glutinous Erigeron.*

Lin. ſyſt. 754. *Reich.* 3. 778. *mant.* 112. *Ger. prov.* 203. *n.* 7.

Conyza montana, fol. glutinoſis piloſis. *Bauh. pin.* 265. *Mor. t.* 19. *f.* 19.

C. mont. ſaxatilis, hyſſopi fol. villoſo & glutinoſo, hiſpanica. *Barrel. ic.* 158.

C. mont. Myconis. *Dalech. hiſt.* 1200.—fol. Hyſſopi vulgaris villoſo. *Bauh. hiſt.* 2. 1054. *Raii hiſt.* 265.—piloſa. *Park. theat.* 125. 5.

Leaves lanceolate-linear, hairy-viſcid, peduncles one-flowered.

4. Erigeron ſiculum. *Red-ſtalked Erigeron.*

Lin. ſpec. 1210. *ſyſt.* 754. *Reich.* 3. 779. *hort. cliff.* 407. *Gouan. hort.* 438.

Conyza ſicula annua, fol. atro-virentibus, caule rubente. *Bocc. ſic. t.* 31. *f.* 4. *Mor. hiſt.* 3. 115. *ſ.* 7. *t.* 20. *f.* 28. *Pluk. phyt. t.* 168. *f.* 2.

C. caul. rubentibus tenuioribus, fl. luteo nudo. *Magn. monſp. t.* 76.

Conyzæ ſpecies fol. virgæ aureæ. *Bauh. hiſt.* 2. 1049. *Raii hiſt.* 265.

Lower calycine ſcales looſe, longer than the flower, peduncles leafy.

5. Erigeron carolinianum. *Carolina Erigeron.*

Lin. ſpec. 1210. *Reich.* 3. 779. *Dill. elth.* 412. *t.* 306. *f.* 394. (Virga aurea).

Stem panicled, flowers ſubſolitary, terminating, leaves linear, quite entire.]

6. Erigeron canadenſe. *Canadian Erigeron.*

Lin. ſpec. 1210. *Reich.* 3. 779. *hort. cliff.* 407. *upſ.* 258. *mant.* 468. *Hudſ. angl.* 363. *With.* 902. *Hall. helv. n.* 84. *Scop. carn. n.* 1060. *Neck. gallob.* 350. *Pollich pal. n.* 789. *Leers herborn. n.* 654. *Krock. ſileſ. n.* 1381. *Gron. virg.* 122. *Villars dauph.* 3. 239.

Conyzella. *Dill. cat.* 160. & *app.* 142. *t.* 8.

Conyza annua acris alba elatior, linariæ foliis. *Bocc. ſic.* 86. *t.* 46. *Mor. t.* 20. *f.* 29. *Petiv. brit. t.* 16. *f.* 12. *Raii ſyn.* 175. *hiſt.* 271.

Virga aurea virginiana hirſuta, fl. pallido. *Zanon. hiſt.* 1. 204. *t.* 78.

Eupatorium cannabinum americanum anguſtifolium. *Park. theat.* 595. 6.

Flowers in panicles, hairy-rough; leaves lanceolate, ciliate.

7. Erigeron bonarienſe. *Buck's-horn Erigeron.*

Lin. ſpec. 1211. *Reich.* 3. 780. *hort. cliff.* 407. *upſ.* 258. *Murr. prodr.* 179. *Dill. elth.* 344. *t.* 257. *f.* 334. (Senecio).

Leaves rolled back at the baſe.

[8. Erigeron jamaicenſe. *Jamaica Erigeron.*

Lin. ſpec. 1210. *Reich.* 3. 780. *amæn.* 5. 406. *Swartz obſ.* 305. *t.* 8. *f.* 2. *Brown. jam.* 320. *Sloan. jam.* 1. 260. *t.* 152. *f.* 3. (Senecio).

Stem few-flowered, ſubvilloſe, leaves wedge-form-lanceolate, with two ſerratures on each ſide.

9. Erigeron philadelphicum. *Spreading Erigeron.*

Lin. ſpec. 1211. *ſyſt.* 754. *Reich.* 3. 780. *Lour. cochinch.* 500.

Stem many-flowered, leaves lanceolate, ſubſerrate, thoſe on the ſtem half-ſtem-claſping, floſcules of the ray capillaceous, the length of the diſk.

10. Erigeron purpureum. *Purple Erigeron.*

Ait. hort. kew. 3. 186.

Stem many-flowered, hairy, leaves oblong, ſomewhat toothed, ſtem-claſping, corollas of the ray capillaceous, longer than the diſk.

11. Erigeron ægyptiacum. *Egyptian Erigeron.*

Lin. ſyſt. 754. *Reich.* 3. 780. *mant.* 112. 517. *Jacqu. hort.* 3. *t.* 19.

E. ſerratum. *Forſk. ægypt.* 148.

Conyza capitata ſ. globoſa. *Bocc. ſic. t.* 7. *f.* B. *Mor.* 114. *t.* 20. *f.* 14.

Leaves half-ſtem-claſping, ſpatulate, toothed, flowers globular.

12. Erigeron Gouani. *Cluſter-flowered Erigeron.*

Lin. ſpec. 1212. *ſyſt.* 754. *Reich.* 3. 781. *mant.* 469. *Gouan illuſtr.* 66. *Jacqu. hort.* 3. *t.* 79.

Flowers heaped, calyxes ſcarioſe, leaves lanceolate, ſomewhat toothed, ſcabrous about the edge.]

13. Erigeron acre. *Blue Erigeron.*

Lin. ſpec. 1211. *Reich.* 3. 781. *hort. cliff.* 407. *Fl. lapp.* 308. *ſuec. n.* 741. *Hudſ. angl.* 363. *With.* 903. *Curtis lond.* I. 60. *Lightf. ſcot.* 474. *Relh. cant. n.* 607. *Gærtn. fruct.* 2. 448. *Hall. helv. n.* 85. *Neck. gallob.* 349. *Pollich pal. n.* 790. *Leers herborn. n.* 655. *Krock. ſileſ. n.* 1382. *Villars dauph.* 3. 238.

Conyzoides. *Dill. giſs.* 154.

Conyza cærulea acris. *Bauh. pin.* 265. *Dod. pempt.* 641. 4. *Ger. emac.* 484. 10. *Raii hiſt.* 270. *Pet. brit.* 16. 4.

C. odorata cærulea. *Park. theat.* 126. 6.

C. perennis acris cærulea. *Mor. t.* 20. *f.* 25.

Aſter arvenſis cær. acris. *Tourn. inſt.* 481. *Raii ſyn.* 175.

Amellus montanus æquicolorum. *Col. ecphr.* 2. *t.* 26.

Senecio ſ. Erigeron cær., aliis Conyza cær. *Bauh. hiſt.* 2. 1043. 2.

Peduncles alternate, one-flowered.

14. Erigeron alpinum. *Alpine Erigeron.*

Lin. ſpec. 1211. *ſyſt.* 754. *Reich.* 3. 781. *mant.* 468. *Hall. helv. n.* 86. *Scop. carn. n.* 1061. *Ger. prov.* 202. 6. *Krock. ſileſ. n.* 1383. *Fl. dan. t.* 292. *Villars dauph.* 3. 236.

Conyza cærulea alpina major & minor. *Bauh. pin.* 265. *prodr.* 124. *Raii hiſt.* 271. *n.* 2, 3.

Aſteri montano purpureo ſimilis ſ. globulariæ. *Bauh. hiſt.* 2. 1047. *f.* 3.

Stem with one or two flowers, calyx ſubhirſute, leaves obtuſe, villoſe underneath.

[15. Erigeron uniflorum. *Dwarf Erigeron.*

Lin. ſpec. 1211. *Reich.* 3. 782. *hort. cliff.* 407. *fl. ſuec. n.* 742. *Hall. helv. n.* 87. *Scop. carn. n.* 1062. *Gunn. norv. n.* 665. *Allion. pedem. n.* 722. *Villars dauph.* 3. 235. *Lin. lapp.* 307. *t.* 9. *f.* 3. (Aſter).

Aſter montanus cæruleus omnium minimus. *Raii ſuppl.* 163.

Conyza cærulea alpina major. *Bauh. pin.* 265. *prodr.* 124.

Stem one-flowered, calyx hairy.

16. Erigeron gramineum. *Graſs-leaved Erigeron.*

Lin. ſpec. 1212. *Reich.* 3. 782. *Gmel. ſib.* 2. 174. *t.* 76. *f.* 2. *Amm. ruth.* 215. (Aſter).

Stem one-flowered, leaves linear, ciliate, ſcabrous.

17. Erigeron camphoratum.

Lin. ſpec. 1212. *Reich.* 3. 782. *hort. upſ.* 259. *Gron. virg.* 57. 122.

Leaves lanceolate-ovate, villoſe, ſerratures cartilaginous at the tip.

18. Erigeron japonicum.

Lin. ſyſt. 754. *Thunb. jap.* 312.

Leaves ſeſſile, obovate, ſerrate, villoſe, flowers panicled.

19. Erigeron ſcandens. *Climbing Erigeron.*

Lin. ſyſt. 754. *Thunb. jap.* 313.

Leaves ovate, ſerrate, villoſe, flowers axillary, ſtem climbing.

20. Erigeron tuberoſum. *Tuberous-rooted Erigeron.*

Lin. ſpec. 1212. *ſyſt.* 754. *Reich.* 3. 783. *Gron. orient.* 266. *Gouan. monſp.* 438. *illuſtr.* 67. *Ger. prov.* 203. 8. *Sauv. monſp.* 55.

α. Chondrilla bulboſa ſyriaca, fol. anguſtioribus. *Bauh. pin.* 130.

C. altera Dioſcoridis putata. *Cluſ. hiſt.* 2. 145.

C. marina. *Dalech.* 1366. *Mor.* 114. *t.* 19. *f.* 20.

β. C. bulb. ſyr. fol. latioribus. *Bauh. pin.* 130.

Conyza tuberoſa lutea, fol. anguſtis & rigidis. *Magn. monſp.* 77. *Mor. t.* 20. *f.* 15.

γ. Aſter conyzoides Geſneri. *Mor.* 118. *t.* 22. *f.* 7. *Ger. emac.* 487. 5. *Raii hiſt.* 264. 15.

Leaves linear, branches one-flowered, ſtem ſuffruticoſe.]

21. Erigeron fœtidum. *Stinking Erigeron.*

Lin. ſpec. 1213. *ſyſt.* 755. *Reich.* 3. 783.

Senecio africanus fol. retuſo. *Mill. fig.* 2. 155. *t.* 233.

S. fœt. afr. perennis, &c. *Pluk. alm. t.* 223. *f.* 4.

Conyza afr. ſenecionis fl., retuſis fol. *Herm. lugdb. t.* 662.

Pſeudo—Helichryſum fruteſcens afr., ret. fol. virid., fl. luteo nudo. *Mor.* 90. *t.* 10. *f.* 1.

Leaves lanceolate-linear, retuſe, flowers corymbed.

[22. Erigeron obliquum. *Oblique-leaved Erigeron.*

Lin. ſyſt. Reich. 3. 784. *mant.* 573. *Retz. obſ.* 5. *n.* 123. *p.* 6.

Very much branched, leaves ovate, oblique.

23. Erigeron tricuneatum. *Wedge-leaved Erigeron.*

Lin. ſyſt. 755. *ſuppl.* 368.

Somewhat ſhrubby, leaves wedged, three-lobed.

24. Erigeron pinnatum. *Pinnatifid-leaved Erigeron.*

Lin. ſyſt. 755. *ſuppl.* 368.

Leaves pinnatifid, toothed.

25. Erigeron ſumatrenſe.

Retz. obſ. 5. *n.* 75. *p.* 28.

Tomentoſe, flowers raceme-panicled, leaves lanceolate, ſubſerrate.

26. Erigeron ſericeum. *Silky-leaved Erigeron.*

Retz. obſ. 5. *n.* 76. *p.* 28.

Flowers panicled, leaves ovate-lanceolate, tomentoſe-ſilky, entire and ſerrate, appendicled at the baſe.

27. Erigeron hirſutum.

Lour. cochinch. 500.

Stem hiſpid, leaves linear-lanceolate, ſubſerrate, very hairy on both ſides.

28. Erigeron rivulare.

Swartz. prodr. 113.

Leaves wedge-ſhaped, acute, rough with hairs, toothed on both ſides at the tip, ciliate on the edge, thoſe on the ſtem ſeſſile, ſtem almoſt ſimple, erect, few-flowered.

29. Erigeron decurrens.

Vahl ſymb. 1. 72.

Leaves decurrent, linear, tomentoſe, flowers panicled.

30. Erigeron incanum.

Vahl ſymb. 1. 72.

Leaves linear, tomentoſe, toothed a little, flowers corymbed, ſtem ſhrubby.

DESCRIPTIONS, &c.

1. Stem upright, ſtiff, ſtriated, hairy, viſcid, branched from the very bottom. Leaves ſtem-claſping, thick, rough with hairs, having glands between them exſuding a clammy juice, ſtrong ſmelling, bent down at the baſe, rounded and ſtem-claſping: on the branches linear, entire. Peduncles two-leaved, one-flowered, ſcarcely longer than the leaves. Flowers radiate. Seeds pubeſcent *.]

Root perennial. Stems near three feet high. Leaves alternate, four inches long, and two broad in the middle. Flowers ſingle, on pretty long foot-ſtalks, ſome from the ſide, others from the end of the ſtalk; they are yellow, have an agreeable odour, and appear in july.

[Native of the South of France, Italy, Sicily, Portugal and Spain, by way ſides, and on the borders of vineyards. Cultivated by Mr. Miller before 1759. It is uſed to drive away fleas and gnats; the ſtrong ſcent, as ſome ſuppoſe, being diſagreeable to thoſe inſects; but it is probable they are caught by the clammy juice of the leaves and ſtalks *.—The old name of this is *Great Sweet Fleabane*, or *Great Fleawort*.

2. Root annual. Stems upright, purpliſh, hairy and viſcid, from eight or ten to eighteen inches in height, ſtriated, branched the whole length. Branches patulous, at bottom longer, alternate, ſimple, crowded, all flowering. Leaves ſeſſile, narrow-lanceolate, quite entire, a little ſcabrous, with very ſmall hairs viſcid at the end ſcattered over them,

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* Linn. ſpec. mant. ſyſt. & Gouan illuſtr.

* Mill. fig.

ſtrong-ſmelling, of a ruſſet duſky colour. Peduncles at top lateral, ſolitary, with leaflets longer than the flowers ſcattered over them, one-flowered; ſometimes two-flowered, and then one is very ſhort. Calyx oblong, with patulous, upright leaflets, purpliſh at the end before flowering time. Corolla yellow, ſmall, with a minute upright ray of five or ſix florets, purpliſh underneath. Down ruſeſcent[b]. Monſ. Villars thinks that this ſpecies rather belongs to the genus Solidago.]

The ſtalks are in gardens ſtiff, and three feet high. The flowers are produced in cloſe bunches from the ſide of the ſtalk towards the top; they appear in july, and in warm ſeaſons the ſeeds ripen in England.

[Native of the South of France, and Italy; very frequent near Madrid.—Called formerly *Small true Fleabane*. Cultivated by Mr. Miller in 1768.

3. Root perennial. Stems a long ſpan in height, ſlender. Leaves quite entire, narrow and ſharp, villoſe and glutinoſe. Peduncles alternate, one-flowered, few in number; ſemiflorets twenty and more in a flower[c], purple.—South of France and Spain, on mountains near the coaſt; flowering in auguſt.

4. Annual. Stems red. Flowers without any ray, ſmall. Peduncles covered with linear, recurved, minute leaves. It greatly reſembles the ſecond ſpecies, except that it has no ray whatever; and it is allied to Inula pulicaria.—In Sicily, and about Montpellier in marſhes[d]. It flowers in auguſt and ſeptember; and was firſt introduced in 1779, by John Fothergill, M. D.[e]

5. Stems three feet high and more, ſtraight, round, ſtreaked, the thickneſs of the little finger at bottom, where they are red, growing gradually more ſlender upwards; the leaves from top to bottom are frequent, very narrow, and ſomewhat hairy. Towards the top the ſtem puts forth branches, forming in the whole a ſort of pyramid; theſe are covered with leaves like thoſe of the ſtem, only ſhorter and narrower; each of theſe bears one ſmall flower, ſometimes more. The root-leaves are like thoſe on the ſtem, only ſhorter and blunter.—It flowered in the green-houſe of the Eltham garden in november 1727[f]; but being a native of North America, it is hardy enough to flower in the open ground in july and auguſt. It is perennial.—In the text of *Hortus Elthamenſis* this is marked fig. 393. but on the plate fig. 394.

6. Root annual. Stem firm, hairy, ſometimes three or four feet high, frequently crooked, much branched towards the top, and even from the middle, the branches gradually ſhorter, and forming a long cone. Lower leaves oval, tapering to a footſtalk, with large blunt diſtant teeth; higher up lanceolate, diſtantly ſerrate, (or entire) ſlightly hairy on the upper, but more ſo on the lower ſurface, thoſe on the branches and at their baſe linear-lanceolate, entirely ſeſſile. Flowering heads numerous, on ſimple or branched ſlender peduncles. Outer ſcales of the calyx ſhort; inner longer, linear, with a green line along the back, and whitiſh membranaceous edges. Florets very ſmall. Seeds minute, crowned with a ſeſſile feather of few ſimple rays, as long as the florets[g].—Florets in the centre yellow, in the circumference white, with a tinge of red[h]. The former are uſually four-cleft[i], but ſometimes only three-cleft[k], in number as far as ſixteen, of the latter there are ſometimes forty-ſix[l].

This came originally from North America; but now has the appearance of being indigenous in many parts of Europe: with us, it is not uncommon about London on cultivated grounds, and on rubbiſh. It flowers in auguſt. Petiver calls it white Golden-rod.

This being a naturalized plant, it would be curious to aſcertain when it firſt appeared among us in a wild ſtate. In Ray's ſynopſis it is ſaid to have been obſerved by Dr. Tancred Robinſon. Merret (in 1667) ſays it is plentiful at Heddington hill, by Oxford, and in Yorkſhire. Petiver mentions its growing about London.

7. Root annual. Stem angular, firm, hirſute, branched at top. Leaves alternate, lanceolate, hirſute and ſoft, ſeſſile; the lower ones tooth-gaſhed, the upper entire, narrower, and almoſt linear, towards the baſe waved, the midrib more prominent and hirſute. Flowers on the top of the ſtem, and at the extremities of the branches, one or two on a peduncle, and alternate; with pubeſcent calyxes: they are ſmaller than thoſe of *E. acre*, but larger than thoſe of the foregoing ſpecies[m].

Native of Buenos Aires in South America. Cultivated in the Eltham garden in 1732. It flowers in july and auguſt.

8. Root almoſt ſingle, but ſometimes ſubdivided, deſcending. Root-leaves lanceolate-wedge-form, ſubſeſſile, rounded at the end, with two, ſeldom three, diſtant ſerratures at top on each ſide. Stems erect or aſcending, often a ſpan high, filiform, pubeſcent, almoſt ſingle. Stem-leaves alternate, diſtant, lanceolate, acute, ſmall, nearly entire. Flowers ſubſolitary, terminating, peduncled, whitiſh. Common calyx ſingle, ſcarcely imbricate; ſcales membranaceous about the edge. Down appearing ſerrate when magnified, of a brown colour. Receptacle warted. Calyx ſpreading[n].

Sloane obſerves that the roots are ſmooth, white, no bigger than threads, and an inch and half long. Stem round, hoary, five or ſix inches high, having few leaves, placed without order, ſeſſile, with a narrow beginning, augmenting to a round end, about an inch long, rough, hoary, of a whitiſh green colour, very often having two or three notches. Flowers on the top of the ſtem, and from the axils, reſembling thoſe of Groundſel, compoſed of many ſmall yellow florets cloſe ſet together, encircled by many whitiſh, long, narrow ſemiflorets. Native of Jamaica.

9. Native of North America. Obſerved in Canada by Kalm. Perennial. It flowers from june to auguſt. Introduced about 1778[o].

Loureiro thus deſcribes a Cochinchineſe plant under this name. Stem herbaceous, three feet high, erect, branched. Leaves ſinuate. Flowers yellow, panicled, terminating, oblong, many. The female florets in the ray very ſlender, erect. Receptacle naked. Down hairy. It agrees in the ſpecific character with this ſpecies, but it is doubtful whether they are the ſame ſpecies. The deſcription in Linneus's ſpecies belongs to E. ægyptiacum.

10. Root perennial. Stem herbaceous, branched, a foot or more in height. Leaves alternate, ſharp, either entire, or with a few teeth about the edge. Flowers panicled. Leaflets of the calyx lanceolate, ſharp, equal, ſmooth, ſlightly keeled; the keel having a few hairs ſcattered over it. Corollets of the ray very numerous, purple; of the diſk yellow.—Native of Hudſon's Bay. Flowering in july and auguſt. Introduced in 1776, by Meſſrs. Gordon and Græffer[p].

11. Root annual. Stem ſimple, upright, a foot and half high, ſomewhat ſtreaked, aſh-coloured, pubeſcent, and ſomewhat viſcid. Leaves alternate, ſeſſile, ſcarcely half-ſtem-claſping, ſpatulate, or obovate-lanceolate, bluntiſh, ſubpubeſcent, marked with lines, having about five teeth, but entire at the baſe. Flowers panicled, terminating, four or five, peduncled, roundiſh, on purpliſh peduncles. Calyx roundiſh, with ſubulate, pubeſcent ſcales, patulous at the end. Corolla yellow: florets minute: thoſe in the ray naked and abundant. Style cloven, yellow, capillary, quickly diſappearing. Native of Sicily and Egypt[q].

12. Root annual, bitter. Stem upright, round, a foot high, ſimple, with a few upright hairs. Leaves

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Linn. Gouan, Villars.

[c] Ger. prov.

[d] Linn. ſpec. & ſyſt.

[e] Hort. kew.

[f] Dillenius.

[g] Woodw. Mſſ.

[h] Withering.

[i] Haller.

[k] Scopoli.

[l] Pollich.

[m] Murray.

[n] Swartz.

[o] Hort. kew.

[p] Ibid.

[q] Linn. mant.

alternate, half-ſtem-claſping, ſpatulate, level, with a few ſharpiſh ſerratures, the edge and keel ſubciliate. Flowers panicled. Calyx roundiſh, imbricate; ſcales lanceolate, naked, convex, cloſe, ſcarioſe about the edge, bluntiſh, not patulous with a ſubulate tip, as in *E. ægyptiacum.* The female corollets apetalous, more copious than the hermaphrodites. Stigma cloven, oblong. It approaches very near to E. ægyptiacum [r].

According to Gouan, the ſtem is ſmooth, very ſlightly ſtreaked, rough at the top, with whitiſh hairs preſſed cloſe. The root-leaves and lower ſtem-leaves are petioled, ovate, ciliate, an inch wide, near two inches in length, or as long as the petiole, very ſmooth, quite entire at the baſe, toothed from the middle to the tip; teeth large, equal, diſtant: middle ſtem-leaves ſeſſile or rather ſtem-claſping, lanceolate: upper ſtem-leaves, and thoſe on the branches, narrower, hirſute, quite entire. Peduncles axillary and terminating, bearing from three to ſix flowers, hoary, an inch and half long, corymbed: pedicels a line or two in length. Flowers the ſize of thoſe on E. tuberoſum, and globular. Calyx having the colour and appearance of Conyza chinenſis, but with the ſcales not at all ſquarroſe, fleſhy, green, membranaceous at the edge, and very ſmooth. Corollas whitiſh, with a white down.

Native of the Canary iſlands. It flowers in july and auguſt. Introduced in 1772, by Monſ. Richard [s].

13. *Root* perennial, or according to ſome biennial, fibrous, acrid. *Stems* ſix to eighteen inches high, upright, ſomewhat angular, hairy, often purple; in ſome ſcarce branched at all, in other plants very much ſo. *Leaves,* the lower ones oval or ſpatulate, tapering to a footſtalk; the upper lanceolate, the uppermoſt linear; hairy on both ſurfaces, but moſt on the edges, which are entire and often waved. The upper part of the ſtem is divided into alternate branches, each bearing a ſingle flower. This never expands: it is externally purple, internally yellow, with a cavity in the middle. Scales of the calyx unequal, ſubulate, hairy, green. The corollets are uſually of three kinds; firſt, a few hermaphrodites in the middle of the diſk, with a five-cleft border, and ſhorter than the calyx: ſecondly, numerous females, on the ſides of the diſk, with a ſlender tube, the border obliquely truncate, the length of the calyx: thirdly, many (about forty) females in the ray; theſe are ligulate, upright, with two teeth on the edge, and longer than the calyx: the ſtyles of all are of the ſame height, and equal to the feather, which is ſeſſile, with yellow ſimple rays. In dry lofty paſtures, frequent, eſpecially in ſandy and calcareous ſoils. It is alſo often found on walls. Near London it is not a common plant; but it occurs frequently near Charlton-wood.

Johnſon in Gerarde ſays that he firſt obſerved it in company of Mr. George Bowles, Mr. John Bugs, and others, by Farmingham in Kent; and the laſt year (1635) Mr. William Broad found it growing at the blockhouſe at Graveſend.

It flowers from july to ſeptember.—The Germans take a decoction of it to attenuate viſcid phlegm.—Cows and goats refuſe it [t].

Our Engliſh botaniſts name it *blue-flowered* or *purple Fleabane.* Several ſpecies of this genus have this name of *Fleabane* in Engliſh; which tends (as Mr. Curtis very well obſerves) to confound this with the genus *Conyza.*

Gærtner remarks, that it has ſome affinity with Chryſocoma, and that Erigeron is a Chryſocoma with a difform ray.

14. This is like the foregoing, inſomuch that Haller doubts whether it be a diſtinct ſpecies, or only a variety. It has frequently a higher ſtem, but the height varies much in both; commonly one-flowered, ſeldom two-flowered. The flowers are larger; the ſemiflorets more numerous; the leaves longer; the feather denſe and whitiſh [u]. It varies with one, two and three flowers on a ſtalk, and ſometimes they are panicled: it varies alſo with a villoſe and ſmooth calyx [x]. The flowers in this come out from the middle and even the lower part of the ſtem; whereas in moſt of the ſpecies they branch out only from the upper part [y].

Native of Alpine paſtures. Found on Ben Lawers in Scotland by Mr. Dickſon in 1789. Perennial; flowering in july and auguſt.

Cultivated in 1759, by Mr. Miller [z].

Monſ. Villars has a ſpecies, which he names Erigeron atticum, from its reſemblance to Aſter atticus (Amellus Linn.) He deſcribes it as a foot high, and upright; the lower leaves large, ſpatulate, rough, three-nerved; the ſtem-leaves ſeſſile, lanceolate, gradually leſs and leſs: all hirſute, and a little viſcid. Flowers three, five or ſeven, in a terminating corymb. Peduncles naked, but villoſe and glutinoſe, as well as the calyx. Flowers blue, large, very wide, without any diviſion at the extremity of the ray. Seeds villoſe, terminated by an egret of white toothed hairs. Though it differs much from E. alpinum, yet that differs ſo much from itſelf, that it may be only a variety.

15. Root perennial. Stems a finger's length; ſcarcely three inches high, according to Haller; from a finger's length to a ſpan and more, as others ſay; very ſimple, ſtreaked, with wandering hairs ſcattered over them. Leaves few, lanceolate, almoſt ſmooth on the upper ſurface, but with ſpreading hairs ſcattered over the lower: the ſtem-leaves often ſublinear, the root-leaves oblong. The calyx conſiſts of very many, lanceolate ſcales, equal in length, the outer ones broader, ſpreading every way, with long hairs ſcattered over each ſurface. Ray white, length of the calyx, petals very numerous, linear, quite entire; ſtyle filiform, white, ſharp, bifid. Corollets of the diſk yellow, numerous, with yellow, bifid, obtuſe ſtyles. The flower is as large as in the foregoing ſpecies, thick, the ſcales covered with a white nap, lanceolate, broader: all the ſemiflorets ligulate, with no imperfect ones: ſometimes purple, according to Pontedera and Scheuchzer [a]. All the varieties with one and many flowers, with a ſmooth and hairy calyx, with blue and white flowers, make but one ſpecies, in the opinion of Allioni. Hence Scopoli has named this *E. polymorphum.* Monſ. Villars on the contrary, thinks that this bears little affinity to E. alpinum, or any other; from which it is eaſily diſtinguiſhed by the open ſcales of the calyx, loaded with long and wider hairs, be the plants ever ſo ſmall. He refers Oeder's figure to this ſpecies; but obſerves that he has never ſeen any ſpecimen ſo large as that repreſents.

Native of the European mountains from Lapland to Italy.

It flowers in auguſt and ſeptember. Introduced in 1775, by Drs. Pitcairn and Fothergill [b].

16. A very ſmall perennial plant, guarded with fading, dry leaves [c]. Native of Siberia.

17. Annual. Native of Virginia.

18. Annual. Stem ſimple, filiform, hairy, upright, a foot high. Leaves attenuated to the petioles, half-ſtem-claſping, obtuſe, upright, an inch in length. Flowers terminating. Feather ſimple, ferruginous. Native of Japan; flowering in june.

19. Stem filiform, branched, purpliſh, ſmooth. Leaves from each bud three or four, ſubſeſſile, ſharp, with ſetaceous teeth, villoſe on both ſides, half an inch in length. Flowers among the leaves, axillary, ſolitary. Having ſeen only a ſingle flower, and that not open, Thunberg ſays he is not very certain about the genus [d].

20. Root perennial, bitten. Stem ſhort, woody. Branches ſimple, one-flowered. Leaves ſcattered, lanceolate, ſubpetioled, quite entire. Flowers yellow, like thoſe of *Aſter,* terminating, ſeſſile. Feather gray [e]. According to Gouan, the ſtem is from two

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[r] Linn. mant.

[s] Hort. kew.

[t] Woodw. MSS. Curtis, Leers, Withering.

[u] Kroecker.

[x] Ger. prov.

[y] Villars.

[z] Hort. kew.

[a] Linn. ſuec. Haller, Gunner.

[b] Hort. kew.

[c] Linn. ſpec.

[d] Thunberg.

[e] Linn. ſpec. & ſyſt.

inches to a hand in height, covered with pellucid ſcattered hairs, thicker at the baſe. Branches few, terminating, divaricate. Lower leaves obovate-lanceolate or ſpatulate, often quite entire, not ſeldom toothletted. Peduncles rigid, rough with hairs, terminating, thickened at top; rather hiſpid, and frequently leafy. Flower twice as large as ſome of the other ſpecies. Calyx ſquarroſe, with the ſcales not unfrequently broader at the tip, and almoſt equal[f].—It is the link between this genus and *Aſter*. The varieties are from Gronovius[g].

Native of the South of France and Syria.

21. Root perennial, thick, fibrous, from which ariſe ſeveral upright, hairy ſtalks, near four feet high, putting out ſeveral ſide branches. Leaves ſeſſile, hairy, a quarter of an inch broad towards the end, where they are broadeſt, and diminiſhing gradually to their baſe; of a deep green on their upper ſide, and pale on their under, continuing all the year: they come out from the ſide of the ſtalk and branches in cluſters from the ſame point, and without order on every ſide. The ſtem is terminated by ſeveral large corymbs of golden-coloured flowers. Theſe appear late in the autumn, continuing in beauty great part of the winter, fading in the ſpring, and are ſometimes ſucceeded by oval ſeeds, which ripen in England.

The ſtems generally decay the ſecond year, and are then ſupplied by new ones from the ſame root; the old ones remaining with their green hairy leaves in vigour, until the young ones are grown to a conſiderable height. Native of the Cape of Good Hope; and has been long cultivated in the curious European gardens[h].

It has a great reſemblance to *Inula fœtida*, but the flowers are floſculous[i].

Cultivated in 1722, in the botanic garden at Chelſea[k].

22. Annual. Stem herbaceous, a hand high, round, erect, hairy, branching very much. Branches from all the axils; the lower ones gradually longer, diffuſed, at top dichotomous, oppoſite. Leaves ſeſſile, half-ſtem-claſping, veined, not wrinkled, brittle, thinly haired; almoſt naked underneath, toothletted, ſharpiſh. Flowers ſolitary, the length of the peduncle, one-flowered, copious. Calyx cylindric, pubeſcent, with numerous, equal, ſubulate, approximating leaflets. Corollas yellow. Corollets of the diſk five-toothed; of the ray copious, but ſcarcely conſpicuous. Stigmas of the diſk erect, of the ray patulous. Native of the Eaſt-Indies[l].

23. A ſmall ſhrub, very much branched or panicled, leafy. Leaves ſubpetioled, ſcarcely half an inch long, naked. Flowers terminating, ſeſſile, ſeveral heaped together, the length of a leaf. Calyx the ſize of a lentil ſeed. Female florets copious, apetalous. Feather ſcarce longer than the calyx, ſimple. Native of Mexico; obſerved there by Mutis[m].

24. Stem herbaceous, upright, a foot high, ſomewhat hiſpid, ſimple. Leaves the length of a finger, ſomewhat toothed, roughiſh. Flowers terminating, ſubglomerate, yellow, the ſame ſize as in *E. acre*. Feather white. Native of the Cape of Good Hope[n].

25. Stem three feet high and more, round, ſtreaked, tomentoſe, red. Leaves ſeſſile, tomentoſe-hiſpid; the lower ones toothed, the upper ſerrate. Peduncles long, raceme-panicled, with one or two narrow-lanceolate leaves on them, generally entire. Calyx tomentoſe, with linear leaflets the length of the feather. Florets of the ray many, capillary, a little ſhorter than the feather; of the diſk funnel-form, few, the length of the feather, fertile. Feather ſimple, copious. Native of Sumatra[o].

26. Stem upright, ſimple, tomentoſe. Leaves petioled, with one or two long, ſharp teeth at the baſe on each ſide. Panicle diffuſed. Flowers the ſize of *Conyza cinerea*. Calyx imbricate, the outmoſt leaflets very ſhort, the inner a little longer than the florets: theſe ſeem to be yellow (as far as can be ſeen from a dry ſpecimen), and there are about twenty in the diſk: in the ray fewer, and thoſe filiform. Feather ſimple, reddiſh.—Native of Java. The two laſt were brought to Europe by Wennerberg[p].

27. Stem herbaceous, two feet high, erect, round. Leaves ſcattered. Flowers few, in a terminating erect panicle. Florets in the diſk yellow; in the ray ſtiff, quite entire, blue, many. Calyx ſubſquarroſe. Native of China near Canton[q].

28. This is an annual plant, native of Jamaica and Hiſpaniola[r].

29. Stem erect ſtriated pubeſcent, tomentoſe at top, branches woody. Leaves quite entire. Pedicels capillary, with a pair of minute leaflets towards the tip. Calyxes villoſe; ſcales briſtle-ſhaped, ſhorter than the down. Corollas of the ray naked. Native of Arabia.

30. This is a ſhrub with tomentoſe branches. Leaves ſeſſile, approximating, gradually narrowed at the baſe, ſharpiſh, a little rolled back at the edge, ſometimes having a ſingle tooth or two. Corymbs terminating, many-flowered. Calyx ſubvilloſe, with linear leaflets. Corollets of the ray naked. Down ferruginous, longer than the calyx. Native of Arabia Felix[s].]

PROPAGATION AND CULTURE.

1. This plant is propagated by ſeeds, which, if ſown in autumn, will more certainly ſucceed than thoſe which are ſown in the ſpring. When the plants come up, they ſhould be thinned if they are too cloſe, and kept clean from weeds till autumn, when they ſhould be tranſplanted where they are to remain. They delight in a dry ſoil, and a ſunny expoſure. The ſecond year the plants will flower and perfect their ſeeds, but the roots will continue ſeveral years, and annually produce their flowers and ſeeds.

6, 7, 13, 14. Are preſerved in botanic gardens for the ſake of variety, but are ſeldom admitted into gardens for pleaſure. The fourteenth ſort is a perennial plant, which grows naturally on the Alps, and may be propagated by ſeeds in the ſame manner as the firſt ſort, but ſhould have a ſhady ſituation, and a moiſt ſoil.

The others are annual plants, which, if once admitted into a garden, and ſuffered to ſcatter their ſeeds, will become very troubleſome weeds there. They will help very well to cover rubbiſh or rockwork.

21. This is too tender to thrive in the open air in this country, ſo the plants ſhould be kept in pots; and if in the winter they are placed in a common frame, where they may have a large ſhare of free air in mild weather, and ſcreened from hard froſts, they will thrive better than with tender treatment. It is eaſily propagated by cuttings, which, if planted in may, will readily put out roots; and the young plants will flower the autumn following.

[ERIGERON. See *Conyza, Crepis, Inula.*

ERIGERUM. See *Senecio.*

ERINACEA. See *Anthyllis.*

ERINACEUS. See *Hydnum.*

ERINGO. See *Eryngium.*]

ERINUS. (Ερινος *of Dioſcorides.* Erineon *of Pliny. Derivation unknown.*)

Lin. gen. n. 771. *Reich.* 832. *Schreb.* 1034. *Juſſ.* 100. *Gærtn. t.* 55. *Ageratum Tourn.* 422.

Claſſ. 14. 2. Didynamia Angioſpermia.

Nat. order of *Perſonatæ.—Pediculares.* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved: *leaflets* lanceolate, upright, nearly equal, permanent.

COR. one-petalled, unequal. *Tube* ovate-cylindric, length of the calyx, bent back. *Border* flat, five-parted: *diviſions* equal, obcordate.

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[f] Illuſtr. 67.
[g] Linn. ſpec. & ſyſt.
[h] Mill. fig.
[i] Linn.
[k] Hort. kew.
[l] Linn. mant.
[m] Linn. ſuppl.
[n] Ibid.
[o] Retz.
[p] Retz.
[q] Loureiro.
[r] Swartz.
[s] Vahl.

STAM. *Filaments* four, very ſhort, within the tube of the corolla, of which the two oppoſite ones are a little longer. *Anthers* ſmall.

PIST. *Germ* ſomewhat ovate. *Style* very ſhort. *Stigma* headed.

PER. *Capſule* ovate, rolled up in the calyx, two-celled, gaping two-ways.

SEEDS numerous ſmall.

ESSENTIAL CHARACTER.

Cal. five-leaved. *Cor.* border five-cleft, equal, with the lobes emarginate; upper lip very ſhort, reflex. *Capſ.* two-celled.

SPECIES.

1. Erinus alpinus. *Alpine Erinus.*

Lin. ſpec. 878. *ſyſt.* 570. *Reich.* 3. 175. *mant.* 421. *Gærtn. fruct.* 261. *Hall. helv. n.* 302. *Sauv. monſp.* 116. *Curt. magaz. t.* 310. *Villars dauph.* 2. 443.

Ageratum ſerratum alpinum. *Bauh. pin.* 221.

A purpureum. *Dalech.* 1184. *Bauh. hiſt.* 3. 144. *f.* 1. *Raii hiſt.* 1055. *Park. theat.* 79.

β. A. minus ſaxatile, fl. albo. *Barrel. ic.* 1192.

Flowers racemed, leaves ſpatulate.

[2. Erinus africanus.

Lin. ſpec. 878. *Reich.* 3. 176. *hort. cliff.* 501. *n.* 2. (Buchnera). *Burm. afr.* 139. *t.* 50. *f.* 1. *Pluk. mant.* 83. *Raii ſuppl.* 401.

β. *Lin. mant.* 421. Buchnera fol. acutis dentatis. *Lin. hort. cliff.* 501. *n.* 1. *Gron. virg.* 95.

Flowers lateral, ſeſſile; leaves lanceolate ſomewhat toothed.

3. Erinus capenſis.

Lin. ſpec. Reich. 3. 176. *mant.* 252.

E. Lychnidea. *Lin. ſuppl.* 287.

Flowers ſpiked, leaves linear toothed.

4. Erinus fragrans.

Ait. hort. kew. 2. 357.

Selago Lychnidea. *Lin. ſpec.* 877. *Reich.* 3. 172. *Amœn.* 6. 89. *Berg. cap.* 158.

α. limbo corollæ ſordide purpuraſcente.

Dark-flowered Erinus.

β. limbo cor. ſordide flaveſcente.

Yellow-flowered Erinus.

Leaves lanceolate-oblong toothed; diviſions of the border entire.

5. Erinus peruvianus.

Lin. ſpec. 879. *Reich.* 3. 177. *Feuill. peruv.* 3. *t.* 25. *f.* 3. (Lychnidea).

Leaves lanceolate-ovate ſerrate.

6. Erinus maritimus.

Lin. ſyſt. 571. *ſuppl.* 287.

Leaves lanceolate quite entire ſmooth; diviſions of the border cloven half way.

7. Erinus triſtis.

Lin. ſyſt. 571. *ſuppl.* 287.

Leaves oblong gaſhed toothed, diviſions of the border emarginate.

8. Erinus laciniatus.

Lin. ſpec. 879. *Reich.* 3. 177. *Feuill. peruv.* 3. 35. *t.* 25.

Verbena Aubletia. *Curt. magaz.* 308. *Ait. hort. kew.* 1. 33. *Lin. ſyſt.* 66. *ſuppl.* 86. *Jacqu. hort.* 2. 82. *t.* 176.

Buchnera canadenſis. *Linn. mant.* 88. *ſyſt. ed.* 13. 478.

Leaves laciniate.]

9. Erinus tomentoſus.

Mill. dict. n. 2.

Ageratum americanum procumbens, gnaphalii facie, floribus ad foliorum nodos. *Houſt. Mſs.*

Tomentoſe, ſtems procumbent, flowers ſeſſile axillary.

10. Erinus americanus.

Mill. dict. n. 3.

A. americ. erectum ſpicatum, fl. purpureo. *Houſt. Mſs.*

Stem erect, leaves lanceolate oppoſite, flowers looſely ſpiked terminating.

11. Erinus fruteſcens.

Mill. dict. n. 4.

A. fruteſcens, fol. dentatis latioribus, villoſum. *Houſt. Mſs.*

Stem upright ſhrubby, leaves ovate-lanceolate ſerrate alternate, flowers axillary.

12. Erinus verticillatus.

Mill. dict. n. 5.

A. amer. procumbens, fol. ſubrotundis ſerratis glabris. *Houſt. Mſs.*

Stem branching trailing, leaves ovate ſerrate ſmooth oppoſite, flowers in whorls.

13. Erinus procumbens.

Mill. dict. n. 6.

A. amer. procumbens glabrum, flor. luteis longis pediculis inſidentibus. *Houſt. Mſs.*

Lindernia dianthera. *Swartz prodr.* 92.

Stems procumbent, leaves ovate ſmooth, flowers ſolitary axillary, peduncles longer.

DESCRIPTIONS, &c.

[Leaves moſtly alternate; flowers either axillary or with one bracte to each, in a terminating ſpike[a].

1. Root perennial. The root-leaves form a thick tuft cloſe to the ground, they are all linear-ſpatulate, pubeſcent, with a few ſerratures at the end on both ſides. Leaves on the ſtem alternate. Stems many, very ſimple, a hand high, round, pubeſcent, upright; the ſide ones barren and decumbent. Flowers alternate, ſeparated by leaves like thoſe on the ſtem, but ſmaller, and forming an upright, ſimple raceme. Calyx bell-ſhaped, five-parted, permanent. Corolla funnel-ſhaped. Stigma with two ſmall roundiſh oppoſite ears[b]. Capſule ſmall, grooved on each ſide, the valves when ripe bifid to the middle. Partition doubled, formed by the edges of the valves bent in. Receptacle oblong, compreſſed a little, not faſtened to the partition. Seeds ovate, ferruginous, rugged with obſcure crowded tubercles[c].]

The leaves are about half an inch long, and one-eighth of an inch broad, of a dark green. The flower-ſtalk is ſcarce two inches high; the flowers are in a looſe raceme, and purple. They appear in may, or earlier, and ſometimes are ſucceeded by ripe ſeeds in july.

[It is a deſirable little plant for the decoration of rock-work, growing in cloſe tufts, and producing its numerous lively purple flowers during moſt of the ſummer months[d].

Native of Germany, of the Swiſs Alps, of the Pyrenees, and the South of France.—Cultivated in 1759, by Mr. Miller[*].

2. Stem herbaceous, branched, a ſpan long, declined. Leaves oppoſite, ſeſſile, obtuſe. Flowers ſolitary, in the axils of the leaves, purple, ſlender.

Native of Africa; communicated by Burmann.

β. Stem herbaceous, ſimple, a ſpan high, erect. Leaves oppoſite, ſeſſile, acute. Flowers ſolitary, from the axils of the upper leaves, purple, twice as large as in the other.—Native of Africa; communicated by Gronovius[f].

3. Perennial. Stem erect, round, pubeſcent, two feet high. Leaves alternate, except the lower ones, which are oppoſite, ſeſſile, linear, toothed, remote, pubeſcent. Spike terminating, oblong, imbricate with broader, ovate-lanceolate, toothed bractes. Calyx ſeſſile, the length of the bractes, five-toothed, two-parted, upright, obtuſe, broader at bottom. Corolla yellow, ſmelling very ſweet: tube filiform, three times as long as the calyx; the five lobes of the border are cloven half way, obovate and equal: two of the anthers at the mouth of the tube, and two below the jaws. Style filiform the length of the tube[g].

Native of the Cape of Good Hope,

4. Stem ſimple; leaves alternate, from the axils; ſpike long with the flowers remote; corollas tomentoſe on the outſide, of a dark colour, fragrant at night.

Native of the Cape of Good Hope.

This was introduced in 1776, by Meſſrs. Kennedy and Lee[h].

5. Native of Peru. Said alſo to be found at the Cape.

[a] Juſſieu.
[b] Linn. ſyſt.
[c] Gærtner.
[d] Curtis.
[e] Hort. kew.
[f] Linn. cliff.
[g] Linn. mant.
[h] Hort. kew.

6. There is no deſcription of this or of the others.

7. The flowers are of a dull colour, but ſweet[h].

All theſe are natives of the Cape.

8. See Buchnera canadenſis and Verbena Aubletia.]

9. Stems trailing, about ſix inches long. Leaves ſmall, oval, placed on every ſide, very white and woolly. At the joints juſt above the leaves come out the flowers, ſitting very cloſe to the ſtems: they are white, and are ſucceeded by round capſules.—This plant has great reſemblance at a diſtance to Sea Cudweed. It was ſent to Mr. Miller by Dr. Houſtoun from La Vera Cruz.

10. Stem upright, two feet high: towards the top two ſmaller branches, oppoſite and erect; theſe and the middle ſtalk are terminated by looſe ſpikes of purple flowers, ſucceeded by oval capſules. Diſcovered by Dr. Houſtoun at the ſame place.

11. Stem ſhrubby, about four feet high, dividing into ſeveral ſmall hairy branches. Leaves deeply ſerrate, and on pretty long foot-ſtalks. Flowers ſingle, or two and three at a joint, ſeſſile, white, ſucceeded by round capſules.

12. Stems many, ſmooth, branching out very much on every ſide, about ſeven or eight inches long, and garniſhed with ſmall leaves. Flowers ſeſſile, white, making but little appearance, and ſucceeded by round capſules.

13. Stems ſeveral trailing ſix inches long, dividing into many ſmaller branches. Leaves oppoſite, ovate. Flowers bright yellow, on long ſlender peduncles, ſucceeded by oval capſules.

[This is a ſpecies of Lindernia, according to Swartz, and a native of Hiſpaniola. See *Lindernia*.]

PROPAGATION AND CULTURE.

1. This is propagated by parting the roots in autumn; they muſt have a ſhady ſituation and a loamy ſoil without dung, for in rich earth they are ſubject to rot.

[2. to 7. The Cape ſorts muſt be kept in the greenhouſe, dry ſtove, or glaſs-caſe, and may be increaſed by cuttings.

8, &c. Thoſe from South America muſt be placed in the bark-ſtove.] The eleventh being a ſhrubby plant will continue ſeveral years, but the others are annual. They are propagated by ſeeds, ſown in pots filled with light earth, and plunged into a moderate hot-bed, where ſometimes they will come up in five or ſix weeks; but they frequently do not vegetate till the following ſpring, eſpecially when the ſeeds have been kept long. When the plants are fit to remove, they ſhould be each planted in a ſeparate ſmall pot filled with light earth, not too rich with dung, and then plunged into the bark-pit. When they have taken new root, treat them as other plants from the ſame countries, by admitting proper air when the weather is warm, and frequently refreſhing them with water: with this management the annual ſorts will flower in july and auguſt, and often ripen their ſeeds in autumn, if they be brought forward early in the ſpring.

The ſhrubby ſort muſt alſo frequently be refreſhed with water in winter, but not in large quantities, nor in very cold weather: the plants will flower and perfect their ſeeds the ſecond year.

[Erinus. See *Campanula* and *Lobelia*.

ERIOCAULON. (*From* ἔριον, *wool, and* καυλος, *a ſtalk.*)
Lin. gen. n. 100. *Reich.* 106. *Schreb.* 132. *Juſſ.* 44. *Gærtn. t.* 83. *Gron. virg.* 14.
Claſſ. 3. 3. Triandria Trigynia.
Nat. order of *Enſatæ.—Junci.* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* common globoſe-depreſſed, imbricate. *Scales* lanceolate, equal, permanent.

Cor. *Univerſal* uniform, convex.
Proper three-petalled. *Petals* equal, lanceolate, obtuſe, villoſe at the tip, attenuated at the baſe, and connected into a ſtyle-ſhaped pedicel which is hairy.

Stam. *Filaments* three, capillary, ſitting on the germ. *Anthers* oblong, verſatile.

Pist. *Germ* ſlender, ſuperior, under the ſtamens. *Styles* three, capillary, ſhort. *Stigmas* ſimple.

Per. none. *Calyx* unchanged.

Seeds ſolitary, crowned with the corolla.

Rec. *Chaffs* of the ſize and figure of the calycine ſcales, one-flowered, very many.

Obs. *In* Er. decangulare *the florets of the diſk are male, of the circumference female.*
Other ſpecies muſt be ſurveyed before the character can be completed.
Syſt. Veget. p. 109. R.

ESSENTIAL CHARACTER.

Cal. common, an imbricate head. *Pet.* three, equal. *Stam.* upon the germ.

SPECIES.

1. Eriocaulon triangulare.
Lin. ſpec. 128. *Reich.* 1. 243.
Plantaginella aurea, &c. *Breyn. cent. t.* 50. *Mor. hiſt.* 3. 259. *ſ.* 8. *t.* 16. *f.* 17.
Culm triangular, leaves enſiform, head ovate.

2. Eriocaulon quinquangulare.
Lin. ſpec. 129. *Reich.* 1. 243. *fl. zeyl. n.* 48. *Pluk. alm. t.* 221. *f.* 7.
Culm quinquangular, leaves enſiform.

3. Eriocaulon ſexangulare.
Lin. ſpec. 129. *Reich.* 1. 243. *fl. zeyl. n.* 49. *Burm. ind. t.* 9. *f.* 4. *Pluk. mant.* 48. (Gramen junceum.)
Culm hexangular, leaves enſiform.

4. Eriocaulon ſetaceum.
Lin. ſpec. 129. *Reich.* 1. 244. *Fl. zeyl. n.* 50. *Lour. cochinch.* 60. *Gærtn. fruct.* 2. 14. *Petiv. gaz. t.* 53. *f.* 10. (Randalia.) *Rheed. mal.* 12. *t.* 63. *Burm. zeyl.* 109. 2. (Gramen junceum.) *Rumph. amb. l.* 10. *c.* 13. *t.* 7. *f.* 1.
Culm hexangular, leaves ſetaceous.

5. Eriocaulon decangulare.
Lin. ſpec. 129. *ſyſt.* 128. *Reich.* 1. 244. *mant.* 327. *Pluk. amalth. t.* 409. *f.* 5. *Petiv. gaz. t.* 6. *f.* 2. (Randalia). *Gron. virg.* 13. (Globulariæ affinis).
Culm decangular, leaves enſiform.

6. Eriocaulon quadrangulare.
Lour. cochinch. 60.
Culm quadrangular, leaves enſiform, head of flowers globular, truncate at the baſe.

DESCRIPTIONS, &c.

1. Linneus ſays he could not diſcern the floſcules in Piſo's herbarium, which is in the poſſeſſion of Burmann.—Native of Braſil.

2. Native of the Eaſt Indies.

3. The leaflets ſurrounding the head inſtead of an univerſal calyx, are orbiculate; not, as in the foregoing, narrow[a].

4. This is a ſmall annual herb, tufted and bent back in a ring. Culm very ſlender, four inches high, almoſt naked. Leaves ſhort few, vaniſhing as they grow old. Heads terminating ſmall oblong ſub-acute[b].

Flowers aggregate, male and female in the ſame common, globular, chaffy receptacle. Calyx none. The male flowers have three petals to the corolla, ſomewhat hirſute on the outſide, and ſix ſtamens: the females have ſix petals, and reſemble the males: they have a roundiſh three-cornered germ and three ſtyles. The capſule is membranaceous, diaphanous, pedicelled, three-celled, with one ſmall, compreſſed. ovate, ſmooth ſeed, with a little beak at top, and of a reddiſh colour, in each cell: it ſcarcely ever opens ſpontaneouſly[c]. According to Loureiro, the ſeeds are ſubtriquetrous.

The leaves are altogether ſetaceous. A membranaceous ſheath like a ſpathe includes the culm at the baſe. The roots are diſperſed in the water[d].

Theſe are natives of the Eaſt Indies, and this of Cochinchina.

5. Leaves two, ſubulate, flat, channelled, jointed, Flowers in a head, with male flowers in the diſk, and female in the circumference.

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[h] Linn. ſuppl.

[a] Linn. zeyl. [b] Loureiro. [c] Gærtner. [d] Linn. zeyl.

The character of the genus remains to be examined in the other ſpecies. Hope has very well deſcribed this. The remaining ſpecies muſt be ſeen, before the character can be corrected[e].

Native of North America, in the ſwamps.

6. This is an annual herb, with an upright naked four-cornered culm, eight inches high. Leaves ſhort, ſmooth, few. Head of flowers whitiſh, flattiſh at the baſe, with roundiſh ſcales, attenuated at bottom, one-flowered, cloſed. Petals two, ſubconcave, blunt at the tip, toothed. Seeds three ovate. Common every where in Cochinchina[f].]

ERIOCEPHALUS. (*From εριον, wool, and κεφαλη, a head.*)

Lin. gen. n. 994. *Reich.* 1078. *Schreb.* 1344. *Dill. elth.* 110. *Juſſ.* 186. *Gærtn. t.* 168.

Claſſ. 19. 4. Syngeneſia Polygamia Neceſſaria.

Nat. order of *Compoſitæ Nucamentaceæ.—Corymbiferæ.* Juſſ.

GENERIC CHARACTER.

CAL. Common upright: ſcales ten, ovate, equal, converging, of which the five exterior are keeled, the interior flat.

COR. compound rayed: *corollules* hermaphrodite twice as many in the diſk. *Females* five in the ray.

Proper of the hermaphrodite funnel-form; *border* five-cleft, patulous.

Of the *ray* ligulate, obcordate, with three-lobed, equal tips.

STAM. in the hermaphrodites. *Filaments* five, capillary, very ſhort. *Anther* cylindric, tubular.

PIST. In the hermaphrodites. *Germ* very ſmall, naked. *Style* ſimple. *Stigma* two-cleft, ſharp.

In the females, *germ* ovate, naked. *Style* ſimple, *Stigma* acuminate, inflex.

PER. none. *Calyx* ſcarce changed.

SEED to the hermaphrodites none.

Females ſolitary, obovate, naked.

REC. naked, flat: or elſe a down of the calyx in a double row is interſperſed both between the hermaphrodite and female floſcules.

OBS. *A compreſſed corpuſcle adheres to the baſe of each calycine ſcale.*

ESSENTIAL CHARACTER.

Recept. ſubvilloſe. *Down* none. *Cal.* ten-leaved, equal. In the *ray* five floſcules.

SPECIES.

1. Eriocephalus africanus. *Cluſter-leaved Eriocephalus.* *Lin. ſpec.* 1310. *Reich.* 3. 938. *hort. cliff.* 424. *Dill. elth.* 132. *t.* 110. *f.* 134. *Walth. hort.* 1. *t.* 1. (Abrotanum).

Leaves entire and divided, flowers corymbed.

[2. Eriocephalus racemoſus. *Silvery-leaved Erioceph.* *Lin. ſpec.* 1311. *Reich.* 3. 939. *amœn.* 6. *afr.* 87. *Gærtn. fruct.* 2. 428. *Raii ſuppl.* 233. (Abrotanum).

Leaves linear undivided, flowers racemed.]

DESCRIPTIONS, &c.

1. This plant has a ſhrubby ſtalk from four to ſix feet high, putting out many ſide branches the whole length. Leaves woolly, coming out in cluſters, ſome taper and entire, others divided into three or five parts, which ſpread open like a hand; they have a ſtrong ſmell when bruiſed approaching to that of Lavendar Cotton, but not quite ſo rank. The flowers are produced in ſmall cluſters at the ends of the branches, and ſtand erect. The female florets which compoſe the ray form a hollow, in the middle of which the hermaphrodite florets forming the diſk are ſituated: the border is white, with a little reddiſh caſt on the inſide, and the diſk is of a purpliſh colour. The flowers appear in autumn, but do not produce ſeeds in this country.

[Cultivated in 1732, by James Sherard, M. D. at Eltham. It flowers from january to march[g].

2. This has the ſtature and appearance of *E. africanus*, but all the leaves are undivided: flowers on pedicels ſhorter than the calyx: outer ſcales of the calyx four, ovate, ſubtomentoſe, with a very ſoft wool from the boſom of them[h].

Gærtner affirms, that there is no veſtige whatever of the outer calyx in this ſpecies. The receptacle is flat, and has a copious ſilky down on it, of a whitiſh ſtraw-colour, and longer than the florets. Seeds of the females oblong, narrowed downwards, compreſſed-three-ſided, hairy or ſparingly woolly, but otherwiſe deſtitute of all down.

This was cultivated by Mr. Miller in 1758. It flowers in march and april[i].

Both are natives of the Cape of Good Hope.]

PROPAGATION AND CULTURE.

1. This plant is propagated by cuttings, which may be planted any time from may to the middle of auguſt, for if they are planted later in the ſeaſon, there will not be time for them to get good root before the winter; theſe cuttings ſhould be planted in ſmall pots filled with light earth, and plunged into a very moderate hot-bed, where they ſhould be ſhaded from the ſun till they have taken root; theſe muſt be refreſhed with water two or three times a week, but they ſhould not have too much at each time, for much moiſture is very hurtful to theſe plants. When the cuttings have taken root, they ſhould be gradually inured to the open air, to prevent their ſhoots from being drawn up weak; afterward, they ſhould be removed into the open air, and placed in a ſheltered ſituation, where they may remain till october, when they muſt be removed into an airy glaſs-caſe, that they may have as much ſun as poſſible, and enjoy the free air in mild weather, but ſecured from froſt and damp air, either of which will ſoon deſtroy them. During the winter they muſt be ſparingly watered, for the reaſon before given; but, in the ſummer, when the plants are placed in the open air, they will require to be frequently refreſhed with water in hot weather.

Theſe plants retaining their leaves all the year, add to the variety of exotics in the winter ſeaſon.

[ERIOCEPHALUS. See *Erica Bruniades*, *Centaurea*, and *Hippia*.

ERIOPHOROS. See *Bombax*.

ERIOPHŎRUM. (*From* ἔριον, *wool, and* φερω, *to bear; wool or cotton-bearing; the ſeeds having a long, white, downy ſubſtance affixed to them.*)

Lin. gen. n. 68. *Reich.* 74. *Schreb. n.* 95. *Gærtn. t.* 2. *Juſſ.* 27. Linagroſtis. *Mich.* 31. *Tourn.*

Claſſ. 3. 1. Triandria Monogynia.

Nat. order of *Calamariæ.—Cyperoideæ.* Juſſ.

GENERIC CHARACTER.

CAL. *Spike* on all ſides imbricate: *ſcales* ovate-oblong, flat-inflected, membranaceous, looſe, ſharp-pointed, ſeparating the flowers.

COR. none.

STAM. *Filaments* three, capillary. *Anthers* upright, oblong.

PIST. *Germ* very ſmall. *Style* filiform, length of the calycine ſcales. *Stigmas* three, longer than the ſtyle, bent backwards.

PER. none.

SEED three-ſided, acuminate, furniſhed with villoſe hairs longer than the ſpike.

OBS. *Some ſpecies are polygamous.*

ESSENTIAL CHARACTER.

Glumes chaffy, imbricate every way. *Cor.* none. *Seed* one, ſurrounded with a very long wool.

SPECIES.

1. Eriophorum vaginatum. *Mountain* or *ſingle-ſpiked Cotton-graſs.* *Lin. ſpec.* 76. *Reich.* 1. 142. *fl. lapp. n.* 23. *ſuec. n.* 50. *Hudſ. angl.* 22. *With.* 52. *Curtis lond.* 4. 10. *Lightf.* 90. *Hall. helv. n.* 1332. *Pollich pal. n.* 51. *Krock. ſileſ. n.* 80. *Fl. dan. t.* 236.

Linagroſtis vaginata. *Scop. carn. n.* 64.

L. ſpica ſingulari. *Tourn. par. ed. engl. p.* 84.

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[e] Linn. ſyſt.

[f] Loureiro.

[g] Hort. kew.

[h] Linn. amoen.

[i] Hort. kew.

Juncus alpinus capitulo lanuginoſo ſ. Schoenolagurus. *Bauh. pin.* 12. *prodr.* 23. *theat.* 188. *Scheuch. agr.* 302. *t.* 7. *f.* 1, 2, 3. *Rudb. elyſ.* 1. 108. *f.* 1. *Reliqu. Rudb.* 29.
J. alp. cum cauda leporina. *Bauh. hiſt.* 2. 514. 2. *Raii ſyn.* 436. *hiſt.* 1306.
Gramen tomentoſum alpinum & minus. *Bauh. pin.* 5. *prodr.* 10. *Rudb. elyſ.* 1. 36. *f.* 3.
Gramen juncoides lanatum alterum danicum. *Park. theat.* 1271.—1272, 1, 2, 5. *Mor. hiſt.* 3. 224. *ſ.* 8. *t.* 9. *f.* 6.
Culms ſheathed round, ſpike ſcarioſe.

2. Eriophorum polyſtachion. *Many-ſpiked Cotton-G. Lin. ſpec.* 76. *Reich.* 1. 143. *Fl. lapp. n.* 22. *ſuec. n.* 49. *hort. cliff.* 22. *Hall. helv. n.* 1331. *Leers herborn. n.* 37. *t.* 1. *f.* 5. *Krock. ſileſ. n.* 81. *Gærtn. fruct.* 10.
Linagroſtis polyſtachya. *Scop. carn. n.* 66.
L. panicula ampliore. *Vaill. par. t.* 16. *f.* 2. (good). *Scheuch. agr.* 306. *Dill. giſſ.* 48.
Linagroſtis. *Tabern. hiſt.* 559.
Gramen pratenſe tomentoſum panicula ſparſa. *Bauh. pin.* 4. *theat.* 61. *Rudb. elyſ.* 1. 36. *f.* 2.
G. tomentarium. *Tabern. ic.* 230. *Ger.* 27. 1.
Gnaphalium Tragi. (683) ſ. Juncus bombycinus. *Bauh. hiſt.* 2. 514. 1.
Culms columnar, leaves flat, ſpikes peduncled.

3. Eriophorum anguſtifolium. *Narrow-leav. Cotton-G. Dickſ. in Linn. tranſ.* 2. 289. *Hoffm. fl. Deutſchl. p.* 19. *Vaill. par. t.* 16. *f.* 1. (Linagroſtis panicula majore.)
E. polyſtachion. *Hudſ. angl.* 21. *Wither. arr.* 53. *Curt. lond.* 4. *t.* 9. *Relh. cant. n.* 39. *Pollich pal. n.* 52.
Linagroſtis. *Tabern. Raii ſyn.* 435.
Gramen tomentarium. *Tabern. ic.* 230. *Ger. emac. t.* 29. *f.* 1. *Raii hiſt.* 1306. 1.
Gramen eriophorum. *Dod. pempt.* 562. 2.
Culms columnar, leaves channelled-three-ſided, ſpikes peduncled.

4. Eriophorum virginicum.
Lin. ſpec. 77. *Reich.* 1. 143. *Gron. virg.* 11.—132. *Pluk. alm. t.* 299. *f.* 4. *Mor. hiſt. ſ.* 8. *t.* 9. *f.* 2. (Gramen tomentoſum).
Culms leafy, columnar, leaves flat, ſpikes upright.

5. Eriophorum cyperinum.
Lin. ſpec. 77. *Reich.* 1. 143. *Gron. virg.* 12. (Scirpus). *Pluk. mant. t.* 419. *f.* 3. *Raii ſuppl.* 620. 13. (Cyperus).
Culms columnar leafy, panicle ſuperdecompound proliferous, ſpicules moſtly in threes.

6. Eriophorum alpinum.
Lin. ſpec. 77. *Reich.* 1. 144. *Fl. lapp. n.* 24. *ſuec.* 51. *Hall. helv. n.* 1333. *Krock. ſileſ. n.* 82. *t.* 17. *Fl. dan. t.* 620.
Linagroſtis alpina. *Scop. carn. n.* 65. *Mich. gen.* 54.
L. juncea alp. capitulo parvo, tomento rariore. *Scheuch. agr.* 305. *t.* 7. *f.* 4. *Hall. app.* 1. *t.* 8.
Juncus alp. bombycinus. *Bauh. pin.* 12. *prodr.* 23. *theatr.* 188. *Bauh. hiſt.* 2. 515.
Culms naked three-cornered, ſpike ſhorter than the down.

DESCRIPTIONS, *&c.*

Root perennial. Culm cylindric. Leaves linear. Allied to the graſſes.

1. Root-leaves obſcurely three-cornered, ſharp, ſtreaked on two ſides; convex on one ſide, flat on two ſides. Scape twice as long as the leaves, flattiſh on one ſide, ſtreaked. Stem-leaves awnleſs, ſheathing; ſheath ſwelling a little; the uppermoſt purple at the baſe. Spike ovate, imbricate on every ſide with membranaceous brown ſcales; the lower ones barren, the upper ones woolly-fruit-bearing[a].

It differs very obviouſly from the third ſpecies: the root being not creeping but more matted; the leaves much finer, and conſequently more apt to grow in tufts; the ſheath of the upper ſtem-leaf in particular is remarkably inflated, and it never produces more than one ſpike, which is upright[b].

Native of bogs in cold barren ſituations, in many parts of Europe. Not ſo general with us, but in ſome places equally common. Near London on Shirley-common by Croydon; near Lynn; Birmingham-heath. Frequent in all the northern counties; Elſemere-meers in Shropſhire; Pillinmoſs in Lancaſhire.

It flowers ſomewhat earlier than the anguſtifolium, but produces its down about the ſame time[c].

Sheep are very fond of it, whence in Weſtmoreland they call it *Moſs-crops*[d]. As they do alſo the third ſpecies, not diſtinguiſhing them.—Ray calls it *Hair's-tail Ruſh*.

2. Linneus confounds this and the next ſpecies together; and refers to the firſt figure of Vaillant only as a variety of his polyſtachyon: but if he had ever ſeen both plants together, he would doubtleſs have made them diſtinct ſpecies. The following particulars may ſerve to ſhow in what our plant differs from E. polyſtachyon. 1. The root of that is not creeping. 2. The culm is very erect. 3. The leaves are ſhort and flat. 4. The ſpikes are many, upon ſlender foot-ſtalks, and pendulous. 5. The involucre is ſhorter than the ſpike[e].

3. Our Engliſh writers have followed Linneus in confounding this with the foregoing, till Mr. Dickſon diſtinguiſhed them.

Stem from nine inches to a foot or more in height, upright, ſmooth, with two joints projecting a little, covered throughout its whole length with the ſheaths of the leaves. Thoſe next the root are of a cheſtnut colour, ſhort, lanceolate, ſtreaked, marked with tranſverſe lines, which give them a reticulated appearance: the ſucceeding leaves at their baſe cloſely embracing the ſtalk, from two to three lines in breadth, about ſeven inches or more in length, gradually tapering to the extremity, convex on one ſide, concave on the other, and ſmooth; the uppermoſt leaves flatter, much ſhorter, and manifeſtly keeled; ſheaths nearly of an equal thickneſs throughout, where a leaf goes off more looſely connected, and marked with a fiſſure filled by a membrane. Floral-leaves three or four, of unequal lengths, forming ſheaths at bottom, terminate the ſtalk, from the axils of which the ſpikelets proceed. Theſe are from two to ſeven (generally about three), ovate, firſt upright, afterwards pendulous[f].

Gærtner deſcribes the fruit as a ſmall coriaceous-cruſtaceous nut, of an obovate form, three-cornered, ſmooth or obſcurely ſtreaked, of a reddiſh cheſtnut colour, one-celled, valveleſs, clothed at the baſe with a white ſilky down, quite ſimple, and twelve times as long as the nut. Seed ſingle, ſub-elliptic, obſcurely three-cornered, pale.

In Germany, and the more northern parts of Europe, the down has been manufactured into various articles of dreſs, paper, and wicks for candles. In ſome parts of Sweden the peaſants ſtuff their pillows with it, whence it is called Poor-man's Pillow: but it become brittle when quite dry.

Early in the ſpring cattle crop the leaves, before the graſſes are ſufficiently grown.

It is common on moors and boggy ground; inſomuch that they are often white all over with it in june and july, when it is in feed. It flowers in april and may.

4. Culms compreſſed. Spike compact, leafy, large, brown or gold-coloured.—Native of Virginia.

5. This has altogether the ſtature of *Cyperus*, but the ſpikelet of *Scirpus*, except that the ſeeds as they ripen produce a dun-coloured or teſtaceous cotton, ſcarcely longer than the ſpikelets[g].—Native of North America.

6. Thick tufts of culms and leaves riſe from the root. Culms without knots very ſlender, three-cornered, round in drawing the fingers from the top downwards, a hand or half a foot in height, involved at the baſe in ſheaths gradually larger, acuminate, the lower ſhorter and brown, the reſt green.

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[a] Linn. ſuec.

[b] Curtis.

[c] Curtis

[d] Ray ſyn.

[e] Dickſon.

[f] Curtis.

[g] Lin. ſpec.

Leaves very ſlender, almoſt ſetaceous, three-cornered, rough backwards, almoſt of the ſame length with the culm. Spikelet erect, having no ſheaths, the leaſt of all the ſpecies, ſwelling, only one or two lines in length, pale yellowiſh brown, with white hairs much longer than the ſpikelet, which is made up of lanceolate, acuminate, imbricate glumes, the loweſt longer and broader than the reſt, divided by a nerve that ſtands out and is extended into a point. Seed very ſmall, yellowiſh[h].

Native of the mountains of Lapland, Sweden, Denmark, Sileſia, Carniola, Switzerland. Flowering in june and july.—It was found by Mr. Brown and Mr. Donn, in a moſs about three miles eaſt of Forfar, in the ſhire of Angus, Scotland. A ſpecimen of it from this place was preſented to the Linnean Society by Mr. Teaſdale, april the 3d, 1792.

PROPAGATION AND CULTURE.

Theſe being bog plants, are ſeldom preſerved in gardens. They may however be planted in pots filled with bog earth, ſet in pans wherein water is kept conſtantly; or by the ſide of ponds or other waters.

ERIOPHORUS. See *Andryala, Bombax, Carduus, Scilla.*

ERIOPILA. See *Duroia.*

ERISITHALES. See *Cnicus.*

ERITHALIS. (Εριθαλις *or* Εριθαλες, *the name of an herb in Pliny* (l. 25. c. 13.) *from* εριθαλης *or* εριθαλλης, *full of verdure.*)

Lin. gen. n. 238. *Reich.* 255. *Schreb.* 324. *Brown. t.* 17. *f.* 3. *Gærtn. t.* 26. *Juſſ.* 206.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Rubiaceæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, ſuperior, pitcher-form, five-toothed, permanent, (ten-toothed, minute, five-cornered, *Sw.*)

COR. one-petalled, five-parted: tube very ſhort; *diviſions* lance-ſhaped, long, bent back. (Petals five, linear, obtuſe, patulous, *Sw.*)

STAM. *Filaments* five, (ſix, eight, ten, from the baſe of the calyx, *Sw.*) ſubulate, patulous, ſcarce the length of the corolla. *Anthers* oblong, linear, erect, *Sw.*)

PIST. *Germ* inferior, roundiſh. *Style* filiform, compreſſed above, length of the ſtamens. *Stigma* ſharp, (bifid, *Sw.*)

PER. *Berry* globoſe, crowned, ten-celled, (eight or ten-celled, *G.* ſlightly ten-grooved, *Sw.*)

SEEDS ſmall, (in each cell one, pendulous, ovate, compreſſed like a lens, *G.*)

ESSENTIAL CHARACTER.

Cor. five-parted, with the diviſions bent back. *Cal.* pitcher-ſhaped. *Berry* ten-celled, inferior.

SPECIES.

1. Erithalis fruticoſa.

Lin. ſpec. 251. *ſyſt.* 218. *Reich.* 1. 488. *Gærtn. fruct.* 1. 129. *Jacqu. amer. pict.* 39. *t.* 260. *f.* 20. *Brown. jam.* 165. *t.* 17. *f.* 3. *Plum. ic. t.* 249. *f.* 2. (Sambucus).

E. odorifera. *Jacqu. amer.* 72. *t.* 173. *f.* 23.

Leaves oppoſite; corymbs compound.

2. Erithalis polygama.

Forſt. fl. auſtral. n. 101.

β. Timonius. *Rumph. amb.* 3. 216. *t.* 140.

Leaves obovate; flowers axillary, males cymed, hermaphrodites ſolitary.

DESCRIPTIONS, &c.

1. This is an upright elegant branching tree, fifteen feet in height. Leaves ſubovate, blunt with a ſmall point, ſhining, quite entire, deep green, paler underneath, petioled, three inches long. Racemes compound, corymbed, axillary, oppoſite. Flowers numerous, caducous, with white petals, moſtly ſix-ſtamened with a ſix-cleft calyx and corolla, ſmelling exactly like the common Syringa. Berries ſmall and purple, (black, *Swartz.*) Seeds about nine, but uncertain in their number; (in each cell one, ruſeſcent, *Gærtner*). Perhaps both the ſpecies of Browne are but varieties of this.

Native of Jamaica, Martinico, *&c.*[i]

Jacquin deſcribes another, which is a native of Curaçao, and probably a variety of this ariſing from its growing in the clefts of rocks, where there is no earth. It is a ſhrub, two feet high, with procumbent diffuſed branches; the leaves are thicker and numerous; the berry and flowers ſmaller; the former entirely void of ſcent, the latter whitiſh or very ſeldom purple.

According to Swartz, it varies with large ovate leaves, and all the parts larger.

The berry, as Gærtner obſerves, may with Jacquin be conſidered as one-celled.

2. Native of the Society Iſles. The variety has narrower leaves[k].

ERITHRÆA. See *Gentiana Centaurium.*

ERNODEA. (*From* ερνωδης, *ramoſus, branched. So named by Swartz.*)

Lin. gen. Schreb. n. 1718. 2. *p.* 788. *Swartz prodr.* 29.

Claſſ. 4. 1. Tetrandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* four-parted, ſmall, ſuperior; *ſegments* erect, acute, equal, permanent.

COR. one-petalled, ſalver-ſhaped: *tube* four-cornered, elongated: *border* four-parted; *ſegments* lanceolate, revolute.

STAM. *Filaments* four, inſerted in the middle of the tube, awl-ſhaped, longer than the corolla. *Anthers* erect, acuminate.

PIST. *Germ* four-cornered, inferior. *Style* filiform, longer than the ſtamens. *Stigma* obtuſe, emarginate.

PER. *Berry* roundiſh, crowned by the calyx, two-grooved, two-celled.

SEEDS ſolitary, hemiſpherical, ſtriated.

OBS. *Allied to Spermacoce.*

ESSENTIAL CHARACTER.

Cal. four-parted. *Cor.* one-petalled, ſalver-ſhaped. *Berry* two-celled. *Seeds* ſolitary.

SPECIES.

1. Ernodea littoralis.

Swartz prodr. 29. *Vahl ſymb.* 2. 28.

Knoxia. *Brown. jam.* 140. 1.

Thymelæa. *Sloan. jam.* 2. 93. *t.* 189. *f.* 1, 2.

DESCRIPTION, &c.

Branches four-cornered, wand-like, jointed, aſh-coloured, leafleſs; branches alternate, two inches long. Leaves on the branchlets oppoſite, ſeſſile, an inch and half long, lanceolate, attenuate to both ends, veinleſs, obſcurely three-nerved or five-nerved, very ſmooth on both ſides, ſhining, quite entire, mucronate, cuſped. Stipules ſurrounding the branch, truncate, ciliate. Flowers axillary, oppoſite, ſeſſile. Calyx deeply four-parted, with lanceolate cuſped ſegments. Tube of the corolla ſlender, longer than the calyx; ſegments of the border linear obtuſe. Stamens the length of the corolla. Stigma truncate.

It varies with broader and narrower leaves[l].

Native of Jamaica, frequent near the ſhore in the pariſh of St. George, running three or four feet or more along the ground, throwing out a few ſpreading branches as it creeps along. The leaves are oblong, pointed and ſtiff; the flowers few, ſingle, at the axils of the upper leaves[m].

Browne named this plant Knoxia, as I preſume, from Knox, who reſided many years in the iſland of Ceylon, and publiſhed an account of it.]

ERYNGIUM. (Ηρυγγιον, *derivation unknown. That from* ερυγη *or* ερυγμος *ructus is too ſilly to be repeated.*)

Engl. *Eryngo.* Fr. *Panicaut.*

Lin. gen. 324. *Reich.* 354. *Schreb. n.* 456. *Tourn.* 173. *Gærtn. t.* 20. *Juſſ.* 256.

Claſſ. 5. 2. Pentandria Digynia.

Nat. order of *Umbellatæ* or *Umbelliferæ.*

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[h] Krocker.

[i] Jacquin.

[k] Forſter.

[l] Vahl.

[m] Browne.

GENERIC CHARACTER.

CAL. *Receptacle common* conic, *chaffs* ſeparating the ſeſſile floſcules.

Involucre of the receptacle many-leaved, flat, exceeding the floſcules.

Perianth proper five-leaved, upright, ſharp, exceeding the corolla, ſeated on the germ.

COR. *univerſal* uniform, roundiſh: *floſcules* all fertile.

Proper five-petalled. *Petals* oblong, the tips bent inwards to the baſe, ſtraitened longitudinally by a line.

STAM. *Filaments* five, capillary, ſtraight, exceeding the floſcules. *Anthers* oblong.

PIST. *Germ* hiſpid, inferior. *Styles* two, filiform, ſtraight, length of the ſtamens. *Stigmas* ſimple.

PER. *Fruit* ovate, diviſible in two directions.

SEEDS oblong, columnar.

OBS. *In ſome ſpecies the ſeeds are depoſited from the cruſt of the pericarp, in others they remain included in it.*

ESSENTIAL CHARACTER.

Flowers in a head. *Recept.* chaffy.

SPECIES.

1. Eryngium fœtidum. *Stinking Eryngo.*
Lin. ſpec. 336. *ſyſt.* 270. *Reich.* 1. 647. *Gron. virg.* 30. *Brown. jam.* 185. *Herm. lugdb.* 236. *t.* 237. *Sloan. jam.* 1. 264. *t.* 156. *f.* 3, 4.
Root-leaves lanceolate ſerrate, floral leaves multifid, ſtem dichotomous.

2. Eryngium aquaticum. *Marſh Eryngo.*
Lin. ſpec. 336. *ſyſt.* 271. *Reich.* 3. 648. *hort. cliff.* 88. *Gron. virg.* 146. *Pluk. alm. t.* 175. *f.* 4. *Raii ſuppl.* 239. 5. *Mor. hiſt.* 3. 167. *ſ.* 7. *t.* 37. *f.* 21.
β. *Pluk. alm. t.* 369. *f.* 3.
Leaves gladiate ſerrate-ſpiny, floral leaves undivided.

3. Eryngium planum. *Flat-leaved Eryngo.*
Lin. ſpec. 336. *Reich.* 1. 648. *hort. cliff.* 87. *upſ.* 37. *Jacqu. auſtr.* 4. 48. *t.* 391. *Krock. ſileſ. n.* 395. *Camer. epit.* 449.
E. latifolium planum. *Bauh. pin.* 386. *Mor. t.* 35. *f.* 9.—capit. rotundo parvo. *Bauh. hiſt.* 3. 88. *f.* 1.
E. pannonicum latif. *Cluſ. hiſt.* 2. 158.—ſ. montanum. *Park. parad.* 330. 3. *Raii hiſt.* 385.
Root-leaves oval flat crenate, heads peduncled.

4 Eryngium puſillum. *Dwarf Eryngo.*
Lin. ſpec. 337. *Reich.* 1. 649. *hort. cliff.* 87.
E. planum minus. *Bauh. pin.* 386. *Park. theat.* 986. *f.* 3.
E. puſillum planum. *Cluſ. hiſt.* 2. 158. *Bauh. hiſt.* 3. 87. *f.* 2. *Raii hiſt.* 385. *Ger. emac.* 1165. 5.
Root-leaves oblong gaſhed, ſtem dichotomous, heads ſeſſile.

[5. Eryngium tricuſpidatum. *Trifid Eryngo.*
Lin. ſpec. 337. *Reich.* 1. 649. *amœn.* 2. 405. *Gron. orient.* 76. *Mor.* 166. *t.* 37. *f.* 13. *Bocc. ſic.* 80. *Raii hiſt.* 386. 8.
Root-leaves cordate, ſtem-leaves palmate with ears bent back; chaffs three-cuſped.]

6. Eryngium maritimum. *Sea Eryngo* or *Sea-holly.*
Lin. ſpec. 337. *Reich.* 1. 649. *hort. cliff.* 87. *fl. ſuec. n.* 233. *Hudſ. angl.* 109. *With.* 264. *Lightf.* 153. *Woodv. med. bot.* 281. *t.* 102. *Scop. carn. n.* 302. *Fl. dan.* 875. *Blackw.* 297. 1. *Mor. t.* 36. *f.* 6. *Bauh. pin.* 386.
E. marinum. *Cluſ. hiſt.* 2. 169. *Camer. epit.* 448. *Matth.* 680. *Dod.* 730. 1. *Lob. obſ.* 490. 1. *Ger.* 999. 1. *emac.* 1162. 1. *Park. theat.* 986. 1. *Petiv. brit.* 999. 1. *Bauh. hiſt.* 3. 86. 2. *Raii hiſt.* 384. *ſyn.* 222.
Root-leaves roundiſh plaited ſpiny, heads peduncled, chaffs three-cuſped.

7. Eryngium campeſtre. *Field Eryngo.*
Lin. ſpec. 337. *ſyſt.* 271. *Reich.* 1. 649. *hort. cliff.* 87. *mat. med.* 76. *Hudſ. angl.* 110. *With.* 264. *Sowerby engl. bot. t.* 57. *Hall. helv. n.* 735. *Scop. carn. n.* 301. *Pollich pal. n.* 263. *Jacqu. auſtr.* 2. *t.* 155. *Fl. dan. t.* 554. *Plenck, ic. t.* 173. *Blackw. t.* 297. 2. *Allion. pedem. n.* 1285. *Krock. ſileſ. n.* 394. *Villars dauph.* 2. 658. *Gærtn. fruct.* 77. *Dod.* 730. 2. *Fuchſ.* 296. *Matth.* 679. *Lob. obſ.* 490. 2. *Trag.* 871.
Eryngium. *Camer. epit.* 447.
E. vulgare. *Bauh. pin.* 386. *Bauh. hiſt.* 3. 85. *Raii hiſt.* 384. *ſyn.* 222. *Mor. t.* 36. *f.* 1.
E. campeſtre vulg. *Cluſ. hiſt.* 2. 157.
E. mediterraneum. *Ger.* 999. 2. *emac.* 1162. 2.
ſ. campeſtre. *Park. theat.* 986. 2.
Root-leaves ſtem-claſping pinnate-lanceolate.

8. Eryngium amethyſtinum. *Amethyſtine Eryngo.*
Lin. ſpec. 337. *ſyſt.* 271. *Reich.* 1. 650.
E. montanum amethyſt. *Bauh. pin.* 386. *Mor.* 165. *t.* 35. *f.* 2.
E. cæruleum. *Bauh. hiſt.* 3. 86. *f.* 1. *Raii hiſt.* 384. *Beſl. eyſt.* o. 11. *t.* 8. *f.* 4.
β. E. minus trifidum hiſpanicum. *Barrel. ic.* 36. *Bocc. muſ. t.* 71.
Root-leaves trifid ſubpinnate at the baſe.

9. Eryngium triquetrum.
Vahl ſymb. 2. 46.
Root-leaves trifid, ſtem very much branched, peduncles three-ſided, involucres three-leaved keeled.

10. Eryngium alpinum. *Alpine Eryngo.*
Lin. ſpec. 237. *Vahl ſymb.* 2. 46. *Hall. helv. n.* 736. *Scop. carn. n.* 300. *Villars dauph.* 2. 659. *Allion. pedem. n.* 1284. *Jacqu. ic.*
E. alpinum cæruleum capitulis dipſaci. *Bauh. pin.* 386. *Mor. t.* 35. *f.* 10.
E. aliud montanum. *Dalech. hiſt.* 1460.
E. cæruleum genevenſe, &c. *Lob. ic.* 2. 23. *adv.* 375.
E. alp. latis foliis magnis capite oblongo cæruleo. *Bauh. hiſt.* 3. 88. 2. *Raii hiſt.* 386.
Root-leaves heart-ſhaped, ſtem-leaves ternate gaſhed, involucres ſpiny-pinnate ciliate.

11. Eryngium Bourgati. *Cut-leaved Eryngo.*
Gouan illuſtr. 7. *t.* 3. *Vahl ſymb.* 2. 47.
E. alpinum. *Lin. mant.* 349. *ſyſt.* 271.
E. palleſcens. *Mill. dict. n.* 5.
E. ſpinalba. *Villars dauph.* 2. 660. *t.* 15.
Spina alba. *Dalech. hiſt.* 1462.
E. alpinum ſpinis horridum dipſaci capitulo longiore. *Tournef. inſt.* 327. *Raii ſuppl.* 240. *ext.* 368.
Root and ſtem-leaves alternate and three-parted, twice trifid; involucres awl-ſhaped, many-leaved ſomewhat ſpiny.

DESCRIPTION, *&c.*

[Theſe plants have ſomewhat the appearance of Thiſtles. The leaves are often ſpinous, as are alſo the involucres. The umbellets in ſome are incloſed in an involucre, which is often irregular and branched; in others they are diſperſed [a].

1. Root annual or biennial. Root-leaves bluntiſh, the ſerratures terminating in harmleſs ſpines. Stem a foot high or more, green, ſomewhat angular, dichotomous, ſpreading; with the extreme branches flexuoſe. The leaves on the branches oppoſite, ſtem-claſping, wedge-ſhaped, ſubconnate, with the edge toothed and ſemitrifid; the diviſions lanceolate, all the angles terminating in a purpliſh ſpine. The peduncle ſprings from the angles of the ſtem; it is ſtraight, ſhorter than the internode, triangular, ſtreaked on the ſides. The involucres are compoſed of ſix leaflets or thereabouts; they are horizontal and longer than the flower; the leaflets are lanceolate, nerved, and have a ſpine at the tip and at one or two of the ſerratures. Common receptacle cylindric, whence the flower is cylindric. Calyx of the florets five-toothed, the length of the corollet. Petals five, whitiſh, involute. Filaments double the length of the petals, white: anthers teſtaceous. Style two-parted, permanent. Seeds covered on all ſides with hemiſpheric dots. Chaffs linear, ſharp, the length of the florets. The whole plant is exceeding ſtinking [b]:—or rather, has a very penetrating, ſtrong, though not very unſavoury ſmell [c].]

The lower leaves are ſix or ſeven inches long, narrow at the baſe, and enlarging upwards to an inch in breadth near the top, where they are rounded off on one ſide like a ſcymitar, they are finely ſerrate, and of a light green colour. The flowers are produced in ſmall ſeſſile heads, coming out at every diviſion of the ſtalks, and at the ends of the branches; they are of a dull white colour, and make little appearance. They appear in june and july, and the ſeeds ripen in autumn. [According to the Kew catalogue, this plant flowers from auguſt to october.

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[a] Juſſieu. [b] Linn. ſyſt. [c] Sloane.

It is a native of the Weſt Indies, Mexico, Surinam and Virginia.—Cultivated here in 1714, by the Dutcheſs of Beaufort[d].

All parts of the plant are reckoned very powerful antihyſterics, and much uſed by the negroes and poorer whites, on all occaſions of that nature; whence they call it *Fittweed.* It is chiefly adminiſtered in decoctions or infuſions[e].]

2. This has a perennial root, from which ariſe ſeveral long leaves, diſpoſed round the root, like thoſe of the Aloe or Yucca; they are of a gray colour, a foot long or more, and one inch and a half broad, ſtiff, and ending in ſpines. The ſtem is ſtrong, two feet high, and divides at top into ſeveral peduncles, each terminated by an oval head blue. They come out in july, but unleſs the ſeaſon of flowers, which are white, with a little caſt of pale is very warm, the ſeeds will not ripen in England.

[It has the appearance and leaves of a ſmall Bromelia, but is ciliate with capillary flexible ſoft ſpines. The chaffs of the flowers are larger. The involucres and chaffs quite entire[f].]

It grows naturally in Virginia and Carolina, where it is called Rattleſnake Weed, from its uſe in curing the bite of that venomous reptile.

[Introduced before 1699, by the Rev. John Baniſter; and cultivated in the botanic garden at Oxford[g].

3. Root perennial. Stem upright, round, furrowed or ſtreaked, whitiſh, about a foot and half in height, blueiſh at top, where it divides into three parts, each of which is terminated by a peduncled axillary flower. Lower leaves cordate-ovate, obtuſe, on long petioles, with unequal, mucronate notches about the edge; ſtem-leaves ſeſſile; the uppermoſt lobed, gaſhed, ſmaller, ſerrate, the notches ſpinuloſe. Flowers in terminating heads, fenced with a ſix-leaved involucre, ſpreading and reflex, the leaflets long-lanceolate, mucronate, as long as the flowers. Germ ſlightly angular. Calyx permanent, green with the edges and middle line ſilvery. Seeds flat on one ſide, convex on the other, hiſpid crowned with the calyx[h].]

It makes a pretty appearance when in flower, which is in july; eſpecially that with blue ſtalks and flowers, for there is a variety in which they are white, with the leaves of a lighter green. As this plant does not ſpread at the root, it ſhould be allowed a place in the pleaſure-ground.

[Cultivated in 1596 by Gerarde[i].

Native of Auſtria, Sileſia, Poland, Ruſſia.]

4. This puts out oblong plane leaves from the root, which are cut on their edges; the ſtalks riſe about a foot high, and branch out into many forked diviſions, which are regular, and have a ſmall head of flowers in each, ſitting very cloſe between the branches: theſe having no great beauty it is ſeldom cultivated except in botanic gardens.

[It flowers from june to auguſt.—Native of Spain and the Levant.

Cluſius firſt obſerved it in the garden of John Mouton, of Tournay, a learned apothecary, very ſkilful in botany; and thence named it *E. puſillum planum Moutoni.*—Cultivated in 1759 by Mr. Miller[k].

5. Root biennial, tuberous, approaching to the ſhape of the Radiſh. Leaves, when they firſt come out, ſmooth, round, undivided, but jagged about the edge, hanging on very long petioles, ſlender as hairs. Stem a foot high, with ſpiny heads at the top and in the axils, ſomewhat like thoſe of Pſyllium or Fleawort Plantain, with purple florets in them. Involucres of long, narrow, hard, prickly leaflets, much longer than in the common ſort[l].

Native of Spain, Sicily, and the Levant. Introduced in 1786, by Monſ. Vare[m].]

6. Root creeping, and running deep into the ground. Leaves roundiſh, ſtiff, gray, ſet with ſharp ſpines on the edges. Stems a foot high, branched, ſmooth, having at each joint leaves of the ſame form with the lower ones, but ſmaller.

[The root-leaves and lower ſtem-leaves are on broad claſping petioles, deeply divided into three lobes, which are plaited; the upper leaves are ſeſſile and ſtem-claſping[n].]

The flowers come out at the ends of the branches in roundiſh prickly heads, and are of a whitiſh blue colour; under each head is a range of narrow, ſtiff, prickly leaves, ſpreading like the rays of a ſtar. The flowers appear in july.

[By old Engliſh writers it is called Sea Holly, Sea Holme, and Sea Hulver.] It grows in great plenty on the ſandy and gravelly ſhores, in many parts of Britain and other countries of Europe.

[The young flowering-ſhoots eaten like Aſparagus are very grateful and nouriſhing[o].

The leaves are ſweetiſh, with a ſlight aromatic warmth and pungency. The roots are ſuppoſed to have the ſame aphrodiſiac virtues as the Orchis tribe. They are kept in the ſhops candied[p]; and are ſtill regarded by the Arabs as an excellent reſtorative.

7. Root perennial and ſtrong. The whole plant very ſtiff and pale green. Root-leaves and lower ſtem-leaves on long broad petioles, which embrace the ſtem, variouſly divided, doubly and trebly pinnatifid; the upper leaves ſeſſile, embracing the ſtem, which is long and trailing, bearing numerous heads of flowers[q]. Corolla blue, ſometimes white or yellowiſh[r]. Appearing in july and auguſt.

Native of moſt parts of Europe. In Britain not very common. On the coaſt near the ferry from Plymouth into Cornwall, near Newcaſtle upon Tyne; below Melling in Yorkſhire. Alſo far inland, oppoſite Brookhall, near Daventry, in Northamptonſhire. Gerarde cultivated it in his garden.]

8. The lower leaves are divided like the fingers of a hand, into five or ſix ſegments, which are very much cut at their extremities into many parts, and have ſmall ſpines. Stem about two feet high, with ſmaller and more divided leaves. The upper part of the ſtem, and alſo the heads of flowers, are of the fineſt amethyſtine colour, ſo that they make a very fine appearance.

[Leaves linear, ſemitrifid, at bottom ſubpinnate. Involucres lanceolate, longer than the head, fenced at the baſe with ſubulate briſtles interpoſed[s].

Native of the mountains of Styria.—Cultivated in England in 1664[t].] It flowers in july, and when the autumn proves dry, the ſeeds will ripen here.

[Scopoli cannot diſcover any other difference between this and the foregoing, except that the leaves are more gaſhed in the one than the other; he therefore looks upon them as one ſpecies.

β. The variety is ſmaller, and the involucre has trifid folioles[u].

9. Stem erect, rigid, a ſpan or a foot in height, very much branched, round, ſmooth, amethyſtine, as are alſo the branches and flowers. Branches alternate, divaricate, ſubdichotomous, three-ſided. Root-leaves copious, an inch long, on flat petioles an inch and half in length, flexible, ſmooth; the lateral ſegments oblong, gaſhed at the tip, having ſpinuloſe teeth; the middle ſegment obovate, trifid; the lobes three-toothed, ſpinuloſe. Stem-leaves three-parted, half-ſtem-claſping: ſegments lanceolate, rigid, ſpiny, with a ſpiny tooth on each ſide at the baſe. Peduncles on the ſide and at the end of the branches, rigid, with a three-parted leaflet at the baſe of each. Head ſmall, few-flowered, ſometimes ſubſeſſile. Leaflets of the involucre longer

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[d] Hort. kew.
[e] Browne.
[f] Linn. ſpec. and ſyſt.
[g] Mor. hiſt.
[h] Krocker.
[i] Hort. kew.
[k] Ibid.

[l] Boccone.
[m] Hort. kew.
[n] Woodw. Mſs.
[o] Linn. ſuec.
[p] Withering.
[q] Woodw. Mſs.
[r] Wither.
[s] Linn. ſpec.
[t] Hort. kew. from Evelyn's kalendar.
[u] Linn. ſpec.

by half than the head, lanceolate, concave, rigid, entire, ending at top in a pungent ſpine, without any briſtles at the baſe of the involucre, as in E. amethyſtinum. Chaffs awl-ſhaped, rigid, pungent, the length of the florets.

Gathered in the dry plains of the kingdom of Tunis, by Vahl[x].

10. Root perennial. The leaves are cordate and toothed, the lower on long petioles, the upper ſtem-claſping. The lower leaves reſemble thoſe of *Cacalia*, but are more acute, and the teeth end in a ſoft ſpine. Amethyſtine leaves ſurround the oblong head of flowers; ſome of them briſtle-form and reflex, other pinnatifid and lanceolate. Corolla white. Anthers green[y].

It is a plant, ſays Villars, curious to ſee, on account of the beauty of the involucres, which are of a vinous azure blue, mixed with green and white, ſcarcely prickly; the heads of flowers are much elongated, cylindric in the lower, and ſuddenly rounded in the upper part. This ſort has been confounded with the next by the Bauhins, and Linneus; but it has the lower leaves entire as in E. planum, whereas in the enſuing ſpecies they are cut to the centre. The leaves of this are ſimple, ſerrate and ſmooth; thoſe on the ſtem trifid, and the upper or floral leaves, coloured, palmate and fringed.

Native of the mountains of Switzerland, Dauphiné and Italy.——Cultivated in 1752, by Mr. Miller[z].

11. Height from eight inches to a foot. Stems thick, white, ſtrong, and branched from the bottom. The lower leaves are at firſt entire, and afterwards winged, toothed or a little ſpiny, then palmate-laciniate, ſinuated, ſpiny or cut on the ſides; at the baſe of each branch is a ſmaller leaf. Peduncles ſtrong, ſolid, each ſupporting a ſingle conical head, leſs lengthened out than in the preceding ſort, but more rough like that of the Teaſel. Involucre frequently compoſed of a double row of ſeveral rough, prickly, ſilvery leaves, ſimple or divided into three parts, longer than the flowers.—This plant is lower, rougher, thicker and more branched than the preceding; the leaves continue ſome years, awaiting the growth of the root neceſſary to produce the ſtem: and when the fructification is completed the whole periſhes[a]. The chaffs are awl-ſhaped, rigid, and longer than the flower[b].

Gouan, who firſt clearly diſtinguiſhed it, ſays that it approaches very near to E. tricuſpidatum, but differs from it in having the leaves digitate and biternate, but not palmate; the chaffs quite entire, not three-cuſped.

Mr. Miller, who cultivated this ſpecies in 1731[c], ſays that] the ſtalks riſe about two feet high, that the flowers are of a light blue colour, in very large heads, that it flowers in june and july, and that the ſeeds ripen here in autumn.

[Native of the South of France.]

PROPAGATION AND CULTURE.

1. As this plant is a native of hot countries, it will not thrive in England, but in a warm ſtove. It is propagated by ſeeds, which muſt be ſown on a hot-bed; and when the plants are fit to remove, they ſhould be each planted in a ſmall pot, and plunged into the bark-bed, and afterwards treated like other tender plants from the ſame country; the ſecond year they will produce flowers and ſeeds, ſoon after which they commonly decay.

2. This ſort is propagated by ſeeds, which, if ſown in pots and plunged into a moderate hot-bed, will come up much ſooner than thoſe which are ſown in the full ground, whereby they will be much ſtronger before the winter. When the plants are fit to remove, they ſhould be each planted in a ſeparate ſmall pot, filled with light earth; and if they are plunged into a moderate hot-bed, it will forward their taking root; then they muſt be gradually inured to bear the open air, into which they may be removed toward the latter end of may, and placed among other hardy exotic plants. When the plants have filled theſe pots with their roots, ſome of them may be ſhaken out, and planted in a warm border; the others may be put into larger pots, and in the autumn placed under a common frame, where they may be expoſed to the free air in mild weather, but ſheltered from ſevere froſt: the following ſpring theſe may be turned out of the pots, and planted in a warm ſituation, where they will endure the cold of our ordinary winters very well; and if in ſevere froſt they are covered with Straw, Peas-haulm, or any ſuch light covering, it will ſecure them from injury.

3. This is propagated by ſeeds, which if ſown in the autumn, will more certainly ſucceed than when ſown in the ſpring, for the latter commonly remain in the ground a year before they vegetate; and if the ſeeds are ſown where the plants are to remain, they will flower ſtronger than thoſe which are tranſplanted; for as they have long downright roots, ſo theſe are commonly broken in taking out of the ground, which greatly weakens the plants. The culture they require is to thin them where they are too near, keep them clean from weeds, and dig the ground about them every ſpring before they ſhoot.

4. Having no great beauty, it is ſeldom cultivated in gardens.

6. This ſort will grow in a garden, if the roots are planted in a gravelly ſoil, and produce flowers annually; but the roots will not grow near ſo large or fleſhy as thoſe which grow on the ſea-ſhore, where they are overflowed with ſalt water. The beſt time to tranſplant the roots is in autumn, when the leaves decay; the young roots are much better to move than the old, becauſe being furniſhed with fibres, they will readily take root: when theſe are fixed in the ground, they ſhould remain unremoved; and if they are kept clean from weeds, it is all the culture they will require.

7. The ſeventh ſort is a very troubleſome weed, for the roots run deep into the ground, and are not eaſily deſtroyed by the plough; they ſpread and multiply greatly in the ground, to the prejudice of whatever is ſown or planted on the land, therefore this plant is not admitted into gardens.

The eighth, tenth, and eleventh ſorts are propagated by ſeeds in the ſame manner as the third, and require the ſame treatment.

[ERYNGIUM. See *Atractylis, Gundelia.*

ERYSIMI VARIETAS. See *Sinapis.*

ERYSIMO SIMILIS. See *Turritis.*]

ERYSIMUM, (*Of Pliny.* Ερυσιμον *of Theophraſtus and Dioſcorides. From* ερυω, *ſalvifico, Lin. or traho, from its drawing quality—others derive it* απο του ερεικειν, *becauſe the leaves are much cut—others from* εριτιμον, *precious.*)

Lin. gen. n. 814. *Reich.* 878. *Schreb.* 1090. *Gærtn. t.* 143. *Tourn.* 111. *Juſſ.* 239.

Claſſ. 14. 2. Tetradynamia Siliquoſa.

Nat. order of *Siliquoſæ.—Cruciferæ*, Juſſ. *Cruciatæ*, Hall.

GENERIC CHARACTER.

CAL. *Perianth* four-leaved: *leaflets* ovate-oblong, parallel-converging, coloured, deciduous.

COR. four-petalled, cruciform. *Petals* oblong, flat, extremely obtuſe at the tip: *claws* length of the calyx, upright.

Gland *nectariferous* double, within the ſhorter filament.

STAM. *Filaments* ſix, length of the calyx: of theſe the *two oppoſite* ſhorter. *Anthers* ſimple.

PIST. *Germ* linear, four-cornered, length of the ſtamens. *Style* very ſhort. *Stigma* headed, permanent, ſmall.

PER. *Silique* long, linear, ſtrict, exactly four-cornered, two-valved, two-celled.

SEEDS very many, ſmall, roundiſh.

ESSENTIAL CHARACTER.

Silique columnar with four equal ſides. *Cal.* cloſed.

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[x] Symb.

[y] Scopoli.

[z] Hort. kew.

[a] Villars.

[b] Vahl.

[c] Hort. kew.

SPECIES.

1. Eryſimum officinale. *Common Hedge-Muſtard.*
Lin. ſpec. 922. *Reich.* 3. 260. *hort. cliff.* 337. *fl. ſuec. n.* 598. *mat. med. n.* 824. *Hudſ. angl.* 286. *With.* 695. *Curtis lond.* v. 40. *Lightf. ſcot.* 354. *Relh. cant. n.* 477. *Hall. helv. n.* 478. *Pollich pal. n.* 631. *Neck. gallob.* 281. *Fl. dan. t.* 560. *Krock. ſileſ. n.* 1072. *Villars dauph.* 3. 310. *Blackw. t.* 28.
E. vulgare. *Bauh. pin.* 100. *Mor. hiſt.* 2. *ſ.* 3. *t.* 3. *f.* 1.—Tragi floſc. luteis, juxta muros proveniens. *Bauh. hiſt.* 2. 863.
E. Dioſcoridis Lobelio. *Ger.* 198. 1. *emac.* 254. 1.
Siſymbrium officinale. *Crantz. auſtr.* 54. *n.* 10. *Scop. carn. n.* 824. *Allion. pedem. n.* 1010.
Eruca ſiliqua cauli appreſſa Eryſimum dicta. *Raii hiſt.* 810. *ſyn.* 298. *Petiv. brit. t.* 46. *f.* 3.
Irio 1. *Tabern.* 448.—ſ. Eryſimum. *Dod. pempt.* 714. *Lob. ic.* 206. 1.—vulgare. *Park. theat.* 833.
Verbena mas. *Fuchſ. hiſt.* 592.
Siliques preſſed cloſe to the ſpike, leaves runcinate.

2. Eryſimum Barbarea. *Winter Hedge-Muſtard* or *Creſs.*
Lin. ſpec. 922. *Reich.* 3. 260. *fl. ſuec. n.* 599. *hort. cliff.* 338. *Hudſ. angl.* 286. *With.* 696. *Lightf.* 355. *Relh. cant. n.* 478. *Hall. helv. n.* 479. *Neck. gallob.* 281. *Pollich pal. n.* 632. *Allion. pedem. n.* 993. *Krock. ſileſ. n.* 1073. *Villars dauph.* 3. 311.
Siſymbrium Barbarea. *Crantz. auſtr.* 54. *n.* 11. *Scop. carn. n.* 826.
Eruca lutea latifolia ſ. Barbarea. *Bauh. pin.* 98. *Raii ſyn.* 297. *Mor. hiſt.* 2. *ſ.* 3. *t.* 5. *f.* 11, 12. *Petiv. brit. t.* 46. *f.* 1.
Barbarea. *Dod. pempt.* 712. *Ger.* 188. *emac.* 243. *Bauh. hiſt.* 2. 869. *Raii hiſt.* 809.—fl. ſimplici. *Park. theat.* 820.—femina. *Tabern.* 452.
Leaves lyrate, the outmoſt lobe roundiſh.

3. Eryſimum Alliaria. *Stinking* or *Garlick Hedge-M.*
Lin. ſpec. 922. *Reich.* 3. 260. *hort. cliff.* 328. *fl. ſuec. n.* 600. *mat. med.* 162. *Hudſ. angl.* 286. *With.* 696. *Curtis lond.* 2. 48. *Lightf.* 356. *Relh. cant. n.* 479. *Hall. helv. n.* 480. *Neck. gallob.* 281. *Pollich pal. n.* 633. *Allion. pedem. n.* 994. *Krock. ſileſ. n.* 1074. *Blackw. t.* 372. *Villars dauph.* 3. 311.
Alliaria. *Bauh. pin.* 110. *Fuchſ.* 104. *Camer. epit.* 589. *Dod.* 666. *Ger.* 650. *emac.* 794. *Park. theat.* 112. 5. *Bauh. hiſt.* 2. 883. *Raii hiſt.* 792. *Petiv. brit. t.* 45. *f.* 1.
Siſymbrium Alliaria. *Scop. carn. n.* 825.
Heſperis Allium redolens. *Mor.* 2. 252. *t.* 10. *f.* 6. *Raii ſyn.* 293.
Leaves cordate.

[4. Eryſimum repandum. *Small-flowered Hedge-Muſt.*
Lin. ſpec. 923. *Reich.* 3. 261. *amœn.* 3. 415. *Jacqu. auſtr.* 1. 16. *t.* 22. *Krock. ſileſ. n.* 1078. *Allion. pedem. n.* 995.
E. ramoſiſſimum. *Crantz. auſtr.* 29. *n.* 5.
Leaves lanceolate toothed, racemes oppoſite to the leaves, ſiliques racemed ſubſeſſile, corollas minute.]

5. Eryſimum cheiranthoides. *Treacle Hedge-Muſtard,* or *Wormſeed.*
Lin. ſpec. 923. *ſyſt.* 597. *Reich.* 3. 261. *fl. lapp.* 263. *ſuec. n.* 601. *hort. cliff.* 337. *Hudſ. angl.* 287. *With.* 697. *Relh. cant. n.* 480. *Retz. obſ.* 2. *n.* 64. *Gærtn. fruct.* 2. 297. *Hall. helv. n.* 477. *Scop. carn. n.* 831. *Neck. gallob.* 281. *Pollich pal. n.* 634. *Jacqu. auſtr.* 1. 16. *t.* 23. *Fl. dan. t.* 731. *Villars dauph.* 3. 312. *Allion. pedem. n.* 996. *Krock. ſileſ. n.* 1075.
E. tertium. *Tabern.* 449.
Myagrum ſiliqua longa. *Bauh. pin.* 109.
Myagro affinis planta ſiliquis longis. *Bauh. hiſt.* 2. 894. 1. *Raii hiſt.* 811. 2. *ſyn.* 298. *Petiv. brit. t.* 45. *f.* 2.
Camelina. *Ger. emac.* 273. 4.—Myagrum alterum thlaſpi effigie. *Lob. ic.* 1. 225. 1.—amarum. *Park. theat.* 868. 3.
Eruca ſylveſtris Thlaſpios effigie. *Mor. t.* 5. *f.* 7.
Leaves lanceolate quite entire, ſometimes toothed, ſiliques patulous.

[6. Eryſimum hieracifolium.
Lin. ſpec. 923. *Reich.* 3. 261. *fl. ſuec. n.* 602. *Jacqu. auſtr.* 1. *t.* 73. *Retz. obſ.* 2. *n.* 62. *Fl. dan. t.* 229. *Pollich pal. n.* 635? *Allion. pedem. n.* 997. *Villars dauph.* 3. 313.
E. pannonicum. *Crantz. auſtr.* 28.
Leucoium luteum ſylveſtre hieracifolium. *Bauh. pin.* 201. *prodr.* 102. *Raii hiſt.* 783. 4.—ſerrato fol. *Bauh. hiſt.* 2. 873.
L. ſylveſtre inodorum, fl. parvo pallidiore. *Raii hiſt.* 781.
Leaves lanceolate ſerrate.

7. Eryſimum perfoliatum.
Crantz. faſc. 1. 27. *Krock. ſileſ. n.* 1077.
E. campeſtre. *Scop. carn. n.* 827.
Braſſica turrita. *Weigel obſ.* 32.
B. orientalis. *Pollich pal. n.* 639.
B. campeſtris 1. *Cluſ. hiſt.* 2. 127.
B. orientalis perfoliata fl. albo, ſiliqua quadrangula. *Tournef. inſt.*
B. campeſtris perfol. fl. albo. *Bauh. pin.* 112.
Leaves cordate, ſtem-claſping, ſmooth.

8. Eyſimum bicorne. *Horned Hedge-Muſtard.*
Ait. hort. kew. 2. 394.
Leaves lanceolate hairy, ſiliques two-horned at the tip.

DESCRIPTIONS, *&c.*

1. Root annual. Stem from one to two feet high, upright, round, finely grooved, beſet with numerous ſhort, rough hairs, branched, and for the moſt part purpliſh, particularly at the angles of the branches, which ſpread very much. Leaves alternate, petioled, ſlightly downy on both ſides, ſcabrous underneath, particularly on the midrib and nerves, pinnatifid, the ſegments oppoſite, oblong, ſerrate-toothed, the end one largeſt and connected with the next to it. Racemes of flowers terminating, roundiſh; of fruits filiform, elongated, naked, pubeſcent. Leaflets of the calyx of a pale colour, linear-oval, bluntiſh, concave, pubeſcent. Petals of a dull yellow, wedge-ſhaped, veined. Anthers cordate, ſharp, bent ſomewhat upward. Style pubeſcent. Stigma round, flattiſh, emarginate, almoſt the height of the ſtamens. Silique cylindric, finely grooved, green or purple, pubeſcent, preſſed to the ſtalk; not opening ſpontaneouſly whilſt on the plant. Seeds dingy yellow, obliquely truncate at both ends, immerſed in the partition, and eight in each cell. Viewed as it comes into bloſſom, and when its flowering branches ſhoot out horizontally to a great length, it ſcarcely ſeems to be the ſame plant. It is common on dry banks, under walls, pales, and in waſte places: from may or june to ſeptember[a]. Beſides its name of *Hedge-Muſtard*, it has alſo thoſe of *Bank Creſſes* and *Scrambling Rocket*. Turner calls it *Winter Creſſes*.

In German it is named *der Hederich, Wegeſenf, wilder Senf, falſcher Waſſerſenf, das gelbe Eiſenkraut, das Weibchen des Eiſenkrauts, Kreuzkraut*. In Daniſh *Vild Senep, Veyſenep*. In Swediſh *Väggkraſſa*. In French *le Velar, la Tortelle, l'herbe au Chantre*. In Italian *Eriſamo*. In Spaniſh *Jaramago, hierba de San Alberto, Irion*. In Portugueze *Eriſimo*. In Ruſſian *Gorczyca polna* and *Pſzonak ziele*.

It is warm and acrid to the taſte, and when cultivated, is uſed as a ſpring potherb. Birds are fond of the ſeeds. Sheep and goats eat it. Cows, horſes and ſwine refuſe it.

Rondeletius cured a hoarſeneſs occaſioned by loud ſpeaking, with this herb, in a few days[b]. The juice of it is beyond any thing in diſeaſes of the throat[c].

This and ſome others of the claſs, are apt to come up among the aſhes, where charcoal has been made, or where there has been any conſiderable fire[d].

2. Root perennial. Stem a foot or eighteen inches high, ſmooth, round, deeply furrowed, much branched. Leaves ſmooth, dark green, having two or three pairs of roundiſh lobes, connected to a broad foliaceous rib; the extreme lobe much the largeſt, and either of an oval or blunt rhomboidal figure,

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[a] Curtis, Woodw. Mſs. Scop. [b] Linn ſuec. [c] Withering. [d] Switzer, Haller, Pollich.

ſlightly indented on the edges: but they vary much in form. Flowers in racemes or thick ſpikes at the ends of the ſtem and branches; peduncles compreſſed quadrangular. Calyx green, caducous; two of the leaflets larger, with a helmet-ſhaped hollow at the top. Petals yellow, much longer than the calyx. Nectary conſiſts of four glands, two between the longer ſtamens, and two ſupporting the ſhorter ones. Siliques upright, parallel to the ſpike-ſtalk, with four obſcure angles. Seeds roughiſh, finely dotted and reticulated, twenty in number, in each cell ten [e].

Banks of ditches and ſtreams, in watery places; ſometimes in cultivated fields and even on walls. It flowers from may to july. It is called *Winter Rocket* as well as *Winter Creſs*: and *herb S. Barbara*. In German it is named *die Winterkreſſe, Barbenkraut, Barbelkraut, Rapunzel, Senſkraut, Schnödeſens, Habichtſkraut, gelber Beyfuſs, falſche Bumon*. In Daniſh *Vinterkars*. In Swediſh *Vinterkraſſe*. In French *la Barbaree, l'herbe Sainte Barbe, l'herbe aux charpentiers, la Julienne jaune, Roquette*. In Italian *Barbarea, erba di Santa Barbara, Ruchetta*. In Spaniſh *Hierba de Santa Barbara, Ruqueta*. In Portugueze *Herva de S. Barbara*.

The common people in Sweden uſe the leaves in ſalads early in the ſpring, and late in the autumn: they alſo boil them as Cale. Some alſo in England cultivate it for ſpring ſalad, under the name of *French* or *American Creſs*; but it has to moſt people a bitter, unpleaſant taſte [f].

Varieties.

There are ſeveral varieties of Winter Creſs. One is made a diſtinct ſpecies by Miller, under the name of *Eryſimum vernum*. This is variety β. of Linneus's ſpecies plantarum and *Siſymbrium Erucæ folio glabro, minus & præcocius*, Tournef. inſt. 226.—It is diſtinguiſhed by Ray (hiſt. 809.) as having ſmaller leaves, more frequently ſinuated, the pods thicker, and the ſeeds larger, paler brown inclining to white.—Petiver has figured it (t. 46. f. 2.) under the name of *Early Winter Creſs*; and ſays that it flowers in april.

A variety with double flowers (Barbarea flore pleno, *Park.*) is common in the gardens, under the name of *Yellow Rocket* [g].

Villars inſiſts that Siſymbrium Barbarea of Linneus, Eryſimum orientale of Miller, n. 4. is nothing more than a variety of this.

3. Root biennial. Stem upright, from two to three feet high, round, ſmooth, ſomewhat ſtriated, at bottom purple and ſlightly hairy, at top branched. The branches are few, alternate and upright. Leaves alternate, petioled, veiny and ſomewhat wrinkled; the lower ones on longer petioles, bluntly notched or ſcoloped and rounded at the end; the upper ones ſharp, and even acuminate, unequally toothed: there are a few hairs at the baſe of the foot-ſtalk. Flowers in a corymb; terminating, upright, on peduncles the length of the flowers. Leaflets of the calyx pale green, obtuſe, deciduous, hollow at the tip. Corolla white, petals obovate, border ſpreading, marked with a few veins. Nectary of four glands, two between the longer ſtamens, and two ſupporting the ſhorter ſtamens. Silique two inches long, obſcurely quadrangular, with a fine prominent line between the angles. Seeds brown, ſhining, ſtriated, truncate at both ends, partly buried in the partition [h].

Common by hedge ſides, on banks and in ſhady places; flowering in april and may.—From its place of growth it has the vulgar name of *Jack by the hedge*. And having a ſtrong ſmell and taſte of Garlic, it is uſed by country people in ſauces, with bread and butter, ſalted meat, and with lettuce in ſalads: hence it has another vulgar name of *Sauce alone*. In German it is called *das Knoblauchkraut, der Knoblauchhederich, Lauchel, Waldknoblauch, Ramſer, Rampen, Ramſchelwurzel, Gernſel, Salſekraut, Saſkraut*. In Daniſh *Hvid lögſurt, Gaſlekaal*. In Swediſh *Hvitlökſört*. In French *L'Alliaire, l'herbe des aux, l'herbe aux aillets*. In Italian, Spaniſh and Portugueze *Alliaria*.

According to Linneus's obſervation, horſes, ſheep and ſwine refuſe it; but kine and goats eat it. If eaten by cows, it gives a ſtrong diſagreeable taſte to the milk. When it grows in poultry yards the fowls eat it, and it gives an intolerable rank taſte to their fleſh [i]. The ſeeds excite ſneezing [k].

The leaves are recommended internally, as ſudorifics and deobſtruents, of the nature of Garlic, but much milder; externally, as antiſeptics, in gangrenes and cancerous ulcers [l].

4. Stature of *Siſymbrium polyceratium*, but the racemes are oppoſite to the leaves, long, and axillary; the ſiliques are long, filiform and angular.—Stem upright, angular. Leaves lanceolate, ſharply toothed. Flowers ſmall, pale. Stigmas very ſlightly emarginate, not two-lobed [m].

Annual. Native of Spain, Bohemia, Sileſia, Auſtria, Italy. It flowers in may and june. Introduced in 1772, by Monſ. Richard [n].

5. This has very much the air or habit of *Cheiranthus Eryſimoides*, except that the flowers are ſmaller and the ſiliques patulous. The ſtigma in this is ſmall and hardly divided, in the next ſpecies it is formed as it were of two divaricated knobs [o].

Root annual. Stem from one to two cubits in height, upright, ſtiff, ſtreaked, rough, uſually ſimple, ſometimes branched a little; (others ſay, very much branched.) Leaves roughiſh, the midrib running down the ſtem, the uppermoſt ſometimes a little toothed. Corolla ſmall, yellow [p]. Silique an inch long, rhomb-quadrangular, obſcurely knobbed where the ſeeds lie: partition membranaceous, contrary to the valves, or certainly narrower than the ſilique: valves keeled on the outſide at an acute angle. Receptacle between the valves, filiform, ending in the very ſhort ſtyle with a blunt ſtigma. Seeds about eighteen in each cell, ovate, a little turgid, beaked, of a yellowiſh brown colour [q]. They are as intenſely bitter, as Wormſeed or Coloquintida [r].

In moſt parts of Europe. In England not common. In the oſier-holts near Ely, and on the bank of the river between the bridge and the city. In the corn fields about Elden, and among turneps near Bungay in Suffolk. Aſhburne in Derbyſhire.—It flowers from may to auguſt.

All cattle eat it. The country people give the ſeeds to deſtroy worms, with good effect; hence its name of *Treacle-Wormſeed*.

6. It differs from the foregoing ſpecies, not only in having ſerrate leaves, but longer ſiliques not ſtanding ſo wide from the ſtem, and larger flowers. It differs from *Cheiranthus eryſimoides*, in having flowers of only half the ſize, the top of the ſtyle or the ſtigma emarginate indeed, but not two-lobed, and the ſiliques by no means tomentoſe, although the piſtils or germs be hairy [s].

According to Villars it is much ſmaller than the preceding ſpecies, the ſtem not being more than eight inches high, ſimple or unbranched. The lower leaves are toothed, and reſemble thoſe of *Crepis virens*, being whitiſh or aſh-coloured: the ſtem-leaves become linear. The flowers terminate the plant, and the petals are of a pale yellow. The ſiliques are hard, a little villoſe, and approximate to the ſtem.

He adds that it is difficult to diſtinguiſh this plant from *Cheiranthus eryſimoides*; except by its cut leaves and the ſmallneſs of the flowers; and that he therefore conſiders them as varieties of the ſame ſpecies, though Linneus has inſerted them in different genera.

See Cheiranthus eryſimoides.

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[e] Withering, Lightfoot, Stokes in Withering, Woodw. Mſs. Lyons Mſs. in Relh. cant. Krocker.

[f] Linn. ſuec. Withering, Stokes in Withering, Lightfoot.

[g] Woodw. Mſs.

[h] Curtis. Woodw. Mſs. Lyons Mſs.

[i] Curtis, Withering.

[k] Ray.

[l] Lewis.

[m] Linn. and Krock.

[n] Hort. kew.

[o] Linn.

[p] Relhan.

[q] Gærtner.

[r] Gerarde and Ray.

[s] Linn. ſuec.

According to Retzius, the root is biennial. Stems upright, ſtiff, ſometimes branched, many-angled, ſmooth. Leaves alternate, ſmooth, very remotely toothed, by no means ſerrate. Flowers in racemes, yellow, ſmelling faintly. Calyx greeniſh yellow, brown at the end. Petals almoſt linear, truncate. A ſmall gland at the ſhorter ſtamens. Siliques upright, ſtiff, regularly quadrangular, ending in an emarginate ſtigma. The plant under the ſame name in Pollich is a different ſpecies.

Native of Sweden, Denmark, France, Germany, Auſtria, Italy.

7. Linneus has not this plant, and ſeems to have confounded it with *Braſſica campeſtris*, from which it differs, in having a more diffuſed habit, a white flower, a longer ſilique entirely quadrangular; whereas that has the ſilique cylindric, looſe, dry, wrinkled and veined, ending in a ſoft fiſtular horn. Annual.

Native of Germany and the Levant [t].

See Braſſica orientalis.

8. Annual. Flowers ſmall, yellow. Calyx yellowiſh, hairy on the outſide. Style permanent, capillary, the length of the horns. Stigma entire. Siliques approximating, preſſed cloſe, from ancipital four-cornered, hairy, three or four lines long, with two horns at the end.

Native of the Canary iſlands. Found by Mr. Francis Maſſon, and introduced in 1779.—It flowers in auguſt and ſeptember [u].]

PROPAGATION AND CULTURE.

In general theſe plants are only admitted into botanic gardens. The three firſt are common weeds, and will ſcatter their ſeeds wherever they are admitted ſo as ſoon to become troubleſome. Moſt of them periſh after they have ripened their ſeeds, but the fifth ſort will abide ſeveral years in a dry lean ſoil, or on a wall: in rich land it ſoon decays. They may be all propagated by ſowing their ſeeds in the autumn, where they are to remain; and they require no culture but to thin them, and keep them clean from weeds.

[The laſt ſpecies requires the protection of a green-houſe; all the others are hardy enough, and the ſecond, as has already been mentioned, is cultivated by ſome in the kitchen garden, as a warm ſpring ſalad herb, under the name of French or American Creſs. If permitted to ſcatter its ſeeds, it will come up of itſelf in ſufficient quantity.

Erysimum. See *Braſſica*, *Cheiranthus*, *Sinapis*, and *Siſymbrium*.

——— cereale. See *Polygonum Fagopyrum*.]

ERYTHRINA. (*From* ερυθρος, *red; the corolla being commonly ſcarlet.*)

Lin. gen. n. 855. *Reich.* 926. *Schreb.* 1163. *Juſſ.* 356. Corallodendron. *Tourn.* 446.—Coral. *Dill. elth.* 20.

Claſs. 17. 4. Diadelphia Decandria.

Nat. order of *Papilionaceæ* or *Leguminoſæ*.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, entire, tubular: *mouth* emarginate above: beneath furniſhed with a melliferous pore.

Cor. papilionaceous, five-petalled.

Standard lanceolate, with ſides bent back, aſcending, very long.

Wings ſomewhat ovate, ſcarce longer than the calyx, ſcarce projecting beyond the tube of the ſtandard, very ſmall.

Keel ſtraight, length of the wings, two-petalled, emarginate.

Stam. *Filaments* ten, conjoined at the lower part, but little bent in, the length of half the ſtandard, unequal. *Anthers* ten, ſagittate.

Pist. *Germ* pedicelled, ſubulate, attenuated into a ſubulate *Style* the length of the ſtamens. *Stigma* terminal, ſimple.

Per. *Legume* extremely long, protuberating at the ſeeds, terminated by a point, one-celled.

Seeds kidney-form.

Obs. *In* Er. herbacea *and* Criſta galli, *the tenth ſtamen is diſtinct.*

ESSENTIAL CHARACTER.

Cal. two-lobed. *Cor.* ſtandard very long, lanceolate.

SPECIES.

1. Erythrina herbacea. *Herbaceous Coral-tree.*
   Lin. ſpec. 992. *ſyſt.* 642. *Reich.* 3. 395. *mant.* 438. *hort. cliff.* 354. *Cateſb. car. t.* 49. *Trew. ehret. t.* 58. (Corallodendron). *Dill. elth.* 107. *t.* 90. *f.* 106. (Coral).
   Leaves ternate, ſtems entirely ſimple ſhrubby-annual.
2. Erythrina carnea. *Fleſh-coloured Coral-tree.*
   Ait. hort. kew. 3. 8.
   E. americana. *Mill. dict. n.* 5.
   Leaves ternate ſmooth, ſtem arboreous prickly, calyxes campanulate truncate.
3. Erythrina Corallodendron. *Smooth-leaved Coral-tr.*
   Lin. ſpec. 992. *ſyſt.* 642. *Reich.* 3. 395. *hort. cliff.* 354. *upſ.* 207. *fl. zeyl. n.* 275. *Brown. jam.* 288.
   E. Corallodendron, n. 2. & ſpinoſa. *Mill. dict. n.* 3.
   Coral arbor americana. *Comm. hort.* 1. 211. *t.* 108.
   Siliqua ſylveſtris ſpinoſa arbor indica. *Baub. pin.* 402.
   β. E. corallodendrum. *Lour. cochinch.* 427.
   E. orientalis. *Murr. in comm. gott.* 1777. 35. *t.* 1.
   Mouricou. *Rheed. mal.* 6. 13. *t.* 7.
   Gelala litorea. *Rumph. amb.* 2. 239. *t.* 76.
   Boa tſinkring. *Bont. jav. l.* 6. *c.* 44. *p.* 135. *fig.*
   Leaves ternate unarmed, ſtem arboreous prickly, calyxes truncate five-toothed.
4. Erythrina picta. *Prickly-leaved Coral-tree.*
   Lin. ſpec. 993. *Reich.* 3. 396.
   Gelala alba. *Rumph. amb.* 2. 234. *t.* 77. *Burm. ind.* 154.
   Leaves ternate prickly, ſtem arboreous prickly.

[5. Erythrina criſta-galli. *Cock's-comb Coral-tree.*
   Lin. ſyſt. 642. *Reich.* 3. 396. *mant.* 99.
   E. laurifolia. *Jacqu. obſ.* 3. 1. *t.* 51.
   Leaves ternate, petioles ſomewhat prickly glandular, ſtem arboreous unarmed.

6. Erythrina planiſiliqua.
   Lin. ſpec. 993. *Reich.* 3. 397. *Plum. ſpec.* 21, *ic.* 102. *f.* 1. (Corallodendron).
   Leaves ſimple oblong.
7. Erythrina fuſca.
   Lour. cochinch. 427.
   Gelala aquatica. *Rumph. amb.* 2. *t.* 78.
   Leaves ternate unarmed lanceolate, banner of the corolla convolute.

DESCRIPTIONS, &c.

Theſe are ſmall trees prickly or unarmed, or elſe ſhrubs ſometimes almoſt herbaceous; leaves as in *Dolichos*, ternate, ſtipulaceous, the petiolules jointed and awned or glandular, very ſeldom ſimple; flowers in faſcicles from the axils or in ſpikes at the ends of the ſtem and branches, often ſcarlet [a].]

1. This has a large woody root, from which freſh ſhoots come out every ſpring, growing to the height of about two feet. [They ſeldom throw out branches, and are ſometimes perennial. The petioles are uſually prickly underneath; there is commonly a prickle alſo under the common petiole on the ſtem, and ſometimes but ſeldom a prickle or two ſcattered about the ſtem [b].] Leaflets haſtate deep green. The upper part of the ſtalks are terminated by a long bunch or ſpike of ſcarlet flowers. [The bunches are erect; the pedicels in threes, each ſuſtaining one flower. Calyx undivided, without the melliferous gland at the baſe. Banner of the corolla deep red. Wings and keel very ſhort. The tenth ſtamen diſtinct [c].] Legumes five or ſix inches long, containing five or ſix ſcarlet ſeeds. This ſpecies flowers in ſeptember, but never produces ſeeds in England. It grows naturally in South Carolina, whence Mr. Cateſby ſent the ſeeds in the year 1724, and many plants were then raiſed, in ſeveral curious gardens. [It was alſo ſent afterwards to Juſſieu from the banks of the Miſſiſſipi [d].]

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[t] Krock. ſileſ.

[u] Hort. kew.

[a] Juſſieu.

[b] Linn.

[c] Ibid.

[d] Hort. cliff.

2. The ſeeds of this are not half ſo large as thoſe of the next ſort, and are of a bright ſcarlet colour; the leaves are alſo much ſmaller, and have long acute points; the branches are very cloſely armed with crooked greeniſh ſpines, as are alſo the ribs and foot-ſtalks of the leaves. The flowers grow in very long cloſe ſpikes, and are of a beautiful ſcarlet colour.

[Cultivated in 1759, by Mr. Miller[e],] who ſays that he received the ſeeds from La Vera Cruz, and afterwards from the Cape of Good Hope.

3. This has a thick woody ſtem, which riſes about ten or twelve feet high in this country, but where it is a native it grows to twice that height, ſending out many ſtrong irregular branches, which are covered with a brown bark. Leaves on long foot-ſtalks; the middle leaflet much larger than the other two; they are all heart-ſhaped, ſmooth, and of a deep green colour. The flowers come out at the ends of the branches, in ſhort thick cloſe ſpikes; they are of a deep ſcarlet colour, and make a fine appearance; they are commonly in beauty in may and june, but are not ſucceeded by pods here: in America they have thick ſwelling crooked pods, containing large ſeeds of a reddiſh purple colour. The leaves fall off in ſpring, and in autumn new leaves put forth, which continue green all the winter. The flowers do not appear till the leaves drop.

[Dr. Browne thinks it is not a native of Jamaica, but that it was introduced by the Spaniards, who planted it among their Cacao trees, where the walks were moſt expoſed to the weather, in order to break the force of the winds, whence it acquired the appellation of *Mader di Cocco*, among them.—In Jamaica it is called the *Coral* or *Red Bean-tree*. Cultivated in 1714, by the Dutcheſs of Beaufort[f].

There is ſome difference between the weſtern and eaſtern plant; the prickles in the latter are blackiſh: but the difference ſeems ſcarcely ſufficient to make them diſtinct ſpecies. The leaves ſleep about noon by *conniving* or clapping together[g].

This is a native of the Society iſles, and of the ſouthern part of China and Cochinchina.]

4. This has ſhrubby branched ſtalks, ſeldom above eight or nine feet high, armed in every part with ſtrong crooked black ſpines. The leaves are ſmaller than thoſe of the preceding, and have a nearer reſemblance to the firſt; the foot-ſtalks are armed with the ſame ſort of ſpines, and the midrib has alſo ſome which are ſmaller and not ſo black: the flowers are of a paler ſcarlet, and grow in looſer ſpikes. The ſeeds are as large as thoſe of the third ſort, but of a dark purple colour.

[Linneus deſcribes his plant, when only a year old, as very like *E. Corallodendron*, from which however it differed in the leaflets having a white rachis and ribs with very ſmall prickles on both ſurfaces, whereas the leaflets of that are green and unarmed. That has two glands at the baſe of the terminating leaflet; this has none; but the ſtem and petioles are prickly in both.]

This tree is generally planted in the Eaſt Indies for a ſupport to the Pepper plants. [Cultivated in 1768, by Mr. Miller.

5. This is a very lofty tree without any prickles on the trunk. The branches are ſtiff. The leaflets ovate-oblong and quite entire. The petioles elongated, having frequently one or two recurved prickles underneath; on this petiole at the baſe of the pedicels on each ſide is a gland, and there are alſo two glands on the middle of the intermediate pedicel. Flowers two or three, axillary, purple, on ſeparate peduncles, reſupinate. Calyx bell-ſhaped, two-lipped, the lower lip dagger-pointed. Banner ovate-cordate, reflex, emarginate: wings ſhorter than the calyx: keel ſubfalcate, ſharp, compreſſed, almoſt the length of the banner. Stamens diadelphous, the nine lower ones almoſt wholly united, the length of the keel: anthers oblong. Germ oblong, villoſe: ſtyle ſubulate: ſtigma with a minute dot[h].—Native of Braſil. Introduced in 1771, by Francis Bearſly, Eſq.[i].

6. Native of South America.

7. Stem arboreous, eight feet high, with a brown bark like that of Hemp, and many ſhort ſcattered prickles. The branches are diffuſed. Leaves ſcattered, petioled: leaflets quite entire, ſmooth. Flowers of a brown-red colour, in a terminating raceme. Calyx ſub-bilabiate, the lips entire and erect, having a melliferous pore above the baſe. Standard of the corolla very long, blunt, ſubturbinate, rolled into a tube, bent back at the baſe. Legumes columnar, jointed, hairy. Seeds oblong.

Native of Cochinchina, on the banks of rivers[k].

Mr. Bruce affirms, that the ſeeds of one ſpecies of Erythrina are called *Carats*, and are uſed in weighing gold and precious ſtones[l].]

Mr. Miller mentions ſeveral other ſorts or varieties of this fine genus. As one which he names *Erythrina inermis*, n. 6. The pods of which are longer, and not more than half ſo thick as thoſe of the third ſort; the ſeeds of a bright ſcarlet, longer and more ſlender than thoſe of the others; the leaves ſmall and acute-pointed; the ſtalks ſmooth and without ſpines. It does not grow very large, but ſhoots out into branches at a little diſtance from the ground, and theſe grow erect, ſo as to form a buſhy ſhrub. The flowers come out at the ends of the branches in ſhort ſpikes. The wings of the corolla are longer than in the other ſorts, and the whole flower is more cloſed. It is a native of the iſlands in the Weſt Indies.

A ſecond which he raiſed from ſmall ſeeds of a bright ſcarlet colour, that were ſent him from the Cape of Good Hope. The plants had no ſpines, the leaves were much larger than the other ſorts, their ſtems were ſtrong, and they had the appearance of growing to large trees.

He raiſed a variety of the ſecond ſort, with paler flowers and ſeeds, and the plants leſs thorny.

Alſo a variety of the third ſort, which he received from the iſland of Barbuda, with the flowers and pods very ſhort, the ſtamens much longer than the petals, the pods very ſhort and crooked, but rather thicker than thoſe of the third ſort, the leaves, ſtems and branches armed with ſpines.

PROPAGATION AND CULTURE.

Theſe plants are beſt propagated by ſeeds procured from rhe countries where they grow naturally, for they do not produce any here. Sow them in ſmall pots, and plunge them into a moderate hot-bed; where, if the ſeeds be good, the plants will come up in a month or five weeks. When they are two inches high ſhake them carefully out of the pots, and plant each in a ſeparate ſmall pot, filled with light earth, and plunged into a moderate hot-bed of tanners bark, ſhading them from the ſun till they have taken new root, admitting a large ſhare of air to them when the weather is warm, to prevent their being drawn up weak, and giving them more air as the plants increaſe in ſtrength: water them frequently but moderately; for too much moiſture will rot the fibres of their roots. In the autumn remove the plants into the ſtove; and for the two or three firſt winters they will require more heat than when they have acquired greater ſtrength. Water them two or three times a week whilſt the leaves are in vigour; but when theſe are fallen, moiſture is very hurtful to them.

They may alſo be increaſed by cuttings, planted in pots during the ſummer months, and plunged into a hot-bed; but ſeedlings plants are beſt.

The firſt ſort may be kept through the winter in a warm green-houſe, but in this ſituation it rarely flowers.

The ſecond is frequently planted in the gardens near Liſbon, where it annually flowers, and the ſeeds ripen: but in England this and the other ſorts ſeldom flower, with any treatment we can give them.

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[e] Hort. kew.

[f] Ibid.

[g] Linn.

[h] Linn. mant.

[i] Hort. kew.

[k] Loureiro.

[l] Travels, vol. 5. art. Kuara.

[**Erythrina.** See *Piſcidia.*

Erythrobulbus. See *Wachendorfia.*]

ERYTHRONIUM. (Ερυθρονιον *of Dioſcorides; from* ερυθρος, *red.*)

Lin. gen. n. 414. *Reich.* 447. *Schreb. n.* 562. *Juſſ.* 48. Dens canis. *Tourn.* 202.

Claſſ. 6. 1. Hexandria Monogynia.

Nat. order of *Sarmentaceæ.—Lilia*, Juſſ.

GENERIC CHARACTER.

Cal. none.

Cor. *Petals* ſix, oblong-lanceolate, acuminate, alternately incumbent towards the baſe, gradually more ſpreading, from the middle bent backwards.

Nectaries: Tubercles two, obtuſe, callous, growing to each alternate and interior petal near the baſe.

Stam. *Filaments* ſix, ſubulate, very ſhort. *Anthers* oblong.

Pist. *Germ* turbinate. *Style* ſimple, ſhorter than the corolla, ſtraight. *Stigma* triple, ſpreading, obtuſe.

Per. *Capſule* ſomewhat globoſe, narrower at the baſe, three-celled, three-valved.

Seeds very many, ovate, acuminate.

ESSENTIAL CHARACTER.

Cor. ſix-petalled, bell-ſhaped. *Nect.* Tubercles two, faſtened to the baſe of the alternate petals.

SPECIES.

1. Erythronium Dens canis. *Dog-tooth Violet.*

Lin. ſpec. 437. *Reich.* 2. 49. *hort. cliff.* 119. *Hall. helv. n.* 1234. *Scop. carn. n.* 406. *Allion. pedem. n.* 1890. *Gmel. ſib.* 1. 39. *t.* 7. *Jacqu. auſtr.* 5. 31. *app. t.* 9. *Villars dauph.* 2. 274. *Gouan illuſtr.* 25. *Curtis magaz.* 5.

Dens canis. *Cluſ. hiſt.* 266.

Dens caninus. *Dod. pempt.* 203. *Ger.* 154. *emac.* 204. 1.—latiore rotundioreque folio. *Bauh. pin.* 87. *Raii hiſt.* 1178.—fl. albo, purpuraſcente, & rubro. *Park. parad.* 193. *t.* 191. *f.* 7, 8.

Satyrium quorundam Erythronium bifolium, fl. unico radiato albo & purpureo. *Bauh. hiſt.* 2. 680.

β. E. longifolium. *Mill. dict. n.* 2.

Dens canis anguſtiore longiore folio. *Bauh. pin.* 87. *Raii hiſt.* 1178.—fl. albo, anguſtioribus foliis. *Ger.* 154. *f.* 2. *emac.* 204. *f.* 2.

Satyrii Erythronii aliud genus. *Bauh. hiſt.* 2. 680. *f.* 3.

γ. E. fol. ovato-oblongis glabris nigro-maculatis. *Gron. virg.* 151.

Dens caninus fl. luteo J. Rea. *Raii hiſt.* 1178. 3.

DESCRIPTION, *&c.*

Mr. Miller makes two diſtinct ſpecies. The firſt with two ovate leaves joined at their baſe, three inches long and one inch and a half broad in the middle, gradually leſſening towards the ends; theſe at firſt embrace each other, incloſing the flower, but afterwards they ſpread flat upon the ground; they are ſpotted with purple and white all over their ſurface. Between them riſes a ſingle, ſmooth, purple, naked ſtalk, about four inches high, ſuſtaining one flower, which hangs down; the petals are reflex and ſpread open to their baſe; their colour is commonly purple, but ſometimes white. Stamens purple, ſtanding cloſe about the ſtyle, which is longer than them. The roots are white, oblong and fleſhy, ſhaped like a tooth; whence this plant has the name of Dog's-tooth in Engliſh. [The ſame idea has governed the name in all the European languages. In German it is *Hundſzahn*. In Swediſh and Daniſh *Hundetand*. In French *Le dent de chien*. In Italian *Dente di cane*. In Spaniſh *Diente de perro*. In Portugueze *Dente de cão*. In Ruſſian *Kandik.*]

β. The ſecond differs in the ſhape of its leaves, which are longer and narrower; and the flowers are a little larger but not ſo well coloured.

[γ. The leaves are of a darker green, and the flower is of a pale yellow colour[a].

Theſe grow naturally in the South of France, Italy, Savoy, Switzerland, Auſtria, Friuli, Siberia. The laſt in Virginia.—Ray obſerved the firſt with a purple flower near Turin in the way to Aſti, in april; and with a white flower between Novi and Genoa. Cluſius found this variety near Gratz in Stiria; and John Bauhin at la Bâtie near Geneva, flowering in march; where I alſo gathered it on the 15th of march 1779.

Cultivated by Gerarde in 1596.]

PROPAGATION AND CULTURE.

This is increaſed by offſets from the roots, which they do not ſend out very plentifully. It is not therefore ſo common in gardens as moſt other flowers of the ſpring ſeaſon. It loves a ſhady ſituation and a light loamy ſoil. It may be tranſplanted any time after the beginning of june, when the leaves will be quite decayed, till the middle of ſeptember; but the roots ſhould not be too often removed, nor ſhould they be kept very long out of the ground, for if they ſhrink they will frequently rot. They ſhould not be planted ſcattering in the borders of the flower-garden, but in patches; and thus diſpoſed, they will make a good appearance.

[**ERYTHROXYLON.** (Ερυθρον ξυλον, *red-wood.*)

Lin. gen. n. 575. *Reich.* 625. *Schreb. n.* 783. *Brown. p.* 278. *Jacqu. amer.* 134. *Juſſ.* 253.

Claſſ. 10. 3. Decandria Trigynia.

Nat. order of *Malpighiæ*, Juſſieu.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, five-cleft, turbinate: *diviſions* ovate, ſharp; very ſmall, withering.

Cor. *Petals* five, ovate, concave, expanding.

Nectary of five ſcales, emarginate, upright, coloured, inſerted into the baſe of the petals.

Stam. *Filaments* ten, length of the corolla, at the baſe connected by a truncated membrane. *Anthers* heart-ſhaped.

Pist. *Germ* ovate. *Styles* three, filiform, diſtant, length of the ſtamens. *Stigmas* obtuſe, thickiſh.

Per. *Drupe* ovate, one-celled.

Seed. *Nut* oblong, obtuſely quadrangular.

ESSENTIAL CHARACTER.

Cal. turbinate. *Cor.* having a ſmall emarginate nectareous ſcale at the baſe of the petals. *Stam.* connected at the baſe. *Drupe* one-celled.

SPECIES.

1. Erythroxylon areolatum.

Lin. ſpec. 612. *ſyſt.* 427. *Reich.* 2. 374. *amœn.* 5. 397. *Brown. jam.* 278. *t.* 38. *f.* 2. *Swartz obſ.* 184. *Vahl ſymb.* 3. 59.

E. Carthagenenſe. *Jacqu. amer.* 134. *t.* 87. *f.* 1. *pict.* 67. *t.* 129.

Leaves obovate mucronate, branchlets ſhort floriferous ſcaly.

2. Erythroxylon havanenſe.

Lin. ſyſt. 427. *Reich.* 2. 374. *Jacqu. amer.* 135. *t.* 87. *f.* 2. *pict.* 67. *t.* 130.

Leaves elliptic, flowers axillary.

3. Erythroxylon hypericifolium.

Vahl ſymb. 3. 60. *Cavan. diſſ.* 8. *t.* 230.

Leaves obovate emarginate, branches floriferous, peduncles axillary ſolitary.

4. Erythroxylon ſquamatum.

Swartz prodr. 75. *Vahl ſymb.* 3. 60. *t.* 63.

Leaves elliptic-lanceolate acuminate obtuſe, branchlets ſcaly floriferous.

5. Erythroxylon macrophyllum.

Vahl ſymb. 3. 60. *Cavan. diſſ.* 8. *t.* 127.

Leaves elliptic acute, flowers axillary and lateral aggregate.

DESCRIPTIONS, &c.

1. Stem ſhrubby, even, with long ſpreading and ſomewhat rugged branches. Leaves petioled, alternate, obovate, narrower at the baſe, entire, veined, ſubglaucous underneath, deciduous. Flowers in alternate bundles, on ſhort peduncles, ſmall and white. Petals with claws, inſerted into the edge of the ſegments of the calyx, oblong, convex, entire. Nectareous ſcales in the throat of the corolla, ſurrounding the ſtamens, waved about the edge. Filaments during the time of flowering connate above the middle, afterwards cut more deeply, awl-ſhaped and white. Anthers ovate, minute, yellow. Germ roundiſh. Styles awl-ſhaped, ſpreading very much.

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[a] Ray.

Stigmas capitate-peltate. Fruit an oblong drupe, reſembling that of the Barberry, acuminate, ſcarlet, including an oblong attenuated hard nucleus or nut[a].

According to Jacquin, it is a tree twelve feet in height, with numerous branches, frequently coming out from the very bottom of the trunk, with the bark of a dark brown colour, and the wood ſolid and pale brown, but never reddiſh, as Browne repreſents it to be. Flowers very ſweet, having the odour of the Jonquil but milder. The fruit does not ſeem to be eaten by any animal.

Browne ſays it is a ſmall but beautiful tree: the leaves of an oval form, and marked with two ſlender longitudinal lines upon the back, which were the utmoſt limits of that part of the leaf which was expoſed, while it lay in a folded ſtate. The flowers grow in little cluſters, and are very thick upon the branches. The inward bark is of a fleſh colour, and the wood of a reddiſh brown. It is reckoned an excellent timber-wood, for the ſize of the tree, which ſeldom exceeds ſixteen or eighteen feet in height, and five or ſix inches in diameter. Natives of the Weſt Indies in dry coppices.

Dr. Browne has another ſpecies, which he calls, *ſmall round-leafed Erythroxylon or Redwood, with very ſlender branches.* This tree, he ſays, differs much from the foregoing both in ſhape and manner of growth. It grows in the low lands of Jamaica, like the other, and riſes commonly to the height of eighteen or twenty feet. Its leaves are roundiſh and ſmall; and the branches very ſlender. *Browne n.* 2. *p.* 278.

2. This is a ſhrub, three feet in height, having altogether the habit of the preceding, but the leaves ovate, obtuſe, quite entire, without any lines underneath. Fruit orange-coloured. It can hardly be a variety of the *areolatum.*

Native of the Havanna on rocks near the coaſt[b].

3. The branches are covered with a browniſh, wrinkled dotted bark, compreſſed at top, and toothletted from the fallen leaves. Scales on the branchlets awl-ſhaped and deciduous. Leaves petioled, glaucous underneath. Peduncles capillary, nearly the ſame length with the leaves.

4. Branches ſmooth, covered with an aſh-coloured bark, round below, but compreſſed at top, among the leaves at top having ovate, half-embracing, ſhort, acute, keeled ſcales, with a longitudinal groove on the back, at the baſe of which is inſerted an awn the length of the ſcale. Branchlets axillary, alternate, compreſſed, the lower ones leafy, the upper leafleſs, toothed with ovate, imbricate, copious ſcales, ſpreading a little at the tip. The ends of the branches are of the ſame ſtructure. Leaves on very ſhort petioles, alternate, two inches and more in length, ſometimes narrower towards the lower part, ending in a blunt point, acute at the baſe, very ſmooth, very finely veined, without any longitudinal nerves, paler underneath, quite entire. Peduncles on the branchlets, from the axils of the ſcales, ſolitary or in pairs, alternate, hardly an inch in length, angular, a little thicker towards the top, ſpreading. Segments of the calyx ovate, acute.

Native of the Weſt Indies: obſerved in Cayenne by Rohr.

5. Branches round at bottom, compreſſed at top, ſmooth, covered with a gray bark, at bottom, among the leaves having approximating ſcales, of an ovate-lanceolate form, half-embracing, keeled, ſtriated, purpliſh, acute; near the baſe on the outſide is a brown awl-ſhaped awn, the length of the ſcale, concealed within the dorſal groove of the ſcales. There are two other bracte-ſhaped ſcales, one on each ſide, a little above the petiole: they are lanceolate, attenuated, and the ſame length with the flower. Leaves petioled, alternate, a ſpan in length, ſharp at both ends, ſmooth, glaucous and veined with purple underneath, quite entire. Petioles very ſhort, browniſh. Peduncles from the axils of the ſcales and leaves, ſeveral, one-flowered, with ſeveral linear-lanceolate keeled ſcales interpoſed, a little ſhorter than the peduncles, the inmoſt narrower and ſhorter. The flowers, before they are unfolded, ovate, mucronate, with five prominent angles. Calyx coloured, with ovate acuminate ſegments. Petals linear, obtuſe.

Obſerved in Cayenne by Rohr[c].

ESCALLONIA. (*So named by the younger Linnæus, in honour of Monſ. Eſcallon, pupil and companion of Mutis, who found this and many other rare plants, in their journey through New Granada, which they ſent to Linnæus.*)

Lin. ſuppl. 21. *gen. Schreb. n.* 386. *Juſſ.* 321. *Smith ic. ined.* 2. *t.* 30, 31.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Calycanthemæ.*—*Onagræ*, Juſſ.

GENERIC CHARACTER.

Cal. one-leafed, five-cleft, ſuperior, permanent: *diviſions* ſpreading, keeled, ſharp.

Cor. *Petals* five, tongue-ſhaped, diſtant, longer than the calyx.

Stam. *Filaments* five, ſmooth, oppoſite to the diviſions of the calyx, alternate with the petals, and ſhorter than them. *Anthers* incumbent, faſtened by the back to the filaments, emarginate, two-celled.

Pist. *Germ* half-inferior, an oblate ſpheroid. *Style* upright. *Stigma* capitate.

Per. *Berry* roundiſh, ſurrounded with the calyx, terminated by the permanent ſtyle, two-celled.

Seeds numerous, ſmall, neſtling.

ESSENTIAL CHARACTER.

Cal. ſurrounding the fruit. *Stigma* capitate. *Berry* two-celled, containing many ſeeds.

SPECIES.

1. Eſcallonia myrtilloides.
Lin. ſyſt. 242. *ſuppl.* 156. *Smith ic. ined.* 2. 30.
Leaves ſerrulate ending in a ſmall dagger-point veiny underneath.

2. Eſcallonia ſerrata.
Smith ic. ined. 2. 31.
Leaves ſerrate ſubretuſe veinleſs underneath.

DESCRIPTIONS, *&c.*

1. This is a branching, leafy ſhrub. Branches wandlike, obſcurely angular, covered with a ſmooth, chinky, deciduous bark. Branchlets alternate, ſpreading, angular, cloſely leaved, one-flowered. Leaves alternate, ſpreading, obovate, obtuſe with a little dagger-point, minutely ſerrulate eſpecially towards the tip, of an even ſurface on both ſides, almoſt veinleſs above, underneath paler and veined, attenuated at the baſe into a ſhort, channelled, decurrent petiole, more or leſs glandular-ciliate at the edge. Flowers terminating, ſolitary, peduncled, upright. No proper bractes, but ſmall leaves like the others, only more plainly ſerrate, approaching the flower. Peduncles ſtraightiſh, angular, glandulous. Diviſions of the calyx from erect ſpreading, acuminate, bowed back at the tip, ſomewhat pubeſcent about the edge. Petals upright, bowed back at the tip, obtuſe, ſcarcely twice the length of the calyx. Style obſcurely angular, the length of the ſtamens. Stigma umbilicate. Berry the ſize of a pea, covered with a lid, which does not ſeem to fall off ſpontaneouſly.—Eſcallon firſt found it in New Granada[d].

2. This is a low ſhrub, very much branched, leafy, ſmooth, and having the appearance of *Vaccinium.* Branches alternate, angular, ſomewhat flexuoſe, with a ſmooth, pale bark. Branchlets alternate, ſtraightiſh, leafy, one-flowered, green. Leaves only on the laſt ſhoots, deciduous, alternate, petioled, obovate, obtuſe, often retuſe, with a point, both ſurfaces even, obſcurely veined above, underneath pale, entirely without veins, having only a nerve running along the middle; attenuated at the baſe into a ſhort, channelled, keeled petiole, quite entire at the edge. No ſtipules or bractes. Flowers terminating, ſolitary, peduncled, upright, very handſome, milk white, with a violet-coloured germ. Peduncles ſhort, round, thickening at the tip, bent in, ſmooth. Diviſions of the calyx ſpreading, deltoid,

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[a] Swartz.

[b] Jacquin.

[c] Vahl.

[d] Smith.

ſomewhat fleſhy, ſmooth, pale underneath, coloured above. Petals ſpreading, obtuſe, three times the length of the calyx. Filaments broader at the baſe. Style columnar, ſhort. Berry ſmall, continuing through the winter, covered with a lid which is cut round horizontally near the calyx and at length falls off. All the parts of the fructification except the petals are only one-third of the ſize of thoſe in the foregoing ſpecies.

Commerſon found it in the ſtraits of Magellan; and Archib. Menzies in Terra del Fuego[a].]

ESCHALOT or Eſchalotte, [from Aſcalon, about which place it grows wild, this plant was called *Cepa Aſcalonica* and *Aſcalonitides*. The old Engliſh name was *Barren Onyons*, becauſe it ſeldom puts up any flowering ſtem.] See *Allium*.

ESCHYNOMENE. See *Mimoſa*.

ESCULUS. See *Quercus*.

ESPALIERS, are either rows of trees planted about a whole garden or plantation, or in hedges ſo as to incloſe quarters or ſeparate parts of a garden; they are trained up flat in a cloſe hedge, for the defence of tender plants againſt the violence and injury of wind and weather.

The moſt commonly received notion of Eſpaliers are hedges of fruit-trees, which are trained up regularly to a lattice of wood work, formed either of Aſh-poles, or ſquare long timbers cut out of Fir, &c. and it is of this ſort of Eſpalier that I ſhall treat in this place.

Eſpaliers of fruit-trees are commonly planted to ſurround the quarters of a kitchen-garden, for which purpoſe they are of admirable uſe and beauty; for by laying out the walks of this garden regularly, which are bounded on each ſide by theſe hedges, when they are handſomely managed, they have a wonderful effect in ſheltering the kitchen-plants in the quarters, and alſo ſcreening them from the ſight of perſons in the walks; ſo that a kitchen-garden well laid out in this manner, and properly managed, will be equal to the fineſt regular parterre for beauty.

The trees chiefly planted for Eſpaliers are Apples, Pears, and ſome Plums; but the two former are moſtly uſed: ſome plant Eſpaliers of Apples grafted upon Paradiſe-ſtocks; but theſe being of humble growth, and a ſhort duration, are not ſo proper for this purpoſe, unleſs for very ſmall gardens; therefore I ſhould rather adviſe the having them upon Crab-ſtocks, or if in ſmaller gardens, where the trees cannot be allowed to grow ſo high, upon what the gardeners call the Dutch-ſtock; which will cauſe them to bear ſooner, and prevent their growing too luxuriantly, and theſe will continue many years in vigour.

In chuſing the trees for an Eſpalier, endeavour as near as poſſible, to plant the ſeveral ſorts which are nearly of the ſame growth in one line, that the Eſpalier may be the more regular, and of an equal height, which greatly adds to their beauty; for if you plant trees which ſhoot very unequally in the ſame line, it will be impoſſible to make the Eſpalier regular: beſides, the diſtance of the trees muſt be in proportion to their growth; for ſome trees, viz. thoſe of a larger growth, ſhould be planted thirty or thirty-five feet aſunder; whereas thoſe of ſmaller growth, need not be above twenty-five feet diſtance from each other.

The width of the walks and borders between theſe Eſpaliers ſhould (in a large garden) be fourteen or ſixteen feet at leaſt; and if the trees are deſigned to be carried up pretty high, the diſtance ſhould be greater, that each ſide may receive the advantage of the ſun and air, which is abſolutely neceſſary, if you would have the fruit well taſted. And if your ground is ſo ſituated, that you are at full liberty which way to make the Eſpaliers, I would adviſe the placing the lines from the eaſt a little inclining to the ſouth, and toward the weſt a little inclining to the north, that the ſun may ſhine between the rows in the morning and evening when it is low; for in the middle of the day, when the ſun is advanced far above the horizon, it will ſhine over the tops of the Eſpaliers, and reach the ſurface of the earth about their roots, which is a matter of more conſequence than many people are aware of.

The ſorts of Apples proper for Eſpaliers, are the Golden Pippin, Nonpareil, Rennette Griſe, Aromatic Pippin, Holland Pippin, French Pippin, Wheeler's Ruſſet, Pile's Ruſſet, with ſome others. The ſeaſon for planting, and the method of pruning and training theſe trees, you will ſee under the articles of PRUNING, and PYRUS.

The ſorts of Pears proper for an Eſpalier, are chiefly the ſummer and autumn fruits, for ſome of the winter Pears ſeldom ſucceed well in an Eſpalier. Theſe trees, if deſigned for a ſtrong moiſt ſoil, ſhould be upon Quince-ſtocks; but if for a dry ſoil upon free-ſtocks. Their diſtance of planting muſt alſo be regulated by the growth of the trees, which are more unequal in Pears than Apples, and ſhould therefore be more carefully examined before they are planted. As for thoſe Pears upon free-ſtocks, the diſtance ſhould never be leſs than thirty feet for moderate growing trees; but for vigorous ſhooters, the ſpace of forty feet is little enough; eſpecially if the ſoil be ſtrong, in which caſe they ſhould be planted at a greater diſtance.

The particular ſorts of Pears I would recommend for an Eſpalier, are the Jargonelle, Blanquette, Poire ſans Peau, Summer Boncretien, Hamden's Bergamot, Autumn Bergamot, L'ambrette, Gros Rouſſelet, Chaumontelle, Beurre du Roy, Le Marquis, Creſſane, with ſome others of leſs note; always remembering, that thoſe Pears which are of the melting kind, will do better in Eſpalier than the breaking Pears, which ſeldom ripen well on an Eſpalier; as alſo that many ſorts of Pears will ripen well on an Eſpalier in a warm ſoil and ſituation, which require a wall in other places; you ſhould alſo be careful of the ſtocks theſe are grafted on; for if the breaking Pears are grafted upon Quince-ſtocks, the fruit will be ſtony, but the melting Pears will be improved by them. As to the method of planting, ſee the article PYRUS; and for pruning and managing, ſee PRUNING.

I ſhall now give directions for making the Eſpalier, to which the trees are to be trained; but this ſhould not be done until the third year after the trees are planted; for while they are young, it will be ſufficient to drive a few ſhort ſtakes into the ground on each ſide of the trees, in a ſtraight line, to which the branches ſhould be faſtened in an horizontal poſition, as they are produced, in order to train them properly for the Eſpalier; which ſtakes may be placed nearer, or at a farther diſtance, according as the ſhoots produced may require; and theſe will be ſufficient for the three firſt years; for ſhould you frame the Eſpalier the firſt year the trees are planted, many of the ſtakes would rot before the Eſpalier is covered. The cheapeſt method to make theſe Eſpaliers is with Aſh-poles, of which you ſhould have two ſorts; one of the largeſt ſize, which contains thirteen poles in a bundle, and the other ſize thoſe of half a hundred. The firſt or largeſt ſized poles, ſhould be cut about ſeven feet and a half long; theſe are intended for upright ſtakes, and muſt be ſharpened at the largeſt end, that they may, with more eaſe, be driven into the ground; and if their bottoms are burred, or rubbed over with a proper compoſition, they may be preſerved a long time ſound; theſe ſhould be placed at a foot diſtance from each other in a direct line, and of an equal height, about ſix feet above ground; then you ſhould nail a row of ſtraight ſlender poles along upon the tops of the upright ſtakes, which will keep them exactly even, and continue to croſs the ſtakes with the ſmaller poles, and alſo with the tops which were cut off from the larger ſtakes, at about nine inches diſtance, row from row, from the top to the bottom of the ſtakes. Theſe rows of poles ſhould be faſtened with wire to the ſtakes, which if made of Fir, and painted over, will laſt a long time; and the largeſt end of the poles ſhould be cut flat, and nailed to the upright ſtakes, which will ſecure the Eſpalier almoſt as long as the poles will endure; whereas, if your faſtening is not ſtrong, the poles will be continually diſplaced with every ſtrong wind.

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[a] Smith.

When your Eſpalier is thus framed, you muſt faſten the branches of the trees thereto either with ſmall Oſier-twigs, rope-yarn, or ſome ſuch binding, obſerving to train them in a horizontal poſition, and at equal diſtances; being careful not to croſs any of the branches, nor to lay them in too thick. The diſtance which ſhould be allowed for the branches of Pears and Apples, muſt be proportioned according to the ſize of their fruit; ſuch of them whoſe fruit is large, as the Summer Boncretien, Monſieur John, and Beurre du Roy Pears, and the Rennet Griſe, Holland Pippin, French Pippin, and other large Apples, ſhould have their branches ſix or eight inches diſtance at leaſt; and to thoſe of leſſer growth, four or five inches will be ſufficient. But for farther directions, I ſhall refer to the articles of the ſeveral fruits: as alſo that of PRUNING, where theſe particulars will be ſufficiently explained.

But beſides this ſort of Eſpalier made with Aſh-poles, there is another ſort that is by many people preferred; which is framed with ſquare timbers cut to a proper ſize, according to the ſtrength thereof, or the expenſe the owner is willing to go to. Theſe, though they appear more ſightly, when well fixed and painted, are not of longer duration than one of the former, provided it is well made, and the upright poles are of ſufficient ſtrength: nor will they anſwer the purpoſe better, though they are vaſtly more expenſive: the greateſt beauty of an Eſpalier conſiſts in diſpoſing the branches of the trees; which, eſpecially in ſummer, when the leaves are on, entirely hide the frame. All expenſe, therefore, farther than what is neceſſary to ſecure the branches in a regular order, is needleſs.

Fruit-trees thus planted and well managed, are much preferable to thoſe trained up in any other figure: firſt, becauſe they take up very little room in a garden, and are not injurious to the crops in the quarters: ſecondly, becauſe the fruit is better taſted, the ſun and air having free acceſs to every part of the tree, and the dampneſs of the ground being quickly diſſipated: thirdly, becauſe the trees being kept low, and the branches faſtened to the Eſpalier, the fruit will not be ſo apt to be blown down by the wind.

ESULA. See *Apocynum* & *Euphorbia*.

ETHIOPIAN SOUR GOURD. See *Adanſonia*.

ETHULIA.

Lin. gen. n. 934. *Reich.* 1014. *Schreb.* 1271. *Juſſ.* 184. *Gærtn. t.* 164. *Sparganophorus Vaill A. G.* 1719.

Claſſ. 19. 1. Syngeneſia Polygamia Æqualis.

Nat. order of *Compoſitæ Diſcoideæ.—Corymbiferæ.* Juſſ.

GENERIC CHARACTER.

CAL. *Common* many-leaved, rounded, ſimple: *leaflets* linear, nearly equal, ſpreading.

COR. *Compound* tubular: *corollets* hermaphrodite, uniform, diſtant by a ſpace.

Proper funnel-form: *border* five-cleft, upright.

STAM. *Filaments* five, very ſhort, capillary. *Anther* cylindric, tubular.

PIST. *Germ* priſmatic. *Style* filiform, length of the ſtamens. *Stigmas* two, recurved.

PER. none. *Calyx* unchanged.

SEEDS ſolitary, truncated, turbinate, five-cornered, five-furrowed. *Down* none, but a little projecting margin.

REC. naked, convex, excavated with points.

ESSENTIAL CHARACTER.

Recept. naked. *Down* none.

SPECIES.

1\. Ethulia conyzoides. *Panicled Ethulia.*
Lin. ſpec. 1171. *Reich.* 3. 712. *Lin. dec.* 1. *t.* 1. *Vahl ſymb.* 1. 69. Kahiria. *Forſk. ægypt.* 153.
Flowers panicled.

2\. Ethulia Sparganophora.
Lin. ſpec. 1171. *ſyſt.* 734. *Reich.* 3. 712. *Vaill. act.* 368.
Sparganophorus Vaillantii. *Gærtn. fruct.* 2. 395.
Flowers ſeſſile, lateral.

3\. Ethulia divaricata.
Lin. ſyſt. 734. *Reich.* 3. 713. *mant.* 110, 572. *Gærtn. fruct.* 2. 389. *Burm. ind.* 176. *t.* 51. *f.* 1. *Pluk. alm.* 103. *t.* 160. *f.* 5. (Chryſanthemum).
Leaves linear toothed decurrent, peduncles oppoſite to the leaves, one-flowered, ſtem divaricate.

4\. Ethulia tomentoſa.
Lin. ſyſt. 735. *Reich.* 3. 713. *mant.* 110.
Underſhrubby; leaves linear, quite entire, tomentoſe.

5\. Ethulia bidentis.
Lin. ſyſt. 735. *Reich.* 3. 713. *mant.* 110.
Racemules directed one way, calyxes containing about five flowers, leaves lanceolate, oppoſite.

6\. Ethulia Struchium.
Swartz prodr. 111. *Brown. jam.* 312. *n.* 1. *t.* 34. *f.* 2.
Flowers axillary, ſeſſile, all trifid.

DESCRIPTIONS, &c.

1\. Root annual. Stem herbaceous, the thickneſs of a finger, four feet in height, upright, round, but angular at top, pubeſcent, hollow. Branches alternate, axillary, ſhort, ſomewhat erect. Leaves alternate, longer than the intervals, lanceolate, acuminate, equally ſerrate, ſmooth, ſubpubeſcent underneath, veined, ſpreading very much, flat; the loweſt oppoſite. Petioles very ſhort, half-ſtem-claſping, channelled, ſubpubeſcent. Corymbs terminating, compound, three times ſhorter than the leaves, cylindric, ſtreaked, upright, pubeſcent. Bractes few, ſubulate, bowed back, at the baſe of the peduncles. Flowers ſmall, containing above twenty florets, of a pale blue colour. Common calyx imbricate, longer than the flower, permanent; ſcales ſharp, green, ſmoothiſh. Tube of the corollets cylindric, widening at top; ſegments of the border ovate, ſpreading. Seeds ſmooth, ſmall.

It is a large plant, agreeing in ſtature with Baccharis or Conyza. The fructification correſponds in moſt circumſtances with Eupatorium and Ageratum; but it differs materially from all theſe four genera, in having no down or feather to the ſeeds. It is alſo remarkable in having the florets diſtant; and in putting forth roots from the baſe of the ſtem, which is ſeldom the caſe in annual plants. The leaves ſmell very ſweet.

Native of the Eaſt-Indies. It was ſent to the Upſal garden by Profeſſor David van Royen about the year 1760 or 1761, under the name of Eupatorium[a]. It was introduced here in 1776 by Monſ. Thouin: and flowers in july and auguſt[b].

2\. Calyx ſubglobular, imbricate, with unequal ſcales, recurved and patulous at the tip. Receptacle flat, with raiſed dots on it. Seeds ſmall, uniform, ovate, narrower at bottom, rhomb-compreſſed, with angles at the ſides, and one on the back, the rib white, but the interſtices and the ventral plane of a pale teſtaceous colour. Pappus or crown margined or ſhaped like a bowl, a little more than half the length of the ſeed, ſubcartilaginous, ſnowy-white, ſhining, four-cornered, either quite entire, or obſcurely four-toothed[c]. It is a very ſmall plant, from the Eaſt-Indies. Linneus doubts whether Vaillant's plant be the ſame. Gærtner ſeparates this from Ethulia, with which he ſays it has nothing in common, except the calyx.

3\. An annual plant, a hand in height. Stem upright, corymbed, ſmooth at bottom, pubeſcent at top, and branched: the primary branches ſhorter, ſharply quadrangular. Leaves lanceolate, alternate, quite entire, ſomewhat fleſhy, forming the angles of the ſtem by the baſes running down on each ſide. Calyxes terminating, ſubſeſſile; the ſcales imbricate, ſubulate, extremely acuminate, ſtanding out, purpliſh. Styles longer than the corollet[d].—Calyx ſubglobular, ſubſquarroſe, ſcales oblong, patulous or recurved at the tip. Florets difform; thoſe of the diſk funnel-ſhaped, five-cleft, androgynous, barren, fewer; in the ray awl-ſhaped, without teeth, female, fertile, very numerous. Receptacle flat, large, hollow-dotted. Seeds to the female flowers only, ſubturbinate, ſtriated, minute, pale, bald, or without any crown[e]. Gærtner ſeparates thoſe which have a crown, under Vaillant's name of Sparganophorus. —Obſerved by König in the fields of Malabar.

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[a] Linn. dec.

[b] Hort. kew.

[c] Gærtner.

4. Stems ſtreaked, branched. Leaves alternate, ſeſſile, lanceolate-linear, hoary, or very finely tomentoſe, like thoſe of Lavender. Calyxes terminating, ſeſſile, looſe, ſomewhat leafy. Native of China[f].

5. Annual. Stem herbaceous, upright, hexagonal, brachiate. Leaves three-nerved, ſubpetioled, ſerrate, ſmooth. Racemes two or four, at the ends of the ſtem and branches, brachiate, on the upper ſide of which are ſeſſile, narrow, yellow flowers, about five together, alternate, and ſupported by a ſubulate bracte. Seeds oblong, even, with a few ſtreaks. Flowers ſmall as in Milleria, but narrow. —Native of the Eaſt-Indies[g].

6. This riſes generally to the height of two feet and a half, or more. Leaves alternate, oblong, entire. Flower-bunches interſperſed with a few ſmaller ones, that riſe between the common cups, as they ſtand compacted together at the axils of the leaves. Calyx bell-ſhaped, imbricate, with unequal, narrow, acuminate ſcales, from erect-ſpreading. Corollets nearly equal, the marginal ones trifid, the central ones four-parted. Germ oblong, angular, crowned with its proper calyx, which has about four little notches; ſtyle longer than the corolla; ſtigmas oblong, revolute. Receptacle tumid, dotted.

Native of Jamaica[h].

PROPAGATION AND CULTURE.

Moſt of theſe plants being annual, muſt be propagated by ſeeds; and coming from the Eaſt-Indies, muſt be kept in the ſtove. The firſt only has hitherto been cultivated in Europe.]

EUCALYPTUS. (Ευ καλυπτος, *bene tectus, opertus; well covered. So named from the perianth being covered with a remarkable veil or lid.)*

L'Heritier ſert. angl. 18. *t.* 20. *Juſſ.* 451.

Claſſ. 12. 1. Icoſandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* ſuperior, permanent, truncate, covered with a hemiſpherical, deciduous lid before flowering time.

COR. none.

STAM. *Filaments* very numerous, inſerted into the calyx.

PIST. *Germ* inferior, turbinate. *Style* ſingle.

PER. *Capſule* four-celled, gaping only at the tip.

SEEDS very many, angular.

ESSENTIAL CHARACTER.

Cal. ſuperior, permanent, truncate, before flowering-time covered with a hemiſpherical, deciduous lid. *Cor.* none. *Capſ.* four-celled, opening at the top, incloſing many ſeeds.

SPECIES.

1. Eucalyptus obliqua. *Oblique-leaved Eucalyptus.* *L'Herit. ſert. angl.* 18. *t.* 20. *Ait. hort. kew.* 2. 157.
E. piperita. *White voy.* 226?

2. Eucalyptus reſinifera. *Red Gum tree.* *White voy.* 231.

DESCRIPTIONS, &c.

1. This is a very tall tree, growing to the height of more than an hundred feet, and above thirty in circumference: the bark is ſmooth, like that of the poplar: the younger branches are long and ſlender, angulated near the top, but as they grow older the angles diſappear. The leaves are alternate, lanceolate, pointed, very entire, ſmooth on both ſides, and remarkably unequal or oblique at their baſe: the veins are alternate, and not very conſpicuous: the whole ſurface of both ſides of the leaves is marked with numerous minute reſinous ſpots, in which an eſſential oil reſides: the footſtalks are about half an inch in length, round on the under ſide, angular above, quite ſmooth. The flowers have not been fully examined, but the capſules are ſuppoſed to grow in cluſters from ſix to eight in each, ſeſſile and conglomerated: each is about the ſize of a hawthorn berry, globular, but as it were cut off at the top, and of a dark brown colour: the ſeeds numerous, ſmall, and angular. N. B. It is not clear that the above is really the ſame ſpecies with the E. obliqua of L'Heritier. The deſcription is taken from Mr. White's Voyage, where it is named E. piperita.

2. This is a large and lofty tree, much exceeding the Engliſh oak in ſize: the wood is brittle, and contains a large quantity of reſinous gum: the flowers grow in little cluſters, or rather umbels, about ten in each, and every flower has its proper partial foot-ſtalk, about a quarter of an inch in length, beſides the general one: the general foot-ſtalk is remarkably compreſſed, and the partial ones in ſome degree: the flowers are yellowiſh, and of a ſingular ſtructure: the calyx is hemiſpherical, perfectly entire on the margin, and afterwards becomes the capſule: on the top of the calyx, rather within the margin, ſtands a conical pointed calyptra, which is of the ſame colour with the calyx, and about as long as that and the calyx taken together: this calyptra, which is the eſſential mark of the genus, and differs from that of the E. obliqua of L'Heritier, only in being conical and acute inſtead of hemiſpherical, is perfectly entire, and never ſplits or divides, though it is analogous to the corolla of other plants: when it is removed, we perceive a great number of red ſtamina ſtanding in a conical maſs: the anthers are ſmall and red, and in the centre is a ſingle ſtyle, terminated by a blunt ſtigma: the ſtamens are very reſinous and aromatic: the germ appears, when cut acroſs, to be divided into three cells; each containing the rudiments of one or more ſeeds. On making inciſions into the trunk of this tree, large quantities of red reſinous juice are obtained; ſometimes more than ſixty gallons from a ſingle tree: when dried this juice becomes a powerfully aſtringent gum-reſin, much reſembling that known in the ſhops by the name of Kino, and for all medical purpoſes full as efficacious. Mr. White, the chief ſurgeon to our ſettlement at Botany Bay, adminiſtered it to a great number of patients in the dyſentery, and found it eminently ſerviceable, ſo as not to fail in a ſingle inſtance. This gum-reſin diſſolves almoſt entirely in ſpirit of wine, to which it gives a blood-red tincture: water diſſolves about a ſixth part only, and the watery ſolution is of a bright red: both theſe ſolutions are powerfully aſtringent.

EUCLEA. (*From* ευκλεια *or* ευκλεια, *glory or celebrity.)*

Lin. gen. Reich. n. 1236. *Schreb.* 1542. *ſuppl.* 67. *L'Herit. ſert. angl.* 31. *Juſſ.* 432. *Thunb. gen. t.* 84.

Claſſ. 22. 10. Dioecia Dodecandria or Polygamia.

GENERIC CHARACTER.

* *Male.*

CAL. *Perianth* one-leafed, many times ſhorter than the corolla, ſubangular, ſmooth, five-toothed: *teeth* very ſhort, upright.

COR. one-petalled, five-parted: *ſegments* ovate, obtuſe, concave, patulous.

STAM. *Filaments* thirteen (about fifteen, *L'Herit.*) very ſhort; eight in the circumference, five in the centre, (inſerted into the receptacle, *L'Herit.*) *Anthers* four-cornered-ſubulate, grooved, erect, perforated at the tip on both ſides, (ſubvilloſe, ſhorter than the corolla, *L'Herit.)*

* *Female.*

CAL. *Perianth* one-leafed, four-toothed (more ſeldom five-toothed) permanent: *ſegments* erect, three times ſhorter than the corolla.

COR. one-petalled, four-cleft: *ſegments* ovate, obtuſe, concave, erect.

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[d] Linn. mant. [e] Gærtner. [f] Linn. mant. [g] Ibid. [h] Browne.

Pist. *Germ* ovate, ſubvilloſe, ſuperior. *Styles* two, thickiſh, the length of the corolla. *Stigmas* emarginate-bifid, obtuſe.

Per. *Berry* globular, umbilicate with a dot, ſmooth, fleſhy. (A berried capſule, three-horned, three-celled, three-valved. *L'Herit.*—two-celled, *Linn.*)

Seed ſingle, globular, ſmooth; (roundiſh, arilled, one or two abortive, *L'Herit.*)

Obs. *Calyx and corolla in the males often five-cleft, ſeldom four-cleft, very ſeldom ſix-cleft; in the females often four-cleft, very ſeldom five-cleft.* Thunb. *There are hermaphrodite and male hermaphrodite flowers, hence it ſeems to belong to the claſs Polygamia.* L'Herit.

ESSENTIAL CHARACTER.

Male. *Cal.* four or five-toothed. *Cor.* four or five-parted. *Stam.* twelve to fifteen.

Fem. *Cal.* and *Cor.* as in the male. *Germ* ſuperior. *Styles* two. *Berry* two-celled.

SPECIES.

1. Euclea racemoſa. *Round-leaved Euclea.*

Lin. ſyſt. 892. *ſuppl.* 429. *L'Herit. ſert. angl.* 32. *Thunb. gen.* 5. 85. *Breyn. ic. t.* 22. *f.* 3. *Burm. afr.* 238. *t.* 84. *f.* 1? (Padus.)

DESCRIPTION, &c.

This is a branching tree. Leaves alternate, ſubpetioled, obovate, quite entire, obtuſe, ſmooth, perennial. Racemes of flowers from the axils of the upper leaves, ſimple, nodding, hardly the length of the leaves[a].

Monſ. L'Heritier remarks that ſpecimens of this and Celaſtrus corniculatus, when in fruit, are as much alike as one egg is to another, and that from this circumſtance, before he was acquainted with the flower, he took this for that.—See Celaſtrus corniculatus.

Native of the Cape of Good Hope. Introduced here in 1722, by Mr. Thomas Knowlton. It flowers in november and december[b].

EUCŏMIS. (Ευκομος *or* ευκομης, *having beautiful hair.*)

L'Herit. ſert. angl. 17. *Lin. gen. Schreb. n.* 1743. Baſilæa. *Juſſ.* 52.

Claſſ. 6. 1. Hexandria Monogynia.

Nat. order of *Coronariæ.—Aſphodeli.* Juſſ.

GENERIC CHARACTER.

Cal. none.

Cor. inferior, ſix-parted, permanent, ſpreading.

Stam. *Filaments* ſubulate, dilated at the baſe, and united there into a concave nectary faſtened to the bottom of the corolla.

Pist. *Germ* ſuperior. *Stigma* ſimple.

Per. *Capſule* three-celled.

Seeds many.

ESSENTIAL CHARACTER.

Cor. inferior, ſix-parted, permanent, ſpreading. *Filam.* united at the baſe into a nectary growing to the corolla.

SPECIES.

1. Eucomis nana. *Dwarf Eucomis.*

L'Herit. ſert. angl. 17. *Ait. hort. kew.* 1. 432.

Fritillaria nana. *Burm. cap.* 9. *Lin. ſyſt.* 325. *Reich.* 2. 46. *mant.* 223.

Orchidea capenſis, tulipæ flore roſeo. *Petiv. gaz. t.* 85. *f.* 6.

Scape club-ſhaped, leaves broad-lanceolate, acute.

2. Eucomis regia. *Tongue-leaved Eucomis* or *Fritillary.*

L'Herit. ſert. angl. 17. *Ait. hort. kew.* 1. 433.

Fritillaria regia. *Lin. ſpec.* 435. *Reich.* 2. 46. *Mill. dict. n.* 9.

F. longifolia. *Hill. kew.* 354. *t.* 15.

Corona regalis lilii fol. crenato. *Dill. elth.* 109. *t.* 93.

β. Fr. autumnalis. *Mill. dict. n.* 10.

Scape cylindric, leaves tongue-ſhaped obtuſe cloſe to the ground.

3. Eucomis undulata. *Waved-leaved Eucomis* or *Fritillary.*

Ait. hort. kew. 1. 433.

Scape cylindric, leaves ovate-oblong, waved, ſpreading, the leaves of the coma almoſt as long as the raceme.

4. Eucomis punctata. *Spotted Eucomis.*

L'Herit. ſert. angl. 18. *t.* 18. *Ait. hort. kew.* 1. 433.

Aſphodelus comoſus. *Houtt. nat. hiſt.* 12. 336. *t.* 83.

Scape cylindric, leaves oblong-lanceolate, channelled, ſpreading, leaves of the coma ſhort, racemes very long.

DESCRIPTIONS, &c.

1. The leafing is that of Maſſonia. Leaves ovate, acuminate, marked with lines underneath, the veins confluent at the tip[c]. Native of the Cape of Good Hope. It flowers in may. Introduced in 1774, by Mr. Francis Maſſon[d].]

2. Root tuberous, from which ariſe in the autumn ſix or eight obtuſe leaves, near five inches long, and two broad towards the top, growing narrower at their baſe, crenated on their borders, lying flat on the ground, and continuing all the winter. In the ſpring ariſes the flower-ſtalk in the centre of the leaves, about ſix inches high, naked at the bottom; but the upper part is ſurrounded by bell-ſhaped flowers, of a greeniſh colour, appearing in april. The leaves decay in june.

[Native of the Cape of Good Hope. Cultivated in the Eltham garden, to which it was ſent by Mr. Blathwaite of Dirham in Glouceſterſhire[e].—And before that, in 1709, by the Dutcheſs of Beaufort, at Badminton[f]; from whoſe garden probably Mr. Blathwaite had it.]

β. The leaves of this are more than a foot long, broad at their baſe, but narrowed to the top, where they end in acute points. The flower-ſtalk riſes higher than that of the preceding; the flowers are of the ſame ſhape and colour, but ſeldom appear till auguſt. It was raiſed by Mr. Miller from ſeeds ſent him from the Cape of Good Hope.

[3. Native of the Cape of Good Hope. It flowers from march to may. Introduced about 1760 by Mr. Miller[g].

4. Native of the Cape of Good Hope. It flowers in july. Introduced in 1783, by Mr. John Græfer[h]. This is the largeſt ſpecies; the ſecond is of a middle ſize, and the firſt is ſmall[i].

PROPAGATION AND CULTURE.

Theſe plants are to be managed in the ſame way with other Cape bulbs.

Evea. See *Callicocca.*]

Evergreen-thorn. See *Meſpilus Pyracantha.*

[Everlasting. See *Gnaphalium.*]

Everlasting Pea. See *Lathyrus.*

EUGENIA. (*So named from Prince Eugene of Savoy, who was a protector and encourager of Botany, and poſſeſſed a Botanic Garden.*)

Lin. gen. n. 616. *Reich.* 671. *Schreb.* 842. *Mich.* 108. *Juſſ.* 324.

Claſſ. 12. 1. Icoſandria Monogynia.

Nat. order of *Heſperideæ.—Myrti.* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, ſuperior, elevated in the middle into a ſubvilloſe little ball, four-parted; *diviſions* oblong, obtuſe, concave, permanent.

Cor. *Petals* four, twice as large as the calyx, oblong, obtuſe, concave.

Stam. *Filaments* very many, inſerted into the ball of the calyx, length of the corolla. *Anthers* ſmall.

Pist. *Germ* turbinate, inferior. *Style* ſimple, length of the ſtamens. *Stigma* ſimple.

Per. *Drupe* four-cornered, crowned, one-celled.

Seed. *Nut* roundiſh, ſmooth.

Obs. *This genus is not eaſily diſtinguiſhed from* Myrtus, *except in the habit:* 1, 2, 6, 7 *are more diſtinct; but* 3, 4, 5 *approach nearer to Myrtus.* Swartz.

ESSENTIAL CHARACTER.

Cal. four-parted, ſuperior. *Pet.* four. *Drupe* one-ſeeded, four-cornered.

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[a] Linn. ſuppl.

[b] Hort. kew.

[c] L'Heritier.

[d] Hort. kew.

[e] Dillenius.

[f] Hort. kew.

[g] Ibid.

[h] Ibid.

[i] L'Heritier.

SPECIES.

1. Eugenia malaccenſis. *Broad-leaved Eugenia.*
Lin. ſpec. 672. *Reich.* 2. 474. *fl. zeyl. n.* 187. *Rumph. amb.* 1. 121. *t.* 37, 38. *Rheed. mal.* 1. 29. *t.* 18. *Raii hiſt.* 1478. *n.* 2. *Burm. ind.* 114. *zeyl.* 124. *Forſt. eſcul.* 6. *Lour. cochinch.* 306.
Perſici oſſiculo fructus malaccenſis rubens. *Bauh. pin.* 441.
Leaves quite entire, peduncles branched, lateral.

2. Eugenia Jambos. *Narrow-leaved Eugenia.*
Lin. ſpec. 672. *Reich.* 2. 475. *fl. zeyl. n.* 188. *Rumph. amb.* 1. 127. *t.* 39. *Rheed. mal.* 1. 27. *t.* 17. *Raii hiſt.* 1478. *n.* 1. *Burm. ind.* 114. *Lour. cochinch.* 307.
Perſici oſſiculo fructus malaccenſis ex candido rubeſcens. *Bauh. pin.* 441.
Leaves quite entire, peduncles branched, terminating.

[3. Eugenia Pſeudo-Pſidium.
Lin. ſyſt. 461. *Reich.* 2. 475. *Jacqu. amer.* 152. *t.* 93. *pict.* 75. *t.* 140.
Leaves quite entire, peduncles one-flowered ſeveral lateral and terminating.

4. Eugenia uniflora.
Lin. ſpec. 673. *Reich.* 2. 475. *fl. zeyl. n.* 189. *Mich. gen.* 226. *t.* 108. *Tilli piſan.* 117. *t.* 44.
Leaves quite entire, cordate-lanceolate, peduncles one-flowered, lateral.

5. Eugenia cotinifolia.
Lin. ſyſt. 461. *Reich.* 2. 475. *mant.* 243. *Jacqu. obſ.* 3. 3. *t.* 53.
Leaves ovate, obtuſe, quite entire, peduncles one-flowered.

6. Eugenia acutangula.
Lin. ſpec. 673. *Reich.* 2. 476. *fl. zeyl. n.* 190. *Rumph. amb.* 3. 181. *t.* 115. *Rheed. mal.* 4. 15. *t.* 7. *Raii hiſt.* 1480. 4. *Burm. ind.* 114. *Lour. cochinch.* 307.
Leaves crenate, peduncles terminating, fruits oblong acute-angled pomes.

7. Eugenia racemoſa.
Lin. ſpec. 673. *ſyſt.* 461. *Reich.* 2. 476. *fl. zeyl. n.* 191. *Rumph. amb.* 3. 181. *t.* 116. *Rheed. mal.* 4. 11. *t.* 6. *Raii hiſt.* 1479. 3. *Burm. ind.* 115.
Leaves crenate, racemes very long, pomes ovate, quadrangular.

8. Eugenia ſeſſiliflora.
Vahl. ſymb. 3. 64.
Flowers lateral, ſeſſile, leaves oblong, quite entire, ſhining, dotted underneath.

9. Eugenia punctata.
Vahl. ſymb. 3. 65.
Leaves oblong, dotted on both ſides, peduncles oppoſite three-flowered, the length of the leaves.

10. Eugenia nervoſa.
Lour. cochinch. 308.
Leaves quite entire, flowers heaped, terminating, berries globular nerved.

11. Eugenia corticoſa.
Lour. cochinch. 308.
Leaves ovate, acuminate, racemed, corymbed, filaments very ſhort.

DESCRIPTIONS, &c.

Theſe are trees or ſhrubs, all natives of the Eaſt or Weſt-Indies. The flowers are borne on peduncles, proceeding either from the axils or ends of the branches, either ſingly, or many together in a trichotomous ſtructure [a]. The fruit in ſome ſorts ſeems to be rather a berry than a drupe; and in the 6th and 7th is called a pome.

1. This riſes with a tree-like ſtem from twenty to thirty feet high, covered with a brown bark, and ſending out many branches. Leaves oblong, ending in acute points, oppoſite; when young of a bright purple colour, but as they grow older becoming of a light green. The flowers are produced on the ſides of the branches; every peduncle branching into three or four others, each of which ſupports one flower. Fruit ſucculent, irregularly ſhaped, and incloſing a ſingle nut. Loureiro calls it a berry: it is of a roundiſh form, commonly obtuſely quadrangular; ſometimes it is ovate; in ſize it is an inch and half in diameter, fleſhy, very ſweet, ſmelling like the roſe, not very juicy; covered with a thin, ſhining, yellowiſh ſkin; and containing commonly one ſeed, which is large, roundiſh, ſoftiſh, not bony or horny. The fruit is very agreeable to the taſte, ſmell and ſight, and is eſteemed wholeſome.—Forſter deſcribes it as whitiſh, tinged with roſe-colour, pear-ſhaped, and ſometimes as big as the fiſt, but uſually much ſmaller. It is very common in moſt of the iſlands in the South Sea, and is cultivated almoſt every where between the tropics.—Mr. Miller cultivated it here in 1768 [b].] He ſays that he received it from Dr. Heberden, with ſome other plants, which were ſent by his brother from Braſil.

2. This riſes to the ſame height, but the leaves are longer and narrower. Flowers moſtly terminating, but ſome come out from the ſides. Fruit ſmaller, rounder, and not ſo much eſteemed.

[Leaves oppoſite, petioled, the lower oval, the upper lanceolate, and very long [c]. Flower greeniſh yellow. Fruit pear-ſhaped, two inches long, white and red, having no ſmell [d].

Native of the Eaſt-Indies and Cochinchina. It flowers from may to july. Cultivated in 1768 by Mr. Miller [e].

3. This is an upright tree twenty feet high, in appearance not unlike a Pear tree. Leaves lanceolate-ovate, acuminate and ſickle-ſhaped at the end, bright green, ſhining, from three to four inches long, oppoſite, on ſhort petioles. Peduncles one-flowered, above an inch long, aggregate. Calyx deeply four-parted. Petals white. Fruit globular, at firſt green, then paſſing through the different ſhades of yellow as it ripens, till at length it becomes ſcarlet; it is ſcarcely half an inch in diameter, the ſkin is thin, and the pulp is ſoft, ſweet and red. The ſeed is large and globular. Native of Martinico, where it is called *Goyavier baſtard.* It flowers in october, and bears fruit in december and january [f].

4. Peduncles ſolitary. Flowers white; fruit bright red, ſoft, ſlightly grooved, and having a ſweet ſmell. It was firſt brought from Goa, and cultivated in the Grand Duke's garden near Florence; whence it came into the public botanic gardens of Florence and Piſa about the year 1718 [g].

5. The younger branches are angular. The leaves are numerous, oppoſite, ſubpetioled, glittering, leathery, ſometimes but ſeldom emarginate. Peduncles axillary, one, two or three [h], ſlender, an inch in length. Fruit globular, ſucculent, incloſing a ſingle ſhining membranaceous nut, having one ſeed in it. Native of Cayenne, where it is called by the French *Ceriſier de Cayenne* [i].

6. Leaves at the ends of the branches, exactly like thoſe of the Horſe-Cheſnut, obovate, ſharpiſh, very finely toothed. Raceme ſimple, very long. Flowers ſmall, with longiſh ſtamens and piſtils [k]. Loureiro ſays, it is a large tree with ſpreading branches. Leaves large, ſmooth, ſcattered, on long petioles. Flowers reddiſh, ſeſſile, on racemes often two feet long, and pendulous. Calyx bell-ſhaped, with roundiſh ſegments. Petals ſmall, roundiſh, converging. Filaments filiform, very long, with roundiſh anthers. Germ turbinate-round: ſtyle awl-ſhaped, longer than the ſtamens. Berry oblong, three inches in length, ſharpiſh at both ends, quadrangular, with ſharp angles, juiceleſs, corticoſe, ſomewhat wrinkled, browniſh yellow; incloſing one large ovate ſmooth farinaceous ſeed.

Native of the Eaſt-Indies, and of Cochinchina.

7. Peduncles ſimple, longer than the leaves, pendulous. Pomes rounded, without any ſharp angles [l]. Native not only of India, but of New Caledonia in the South Seas.

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[a] Juſſieu.

[b] Hort. kew.

[c] Linn. zeyl.

[d] Loureiro.

[e] Hort. kew.

[f] Jacquin.

[g] Micheli.

[h] Linn. mant.

[i] Jacquin.

[k] Linn. zeyl.

[l] Ibid.

Juſſieu refers the two laſt ſpecies to other genera; the 6th to *Stravadium*, and this to *Butonica*: both having alternate leaves, and many flowers together in racemes.

8. Branches round, ſmooth, covered with an aſh-coloured bark, leafy at top, warted below. Leaves oppoſite, on very ſhort petioles, ſometimes two inches long, and frequently an inch and half broad, the edges a little turned back, netted, veined on both ſides, very ſmooth, the upper ſurface and not dotted, the lower paler, with numerous browniſh dots ſcattered over it. Flowers below the leaves, ſolitary or ſeveral, oppoſite. Calyx coriaceous, with oblong leaflets, hoary on the outſide, dotted with brown. Fruit the ſize of a Plum, globular, dotted. Obſerved in the iſland of Santa Cruz by Weſt.

9. Branches round, alternate, aſh-coloured at bottom, purpliſh at top, having raiſed dots ſcattered over them. Leaves oppoſite, an inch or more in length, bluntiſh, ſmooth, rigid, flat, quite entire, paler underneath, on ſhort petioles; when young they are ſilky. Peduncles axillary, ſolitary, dotted. The two lateral flowers pedicelled, the middle one ſeſſile. There are two briſtle-ſhaped bractes at the baſe of the lateral ones. Segments of the calyx five, rounded, dotted. Petals, when magnified, appearing to be very finely ciliate.

Obſerved in the iſland of Santa Cruz by von Rohr and Weſt[m].

Vahl doubts whether it be any thing more than a variety of Myrtus fragrans, with which it agrees in many circumſtances. It differs only in having the peduncles conſtantly axillary and three-flowered, not terminating and three-parted, with three-flowered pedicels, as in Myrtus fragrans: the leaves alſo are on longer petioles. It ſeems to differ from Eug. guianenſis of Aublet in having the peduncles the ſame length with the leaves, and larger flowers.

10. This is a large tree, with ſpreading branches. Leaves lanceolate, ſmooth. Flowers white, on one-flowered peduncles. Calyx large. Petals roundiſh, ſmall, quickly deciduous. Filaments linear, more than a hundred, three times as long as the petals, ſpreading out wide into a globular head: with ſmall, nodding anthers. Style awl-ſhaped, longer than the ſtamens, with a ſharp ſtigma. Berry globular, an inch in diameter, nerved, ſmooth, corticoſe, browniſh red; incloſing one globular ſeed, in many angular pieces, nearly equal in ſize, and eaſily ſeparable.

11. This alſo is a large tree with ſpreading branches, covered with a thick cloven bark, having ſomething of an aromatic flavour. Leaves quite entire, ſmooth, ſuboppoſite. Flowers reddiſh-white, ſmall, numerous, ſubterminating. Calyx goblet-ſhaped, ſubtruncate. Petals ſmall, roundiſh, cloſed. Filaments twenty, awl-ſhaped, ſhorter than the corolla, placed near the edge of the calyx; anthers roundiſh, very ſmall. Berry only a quarter of an inch in diameter, ſubturbinate, ſmooth, blackiſh; incloſing one roundiſh ſoftiſh ſeed.

This and the preceding are natives of Cochinchina in woods[n].

Jacquin has another ſpecies, which he names Eugenia carthagenenſis, with two varieties of it—baruenſis and myrtifolia.]

PROPAGATION AND CULTURE.

Set the ſtones, freſh from their places of natural growth, in ſmall pots filled with light earth: plunge them in a hot-bed, obſerving to keep the earth moiſt, but not wet. In about ſix weeks the plants will appear; when about four inches high, ſeparate them carefully, plant each in a ſmall pot, plunge them in the hot-bed again, and ſhade them carefully till they have taken new root. Treat them in the ſame way as other tender plants from the ſame countries, keeping them plunged in the tan-bed, and in winter watering them ſparingly.

[Euodia. See *Agathophyllum* and *Fagara*.

EVOLVŬLUS. (*From* evolvo *to roll out.*)

Lin. gen. n. 385. *Reich.* 416. *Schreb.* 524. *Juſſ.* 134.

Claſſ. 5. 4. Pentandria Tetragynia.

Nat. order of *Campanaceæ.—Convolvuli.* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* five-leaved; *leaflets* lanceolate, ſharp, permanent.

Cor. one-petalled, rotate, five-cleft.

Stam. *Filaments* five, capillary, ſpreading, almoſt the length of the corolla. *Anthers* a little oblong.

Pist. *Germ* ſomewhat globoſe. *Styles* four, capillary, diverging, length of the ſtamens. *Stigmas* ſimple.

Per. *Capſule* ſomewhat globoſe, four-celled, four-valved.

Seeds ſolitary, roundiſh, cornered on one ſide.]

Obs. *This genus is allied to Convolvulus.*

E. linifolius *afforded the character.*

ESSENTIAL CHARACTER.

Cal. five-leaved. *Cor.* five-cleft, rotate. *Capſ.* three-celled. *Seeds* ſolitary.

SPECIES.

1. Evolvulus nummularius.
Lin. ſpec. 391. *Reich.* 1. 750. *Jacqu. amer. pict. t.* 260. *f.* 23. *Swartz obſ.* 118.
Convolvulus nummularius. *Lin. ſpec. edit.* 1. 157. *Brown. jam.* 153. *Sloan. jam.* 1. 157. 18. *t.* 99. *f.* 2. *Raii ſuppl.* 382. *n.* 94.
Leaves roundiſh, ſtem creeping, flowers ſubſeſſile.

2. Evolvulus gangeticus.
Lin. ſpec. 391. *Reich.* 1. 750. *amœn.* 4. 306. *n.* 121.
Leaves cordate, obtuſe, mucronate, villoſe, petioled, ſtem diffuſe, peduncles one-flowered.

3. Evolvulus alſinoides. *Chickweed-leaved Evolvulus.*
Lin. ſpec. 392. *ſyſt.* 299. *Reich.* 1. 750. *fl. zeyl. n.* 76. *hort. cliff.* 68. *Burm. zeyl.* 11. *t.* 6. *f.* 1. & 19. *t.* 9. (Alſine & Anagallis.) *Rheed. mal.* 11. 131. *t.* 64. *Pluk. alm.* 116. *t.* 9. *f.* 1.
Leaves obcordate, obtuſe, hairy, petioled, ſtem diffuſe, peduncles three-flowered.

4. Evolvulus emarginatus.
Lin. ſyſt. 299. *ſuppl.* 186.
Leaves kidney-form, repand.

5. Evolvulus linifolius. *Flax-leaved Evolvulus.*
Lin. ſpec. 392. *ſyſt.* 299. *Reich.* 1. 750. *amœn.* 4. 306. *n.* 122. *Brown. jam.* 152. *t.* 10. *f.* 2.
Leaves lanceolate, villoſe, ſeſſile, ſtem upright, peduncles three-flowered, long.

6. Evolvulus tridentatus.
Lin. ſpec. 392. *ſyſt.* 299. *Reich.* 1. 751. *Burm. ind. t.* 16. *f.* 3. *Pluk. mant. t.* 167. *f.* 5. (Convolvulus). *Rheed. mal.* 11. 133. *t.* 65.
β. Convolvulus indicus barbatus minor, foliorum apicibus lunulatis. *Pluk. alm. t.* 276. *f.* 6.
Leaves linear-wedge-form, three-cuſped, dilated at the baſe and toothed, peduncles one-flowered.

7. Evolvulus ſericeus.
Swartz prodr. 55. *Brown. jam.* 153. *n.* 3. *t.* 10. *f.* 3. (Convolvulus.)
Leaves lanceolate, ſeſſile, ſilky underneath, peduncles ſhort, one-flowered.

DESCRIPTIONS, &c.

1. From a ſmall, ſtringy, fibrous, annual root, ſpring long, trailing ſtalks, taking root here and there where they touch the ground, and putting forth alternately at ſmall unequal diſtances leaves almoſt round, like thoſe of *Lyſimachia tenella*, three quarters of an inch long, and an inch broad, having a ſmall notch at the end, and on petioles a quarter of an inch in length, and of a brown colour. Flowers axillary, on ſhort peduncles, of a light blue colour; (Swartz ſays, white.) Legume brown, containing two or three brown ſeeds[o]. Browne obſerves that the flowers are deeply crenated. Juſſieu affirms, that the ſtyles are two, and bifid; and that the plant is not milky. According to Swartz, the ſtyles are three or four; and the capſule three or four-celled, and three or four-valved.

Native of Jamaica and Barbadoes. Common alſo in the dry plains of other iſlands in the Weſt-Indies.

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[m] Vahl.

[n] Loureiro.

[o] Sloane.

2. Native of the Eaſt-Indies.

3. This is a little annual plant, with a creeping root. The ſtems, leaves, petioles and peduncles are covered with rufous hairs. Leaves alternate, roundiſh, on a ſhort petiole. Flowers axillary, ſolitary, on long peduncles. Corolla blue, large in proportion to the plant. In Ceylon it has the name of *Wiſnugarandi,* from the Malabar deity *Wiſnu,* and *Garandi,* which ſignifies the dyſentery. It is reputed to be a ſovereign remedy in that diſorder[p]. Native of the Eaſt-Indies. Introduced in 1771, by Monſ. Richard. It flowers in june and july[q].

4. Annual. Stems filiform, creeping. Leaves petioled, ſmooth, waved about the edge; petioles muricate underneath. Flowers axillary, ſolitary, ſmall. Peduncles the length of the petioles. Native of the Eaſt-Indies[r].

5. This whole plant has the appearance of a very fine ſort of flax. It ſeldom riſes above ten or fourteen inches. The ſtalk is generally ſimple, or but very little divided, ſlender and upright. The leaves are narrow and few: they each throw out a long and delicate peduncle from their axils, furniſhed with a very ſmall exterior two-leaved cup about the middle. The ſtyles are two, and bifid. The capſules are divided into two or four cells, and contain many ſeeds. In the low lands of Jamaica[s]. It is an annual; flowers in auguſt and ſeptember; and was introduced in 1782, by Mr. Francis Maſſon[t].

6. The ſtem of this is twining. Native of the Eaſt-Indies[u].

7. According to Browne, this is ſo extremely like the linifolius, that they are hardly to be diſtinguiſhed without great attention. The flower-ſtalks are very ſhort in this, the cups ſingle, and every flower furniſhed with four ſtyles. Native of Jamaica, in the low lands.

PROPAGATION AND CULTURE.

Theſe are all ſtove plants, to be cultivated and treated as the tender ſorts of Convolvulus from the ſame countries.

Euonymo affinis. See *Croton* and *Kiggelaria.*

Euonymoides. See *Celaſtrus.*

Euonymo similis. See *Coffea.*]

EUONYMUS. ('Ευώνυμος *of Theophraſtus. From* ευς *good, and* ονομα, *a name.* κατ ανσιφρασιν, *as the grammarians ſpeak; this ſhrub having a bad reputation, as a poiſon.)*

Engl. *Spindle-tree.*
Fr. *Fuſain,* or *Bonnet de Prêtre.*
Lin. gen. n. 271. *Reich.* 291. *Schreb.* 373. *Tourn.* 388. *Juſſ.* 377. *Gærtn. t.* 113.
Claſſ. 5. 1. Pentandria Monogynia.
Nat. order of *Dumoſæ. Rhamni* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, five-parted, flat: *diviſions* roundiſh, concave.

Cor. *Petals* five, ovate, flat, ſpreading, longer than the calyx.

Stam. *Filaments* five, ſubulate, upright, ſhorter than the corolla, placed on the germ as it were on a receptacle. *Anthers* twin.

Pist. *Germ* acuminate; *ſtyle* ſhort, ſimple. *Stigma* acute.

Per. *Capſule* ſucculent, coloured, five-ſided, five-cornered, five-celled, five-valved.

Seeds ſolitary, ovate, involved in a berried *aril.*

Obs. *The fructification in ſome individuals or ſpecies takes away a fifth part of the number. In ſome there are no filaments, except the points of the receptacle.*

ESSENTIAL CHARACTER.

Cor. five-petalled. *Capſ.* five-ſided, five-celled, five-valved, coloured. *Seeds* calyptred, or veiled.

SPECIES.

1. Euonymus europæus. *Common Spindle-tree.*
Lin. ſyſt. 238. *Reich.* 1. 554. *mant.* 342. *fl. ſuec. n.* 204. *Gærtn. fruct.* 2. 149. *Ait. hort. kew.* 1. 273. *Hudſ. angl.* 98. *With.* 241. *Relh. cant. n.* 185. *Hall. helv. n.* 829. *Neck. gallob.* 124. *Pollich. pal. n.* 232. *Allion. pedem. n.* 1634. *Krock. ſileſ. n.* 352. *Villars dauph.* 2. 540. 1. *Hellen. monogr.* 11.
E. eur. α. tenuifolius. *Lin. ſpec.* 286.
E. vulgaris. *Mill. dict. n.* 1. *Scop. carn. n.* 267. *Park. theat.* 241. 1. *Raii hiſt.* 1621. *ſyn.* 468.— granis rubentibus. *Bauh. pin.* 428.
E. multis, aliis Tetragonia. *Bauh. hiſt.* 1. 202. Euonymus *Camer. epit.* 102. *Dod. pempt.* 783.
E. Theophraſti. *Ger.* 1284. 1. *emac.* 1468. 1.
Flowers moſtly four-ſtamened, peduncles compreſſed, many-flowered, ſtigmas awl-ſhaped, leaves ſmooth, (bluntly ſerrate, angles of the capſules blunt.)

2. Euonymus latifolius. *Broad-leaved Spindle-tree.*
Lin. ſyſt. 238. *Mill. dict. n.* 2. *Ait. hort. kew.* 1. 273. *Hellen. monogr.* 17. *Hall. helv. n.* 830. *Scop. carn. n.* 266. *Jacqu. auſt.* 3. 48. *t.* 289. *Allion. pedem. n.* 1633. *Krock. ſileſ. n.* 353. *Bauh. pin.* 428. *Ger.* 1284. *f.* 2. *emac.* 1468. *f.* 2. *Park. theat.* 241. *f.* 3. *Raii hiſt.* 1621. 2. *Jouſt. dendr.* 7. 3. *t.* 104. *Duham. arb.* 2. 226. *n.* 3. *Villars dauph.* 2. 540. 2.
E. 1. ſ. latifolia. *Cluſ. hiſt.* 2. 56. *Bauh. hiſt.* 1. 202.
Moſt of the flowers five-ſtamened, bark ſmooth, peduncles filiform, cylindric, many-flowered; (leaves ſharply ſerrate, angles of the capſules ſharp.)

[3. Euonymus verrucoſus. *Warted Spindle-tree.*
Lin. ſyſt. 238. *Ait. hort. kew.* 1. 273. *Scop. carn. n.* 268. *Jacqu. auſtr.* 1. 30. *t.* 49. *Hellen. monogr.* 12.
E. eur. γ. leproſus. *Lin. ſuppl.* 154.
E. 2. *Cluſ. hiſt.* 1. 57.
E. fl. phoeniceo. *Bauh. hiſt.* 1. 203.
E. granis nigris. *Bauh. pin.* 428. *Jonſt. dendr.* 2. 3. *t.* 104.
E. pannonicus. *Ger.* 1285. *f.* 3. *emac.* 1468. 3. *Raii hiſt.* 1622.
Flowers four-ſtamened, bark warted, peduncles filiform, cylindric, with about three flowers.

4. Euonymus atropurpureus. *Purple-flowered Spindle-tree.*
Lin. ſyſt. 238. *Ait. hort. kew.* 1. 274. *Jacqu. hort.* 2. 55. *t.* 120.
Flowers four-ſtamened, peduncles compreſſed, many-flowered, ſtigmas four-ſided, truncate.]

5. Euonymus americanus. *Evergreen Spindle-tree.*
Lin. ſpec. 286. *Reich.* 1. 555. *mant.* 342. *hort. upſ.* 30. *cliff.* 32. (Celaſtrus.) *Gron. virg.* 17. *Pluk. alm. t.* 115. *f.* 5. *Hellen. monogr.* 15.
Rhus virginianum, folio myrti. *Comm. hort.* 1. 157. *t.* 81. *Raii dendr.* 57. 7.
All the flowers five-cleft, leaves ſeſſile.

[6. Euonymus Tobira.
Lin. ſyſt. 238. *Thunb. jap.* 99. *Hellen. monogr.* 13.
Flowers five-cleft, leaves oblong, retuſe, entire.

7. Euonymus japonicus.
Lin. ſyſt. 238. *Thunb. jap.* 100. *Kæmpf. ic. ſelect. t.* 8. *Hellen. monogr.* 9. *fig.*
Flowers four-cleft, leaves ovate, obtuſe, ſerrate.

8. Euonymus chinenſis.
Lour. cochinch. 156.
Stem ſcandent, leaves three-lobed, peduncles many-flowered.

DESCRIPTIONS, &c.

The difficulty of giving ſignificant and permanent ſpecific or trivial names, is apparent from this genus. When two ſpecies only were known, they might well be diſtinguiſhed by the titles *europæus* and *americanus*; but now that we know three European and two American ſpecies, this diſtinction is inſufficient, and very abſurd. The ſame may be ſaid of Thunberg's title *japonicus*; and he ought to have done better, becauſe he knew that there were two Japaneſe ſpecies. I acknowledge the difficulty of giving ſignificant trivial names to be great; and I leave them as I find them, being unwilling to increaſe that confuſion which neceſſarily ariſes from the prodigious number of plants which the induſtry of later botaniſts has diſcovered.

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[p] Burm.
[q] Hort. kew.
[r] Linn. ſuppl.
[s] Browne.
[t] Hort. kew.
[u] Linn.

Theſe are trees or ſhrubs. The ſmaller branches or twigs four-cornered. The leaves oppoſite, ſcarcely ſtipulaceous. The peduncles axillary, ſolitary, oppoſite, one-flowered or elſe many-flowered, diſpoſed in umbels [a].]

1. The common Spindle-tree, when growing in hedges, is ſeldom ſeen of any conſiderable ſize, but is a ſhrub; if planted ſingle, however, and properly trained, it will have a ſtrong woody ſtem, and riſe more than twenty feet high, dividing into many branches. Leaves lanceolate, about three inches long, and an inch and quarter broad in the middle, oppoſite, entire, of a deep green colour. The flowers come out at the end of may, or the beginning of june, in ſmall bunches from the ſide of the ſtalks on ſlender peduncles. The petals are whitiſh, and ſpread in form of a croſs.

[Though moſt of the flowers have four ſtamens, a four-parted calyx, and four petals to the corolla; yet it may be ranged in this claſs, with its congeners, from the primary flower, which has five ſtamens, a five-parted calyx, and five petals [b]. The capſule is turbinate, ſwelling out like a cuſhion, or the old-faſhioned clerical cap, four-grooved; barked with a ſoft red membrane, coriaceous, four-celled and four-valved. Partitions faſtened to the middle groove of the valves. Seeds fixed, without any receptacle to the central angle of the cells; they are ſolitary, or very rarely in pairs, ovate-globular, ſmooth, involved in a fleſhy-ſpongy aril, which is perforated in the part oppoſite to the navel, fixed to the dorſal band of the ſeed, and ſaffron-coloured; the ſeeds are pale fleſh or roſe-coloured [c].] The fruit ripens in october, at which time the ſeed-veſſels ſpread open and expoſe the ſeeds, which being of a beautiful red colour, theſe ſhrubs make then a good appearance.

[From its uſe for ſkewers it has the name of *Prick-wood*, and is called by Gerarde *Prick Timber tree*. It is called alſo *Louſe Berry*, *Dogwood* and *Gatteridge Tree*, by which latter names it is confounded with *Cornus ſanguinea*.

In German it is named *Spindelbaum*. In Swediſh *Alſter*. In Daniſh *Beenved*. In Italian *Fuſaggine*. In Spaniſh *Bonetero*; *bonete de clerigo*. In Portugueze *Barrete de clerigo*. In Ruſſian *Mereſkletiana*, *Kiſlianka*, *Swida*, *Sedlini Bereſdren*.

The wood is ſaid to be uſed by the muſical inſtrument makers. For ſkewers and toothpicks the branches ſhould be cut when the ſhrub is in bloſſom, for it is then tough, and not eaſily broken; in that ſtate it is alſo uſed by watch-makers, for cleaning watches. According to Linneus, kine, goats and ſheep eat it, but horſes refuſe it. No animal, however, ſeems to browze upon it but the goat. The berries are ſaid to be fatal to ſheep; they vomit and purge violently; powdered and ſprinkled upon the hair, they deſtroy lice [d].]

2. This riſes with a ſtronger ſtem than the firſt, and grows to a larger ſize. The leaves are ovate-lanceolate, about four inches long, and two broad in the middle, oppoſite, entire, light green, on ſhort foot-ſtalks. The flowers come out from the ſide of the branches, upon very ſlender peduncles, two inches and a half long, branching out into a looſe bunch, and the flowers on ſeparate pedicels. Petals five, at firſt white, but changing to purple. The ſame number predominates in the other parts of the fructification. The fruit is much larger than that of the common ſort, and the peduncles being weak, it always hangs down. Native of Auſtria, Hungary, and moſt of the ſouthern parts of Europe. This was ſeldom ſeen in England, till Mr. Miller procured it from France; and it is now become very common in the nurſeries.

[3. This differs from the two former in having the ſtem and branches warted, the upper ſurface of the petals covered with a pile conſiſting of very ſmall teats: the anthers rounded, and placed upon their pyramidal filaments like the cap of a muſhroom—a raiſed tubercle ſupporting each filament—the receptacle variegated, with red dots—no ſtyle; but inſtead of it a ſtigma like a bladder—the capſule more flatted at top; the ſurface a little wrinkled, and as broad as long—the ſeeds half black [e]. Native of Auſtria and Carniola.—Cultivated here in 1763 by by Mr. James Gordon; and flowering in may and june [f].

4. This is a native of the northern parts of Aſia; and is a ſhrub about ſix feet high, with an aſh-coloured bark, ſmooth, and free from tubercles: the branches are round, and a little compreſſed at their extremities: the leaves are oblong-lanceolate, ſmooth on both ſides, veiny on the back, and ſtand oppoſite; they are very finely ſerrated on the edges; where they are of a purple tinge; as are alſo the foot-ſtalks: the common peduncles are biflorous, ſlender and branchy; the proper ones red. All the flowers, (which are dark purple) are conſtantly tetrandrous. The ſtyles are greeniſh, and the anthers yellow [g].

Introduced in 1756, by Meſſrs. Kennedy and Lee [h].

5. This riſes with a ſhrubby ſtalk to the height of eight or ten feet, dividing into many branches, which come out oppoſite from the joints of the ſtem. Leaves lanceolate, two inches long, and about three quarters of an inch broad in the middle, ending in acute points; they are oppoſite, and continue green all the year. The flowers are produced at the ends of the branches, and alſo from the ſides, in ſmall cluſters; and are ſucceeded by round capſules, which are cloſely armed with rough protuberances. It flowers in july, but ſeldom produces ripe fruit in England.

This being an evergreen ſhrub, it merits a place in every curious garden, and particularly in all plantations. There is a variety in the nurſeries with variegated leaves.

[It was cultivated in 1713, by Biſhop Compton [i].

6. Stem ſhrubby, upright, leafleſs, branched, ſcarce a fathom in height. Branches alternate, round, upright, round, leafleſs. Branchlets alternate, upright, green, ſmooth, leafy. Leaves aggregate, petioled, ſhining above, pale underneath, netted, bent down at the edge, upright, thickiſh, from an inch to two inches in length, oblique, ſmooth. Petioles compreſſed, pale, half an inch long. Flowers at the ends of the branchlets, aggregate in a kind of umbel, upright. Peduncles round, one-flowered, ſeldom divided, pubeſcent, twice the length of the petioles. Calyx ſeldom four-cleft, pubeſcent, green, upright, cloſed, four times ſhorter than the corolla; diviſions lanceolate, bluntiſh, keeled. Petals five, ſeldom ſix, white, ſmelling like orange flowers, oblong-ovate, blunt, entire, patulous. Stamens ſeldom ſix. Capſule ovate, blunt, crowned with the permanent ſtyle, ſmooth, three-furrowed, three-valved, ſeldom four-valved, very rarely five-valved and five-furrowed. Seeds about four within each valve, ovate, angular, red, involved in a viſcid aril, within white. The whole plant is ſomewhat milky. Native of Japon, where it flowers in may [k].

7. Stem ſhrubby, ſtrict, aſh-coloured, naked, a fathom in height. Branches oppoſite, from upright ſpreading, green, but little leafy. Branchlets decuſſate, leafy, ſhort, green. Leaves on the outmoſt branches, oppoſite, approximate, petioled, ſerratures obtuſe, entire at bottom, thick, paler underneath, nerved, ſmooth, from erect ſpreading, an inch in length. Petiole ſemicylindric, ſmooth, a line long. Flowers axillary, panicled. Panicle trichotomous, decompound, divaricate, ſubfaſtigiate. Peduncle and pedicels angular, ſmooth, compreſſed. Calyx four-leaved, permanent, inferior; diviſions broad-ovate, obtuſe, concave, ſmooth, half the length of the corolla, pale green. Corolla four-petalled, white, patulous; petals rounded, concave, entire, a

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[a] Juſſieu.
[b] Linn.
[c] Gærtner.
[d] Withering.
[e] Scopoli.
[f] Hort. kew.
[g] Jacquin.
[h] Hort. kew.
[i] Ibid.
[k] Thunberg.

line in length. Stamens four. Capſule ſubglobular, four-grooved, ſmooth, four-valved, four-celled; the ſtyle and calyx permanent. Seeds four, oblong, the outer coat red, within white, in the centre green. Sometimes one of the ſeeds is abortive. Sometimes alſo the calyx is three-leaved, the germ three-ſided, and the capſule three-celled and three-furrowed.—It varies with leaves ſpotted with white. The flowers appear in june and july, and the fruit ripens in november and december.—Native of Japan [l].]

8. Stem herbaceous, long, climbing by tendrils. Leaves cordate, three-lobed, the middle lobe acute, the ſide ones obtuſe, toothletted, ſharp. Flowers white. Calyx five-cleft, ſpreading. Petals five, oblong-ovate, ſpreading, longer than the calyx. Berry ſuperior, ovate, attenuated to both ends, ten-cornered, one-celled, valveleſs, containing many ovate compreſſed ſeeds, covered by a ſucculent calyptre. Native of China, beyond the ſuburbs of Canton.

It does not agree very well with this genus, but may remain here till a better place be found for it [m].]

PROPAGATION AND CULTURE.

1—4. The four firſt ſorts may be propagated either by ſeeds, or layers; if by ſeeds, they ſhould be ſown in autumn, ſoon after they are ripe; then the plants will come up the ſpring following; but if the ſeeds are not ſown till ſpring, the plants will not appear till the following ſpring, whereby a whole year is loſt. The ſeeds ſhould be ſown upon a ſhady border, where they will ſucceed better than when they are more expoſed to the ſun. When the plants come up, they will require no other care but to keep them clean from weeds till the following autumn, when, as ſoon as their leaves decay, the plants ſhould be taken up and tranſplanted into a nurſery, in rows two feet diſtant, and the plants one foot aſunder in the rows; in this place they may remain two years, and then they may be removed to the places where they are to remain.

When theſe are propagated by layers, the young ſhoots ſhould be laid down in autumn; and if the joint which is laid deepeſt in the ground is ſlit, as is practiſed for Carnations, it will cauſe them to put out roots much ſooner than they otherwiſe would do; theſe layers will be ſufficiently rooted in one year to bear tranſplanting, when they ſhould be taken from the old plants, and treated in the ſame way as the ſeedlings. The cuttings of theſe ſorts, planted in a ſhady border, will take root, but they ſhould be planted in autumn, as ſoon as their leaves begin to fall; they ſhould be the ſhoots of the ſame year, with a knot of the former year at bottom.

5. The fifth ſort, which grows naturally in North America, is ſo hardy as rarely to ſuffer by cold in England, provided it is not planted in places very much expoſed. This may be propagated by laying down the young branches in the autumn, obſerving to tongue them in the ſame manner as is practiſed in laying of Carnations: theſe will have made good roots in one year, when they may be cut from the old plants, and planted in a nurſery for two years to get ſtrength; after which, they ſhould be planted where they are deſigned to remain.

[6, 7, 8. Have not yet been introduced into cultivation.

Euonymus. See *Ceanothus*, *Celaſtrus*, *Rhododendron*, *Spiræa*, *Trichilia*.

EUPAREA. (Ευπαρειος, *pulchras genas habens. The petals being of a beautiful fleſh colour.*)

Banks. Lin. gen. Schreb. n. 397. *Gærtn. t.* 50.

Claſſ. 5. 1. Pentandria Monogynia.

GENERIC CHARACTER.

Cal. *Perianth* five-leaved: *leaflets* lanceolate, acute.

Cor. *Petals* five or twelve, oblong, narrow, ſpreading, longer than the calyx.

Stam. *Filaments* five. *Anthers*

Pist. *Germ* roundiſh, ſuperior. *Style* briſtle-ſhaped, long. *Stigma* ſimple.

Per. *Berry* juiceleſs, globular, crowned with the permanent ſtyle, one-celled.

Seeds very many, roundiſh, ſmall, adhering to a globular, ſungous, free receptacle in the middle of the berry.

ESSENTIAL CHARACTER.

Cal. five-leaved. *Cor.* five or twelve-petalled. *Berry* ſuperior, one-celled. *Seeds* very many, adhering to a free receptacle.

SPECIES.

1. Euparea amoena.

Soland. Mſs. t. 50. *f.* 5. *Gærtn. fruct.* 1. 230.

DESCRIPTION, &c.

This is a procumbent plant, having the appearance of Nummularia, but only one fourth of the ſize. The flowers have the colour of thoſe of Anagallis phœnicea or Pimpernel, but are many-petalled. The fruit, which Gærtner in one place calls a capſule, and in another a juiceleſs berry, however it be preſſed, will not open with regular valves: it is therefore nearly allied to Trientalis. The ſeeds have a navel in the belly oppoſite to the embryo.

Native of New Holland [n], and Terra del Fuego.

Eupatoria. See *Agrimonia*, *Conyza*, *Eupatorium*, *Kuhnia*, *Serratula*.

Eupatorio-Affinis. See *Baccharis & Serratula.*

Eupatorioides. See *Gnaphalium.*]

Eupatoriophalacron. See *Eclipta*, *Siegeſbeckia*, *Verbeſina*.

EUPATORIUM. (*of Pliny.* Ευπατοριον *of Dioſcorides. From Eupator, the ſurname of Mithridates, who is ſuppoſed firſt to have brought a plant of this kind into uſe, as a medicine.*)

Engl. *Hemp-Agrimony.* Fr. *Eupatoire.*

Lin. gen. n. 935. *Reich.* 1015. *Schreb.* 1272. *Gærtn. t.* 166. *Tourn.* 259. *Vaill. A.G.* 1719. *Juſſ.* 178. *Dill. elth.* 114.

Claſſ. 19. 1. Syngeneſia Polygamia Æqualis.

Nat. order of *Compoſitæ Diſcoideæ.—Corymbiferæ.* Juſſ.

GENERIC CHARACTER.

Cal. *Common* oblong, imbricate: *ſcales* linear-lanceolate, upright, unequal.

Cor. *Compound* uniform, tubular; *corollets* hermaphrodite, equal.

Proper funnel-form: *border* five-cleft, ſpreading.

Stam. *Filaments* five, capillary, very ſhort. *Anthers* cylindric, tubular.

Pist. *Germ* very ſmall. *Style* filiform, very long, two-cleft almoſt to the germs, ſtraight. *Stigmas* ſlender.

Per. none. *Calyx* unchanged.

Seeds oblong. *Down* plumoſe, long. (Piloſe, only toothletted or ciliate. *G.*)

Rec. naked.

Obs. *Moſt of the ſpecies have a ſimple or hairy down. Some have a ſimple calyx.—It is difficult to diſtinguiſh this genus from* Chryſocoma *but by the calyx.*

ESSENTIAL CHARACTER.

Cal. imbricate, oblong. *Style* cloven half way, long. *Down* plumoſe. *Recept.* naked.

SPECIES.

* *Calyxes four-flowered.*

[1. Eupatorium Dalea. *Shrubby Hemp-Agrimony.*

Lin. ſpec. 1171. *Reich.* 3. 714. *Swartz obſ.* 298.

Dalea fruticoſa, &c. *Brown. jam.* 314. *t.* 34. *f.* 1. (good)

Leaves lanceolate, veined, obſcurely ſerrate, ſmooth, ſtem ſhrubby.

2. Eupatorium parviflorum.

Swartz prodr. 111.

Shrubby, leaves ovate-lanceolate ſerrate ſmooth, corymbs ſpreading, calyxes three-flowered.]

3. Eupatorium hyſſopifolium. *Hyſſop-leaved Hemp-Agrimony.*

Lin. ſpec. 1171. *Reich.* 3. 714. *Thunb. jap.* 307. *Dill. elth.* 141. *t.* 115. *f.* 140. *Mor. hiſt.*

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[l] Thunberg.

[m] Loureiro.

[n] Gærtner.

3. 98. 23. *Pluk. alm. t.* 88. *f.* 2. *Raii ſuppl.* 189. 27.

Leaves lanceolate-linear, three-nerved, almoſt entire.

4. Eupatorium ſcandens. *Climbing Hemp-Agrimony.*

Lin. ſpec. 1171. *ſyſt.* 735. *Reich.* 3. 714. *hort. cliff.* 396. *upſ.* 253. *Gron. virg.* 120. *Plum. ic.* 99. (Conyza) *Pluk. alm. t.* 163. *f.* 3.

Stem twining, leaves cordate-ovate, attenuated, crenate-toothed, lobes divaricate, branches ſmooth.

[5. Eupatorium volubile.

Vahl ſymb. 3. 93.

Leaves cordate-ovate, crenate, acute, lobes parallel, ſtem twining, branches and petioles villoſe.

6. Eupatorium denticulatum.

Vahl ſymb. 3. 93.

Leaves cordate rugged, minutely toothletted, branches angular.

7. Eupatorium amarum.

Vahl ſymb. 3. 93.

E. vincæfolium. *Lamarck encycl.* 2. *p.* 407.

E. parviflorum. *Aubl. guian.* 797. *t.* 315.

Leaves cordate-ovate, acuminate, quite entire, ſubtomentoſe underneath, flowers corymbed, ſtem climbing.]

8. Eupatorium Houſtoni. *Houſton's Hemp-Agrimony.*

Lin. ſpec. 1172. *Reich.* 3. 715. *hort. cliff.* 396. *Amm. herb.* 451. *Swartz obſ.* 300.

Stem twining, leaves ovate, quite entire.

* * *Calyxes five-flowered.*

[9. Eupatorium zeylanicum. *Ceylon Hemp-Agrimony.*

Lin. ſpec. 1172. *ſyſt.* 735. *Reich.* 3. 715. *fl. zeyl. n.* 306. *Burm. ind.* 176. *Mor. hiſt.* 3. 99. 29. *Burm. zeyl.* 52. *t.* 21. (Cacalia).

Leaves ovate-haſtate, petioled, toothed.

10. Eupatorium ſeſſilifolium. *Seſſile-leaved Hemp-Agrimony.*

Lin. ſpec. 1172. *Reich.* 3. 715. *hort. upſ.* 254. *Gron. virg.* 118. *Mor. hiſt.* 3. 98. 13. *Raii ſuppl.* 188. 20.

Leaves ſeſſile, ſtem-claſping, diſtinct, lanceolate.

11. Eupatorium album. *White Hemp-Agrimony.*

Lin. ſyſt. 735. *Reich.* 3. 716. *mant.* 111. *Thunb. jap.* 308.

Leaves lanceolate ſerrate, leaflets of the calyx lanceolate, ſcarioſe at the end, and coloured.

12. Eupatorium chinenſe. *Chineſe Hemp-Agrimony.*

Lin. ſpec. 1172. *Reich.* 3. 716. *Thunb. jap.* 308.

Leaves ovate, petioled, ſerrate.

13. Eupatorium japonicum. *Japoneſe Hemp-Agrimony.*

Lin. ſyſt. 737. *Thunb. jap.* 308.

Leaves undivided and three-lobed, ſerrate, ſtem ſcabrous.]

14. Eupatorium rotundifolium. *Round-leaved Hemp-Agrimony.*

Lin. ſpec. 1173. *Reich.* 3. 716. *Pluk. alm. t.* 88. *f.* 4. *Raii ſuppl.* 189. *Mor. hiſt.* 3. 94. 9. (Cacalia).

Leaves ſeſſile, diſtinct, roundiſh-cordate.

[15. Eupatorium ſtipulaceum.

Vahl ſymb. 3. 94.

Leaves haſtate, acute at both ends, three-nerved, ſtipuled, flowers corymbed, ſtem climbing.]

16. Eupatorium altiſſimum. *Tall Hemp-Agrimony.*

Lin. ſpec. 1173. *ſyſt.* 735. *Reich.* 3. 716. *Jacqu. hort.* 2. *t.* 164. *hort. upſ.* 253. *Gron. virg.* 118. *Mor. hiſt.* 3. 97. 5. *Raii ſuppl.* 187. 17.

Leaves lanceolate, nerved, the lower ones a little ſerrate on the outmoſt part; ſtem underſhrubby.

[17. Eupatorium haſtatum. *Haſtate-leaved Hemp-Agrimony.*

Lin. ſpec. 1172. *Reich.* 3. 717. *amœn.* 5. 405. *Swartz obſ.* 299.

Kleinia ſcandens, &c. *Brown. jam.* 316. *t.* 34. *f.* 3.

Leaves cordate-haſtate, ſomewhat toothed, naked, ſtem twining, flowers in ſpikes.

18. Eupatorium ſyriacum. *Syrian Hemp-Agrimony.*

Lin. ſyſt. 736. *Jacqu. miſc.* 2. 349. *Icon. rar. t.* 35.

Leaves oppoſite, ſubſeſſile, ternate.

19. Eupatorium trifidum.

Vahl ſymb. 3. 94.

Leaves three-parted, the floral ones undivided, ſtem climbing.]

20. Eupatorium trifoliatum. *Three-leaved Hemp-Agrimony.*

Lin. ſpec. 1173. *Reich.* 3. 717. *Gron. virg.* 119. 178. *Raii ſuppl.* 189. 29. *Krock. ſileſ. n.* 1360.

Leaves in threes.

21. Eupatorium cannabinum. *Common Hemp-Agrimony.*

Lin. ſpec. 1173. *Reich.* 3. 717. *hort. cliff.* 396. *fl. ſuec. n.* 728. *mat. med.* 181. *Hudſ. angl.* 356. *With.* 885. *Lightf.* 464. *Hall. helv. n.* 136. *Scop. carn. n.* 1054. *Leers herborn. n.* 633. *Neck. gallob.* 343. *Pollich. pal. n.* 777. *Allion. pedem. n.* 635. *Krock. ſileſ. n.* 1359. *Fl. dan. t.* 745. *Blackw. t.* 110. *Bauh. pin.* 320. *Park. theat.* 595. *Raii hiſt.* 293. *ſyn.* 179.—mas. *Ger. emac.* 711. 2.—adulterinum. *Bauh. hiſt.* 2. 1065. 2. *Fuchſ. hiſt.* 265. *Matth.* 1015. *Mor. hiſt.* 3. 97. *f.* 7. *t.* 13. *f.* 1.

β. E. cann. folio integro, ſeu non digitato. *Raii ſyn.* 180.

Leaves digitate.

* * * *Calyxes eight-flowered.*

[22. Eupatorium coriaceum.

Vahl ſymb. 3. 94.

Leaves elliptic, coriaceous, ſmooth, toothed on the outſide.

23. Eupatorium cinereum.

Lin. ſyſt. 736. *ſuppl.* 354.

Calyxes ſeven-flowered, leaves oppoſite, lanceolate, tomentoſe.]

24. Eupatorium purpureum. *Purple Hemp-Agrimony.*

Lin. ſpec. 1173. *Reich.* 3. 717. *Cold. noveb.* 180. *Gron. virg.* 119. *Corn. canad. t.* 72. *Mor. t.* 13. *f.* 4. *Lour. cochinch.* 487. *Gærtn. fruct.* 2. 401.

Leaves in fours, ſcabrous, lanceolate-ovate, unequally ſerrate, petioled, wrinkled.

[25. Eupatorium diffuſum.

Vahl ſymb. 94.

Leaves ovate, ſerrate, three-nerved, panicle very much branched and diffuſed.

26. Eupatorium nervoſum.

Swartz prodr. 111.

Leaves elliptic-lanceolate, attenuated, toothed, triple-nerved, ſmooth on both ſides, calyxes many-flowered.

27. Eupatorium rigidum.

Swartz prodr. 111.

Leaves petioled, ovate, acute, ſerrate-toothed, rigid, rugged underneath, ſtem ſubherbaceous.]

28. Eupatorium maculatum. *Spotted Hemp-Agrimony.*

Lin. ſpec. 1174. *ſyſt.* 736. *Reich.* 3. 718. *amœn.* 5. 288. *hort. cliff.* 396. *Herm. par. t.* 158. *Mor. t.* 18. *f.* 3. *Raii ſuppl.* 187. 15.

Leaves in fives, ſomewhat tomentoſe, lanceolate, equally ſerrate, veined, petioled.

[29. Eupatorium auriculatum.

Vahl ſymb. 3. 95. *t.* 72.

E. tomentoſum. *Lamarck encycl.* 2. 407.

Leaves ovate, toothletted, tomentoſe underneath, petioles eared, ſtem climbing, flowers in ſpikes.

30. Eupatorium molle.

Swartz prodr. 111. *Aubl. guian.* 800. 3. (Ageratum).

Leaves petioled, cordate, acute, ſubſerrate, pubeſcent, ſtem herbaceous, tomentoſe.

31. Eupatorium villoſum.

Swartz prodr. 111. *Vahl ſymb.* 3. 95. *Sloan. jam.* 1. 257. *t.* 161. *f.* 1. (Conyza).

Leaves oppoſite, decuſſated, ovate, ſubſerrate, beneath villoſe-tomentoſe, calyxes eight to fifteen-flowered, ſtem ſhrubby.

32. Eupatorium cordifolium.

Swartz prodr. 111.

Leaves cordate, ſerrate, tomentoſe-hirſute underneath, petioles very ſhort, corymbs ſubſeſſile, calyxes ſquarroſe, ſtem ſhrubby.

33. Eupatorium montanum.

Swartz prodr. 111.

Leaves cordate, acute, toothletted, petioled, rugged, hirſute underneath, corymbs much ſpreading, ſtem ſhrubby.

34. Eupatorium caneſcens.

Vahl ſymb. 3. 95. *t.* 73.

Hoary, leaves ovate, ſublobed and entire, underneath very ſoft and three-nerved, corymbs ſimple.

35. Eupatorium ſcabrum.
Lin. ſyſt. 736. *ſuppl.* 354. *Smith. ic. ined.* 3. *t.* 67.
Villoſe; leaves oppoſite, petioled, ovate, moſtly entire, wrinkled, ſcabrous on the upper ſurface.]

**** *Calyxes with fifteen or more floſcules.*

36. Eupatorium perfoliatum. *Perfoliate Hemp-Agrimony.*
Lin. ſpec. 1174. *Reich.* 3. 718. *hort. cliff.* 396. *upſ.* 253. *Gron. virg.* 119. *Cold. noveb.* 181. *Pluk. alm. t.* 87. *f.* 6. *Raii ſuppl.* 189. 28. *Mor. hiſt.* 3. 97. *n.* 6.
Leaves connate-perfoliate, tomentoſe.

37. Eupatorium cœleſtinum. *Blue-flowered Hemp-Agrimony.*
Lin. ſpec. 1174. *Reich.* 3. 718. *Gron. virg.* 94. 119. *Dill. elth.* 140. *t.* 114. *f.* 139. *Pluk. mant. t.* 394. *f.* 4.
Leaves cordate-ovate, obtuſely ſerrate, petioled, calyxes many-flowered.

[38. Eupatorium aromaticum. *Aromatic Hemp-Agrimony.*
Lin. ſpec. 1175. *Reich.* 3. 719. *Gron. virg.* 120, 177. *Pluk. alm. t.* 88. *f.* 3. *Mor. hiſt.* 3. 98. 18.
Leaves ovate, obtuſely ſerrate, petioled, three-nerved, calyxes ſimple.

39. Eupatorium macrophyllum.
Lin. ſpec. 1175. *Vahl ſymb.* 3. 95. *Plum. ſpec.* 10. *ic.* 129.
Leaves heart-ſhaped, three-nerved, ſerrate, underneath pubeſcent, ſtem alſo pubeſcent.

40. Eupatorium Ageratoides. *Nettle-leaved Hemp-Agrimony.*
Lin. ſyſt. 736. *ſuppl.* 355. *hort. upſ.* 254. *Gærtn. fruct.* 2. 401. *Mor. hiſt. ſ.* 7. *t.* 18. *f.* 11.
E. altiſſimum. *Lin. ſyſt. edit.* 13. 614.—not 613.
Ageratum altiſſimum. *Lin. ſpec.* 1176.
Cacalia americana. *Park. theat.* 1221. 3.
Leaves ovate, ſerrate, petioled, ſtem ſmooth.

41. Eupatorium conyzoides.
Vahl ſymb. 3. 96.
Leaves ovate, attenuated, ſharply ſerrate, three-nerved, ſmooth above, calyxes cloſely imbricate.]

42. Eupatorium odoratum. *Sweet-ſcented Hemp-Agrimony.*
Lin. ſpec. 1174. *Reich.* 3. 720. *amœn.* 5. 405. *Brown. jam.* 313. 2. *Pluk. phyt. t.* 177. *f.* 3. *Swartz obſ.* 300.
Leaves deltoid, toothed at bottom, tomentoſe underneath, calyxes many-flowered.

[43. Eupatorium triplinerve.
Vahl ſymb. 3. 97.
Leaves lanceolate, triple-nerved, quite entire, ſmooth.

44. Eupatorium ivæfolium.
Lin. ſpec. 1174. *Reich.* 3. 720. *amœn.* 5. 405. *Swartz obſ.* 301.
Leaves narrow-lanceolate, three-nerved, ſubſerrate, calyxes ſquarroſe, many-flowered.

45. Eupatorium urticæfolium. *Nettle-leaved Hemp-Agrimony.*
Lin. ſyſt. 736. *ſuppl.* 354. *Smith. ic. ined.* 3. *t.* 68.
Hiſpid; leaves petioled, cordate, gaſh-ſerrate, panicle terminating, calyxes many-flowered, awl-ſhaped, ſomewhat pungent.

46. Eupatorium ſtoechadifolium.
Lin. ſyſt. 736. *ſuppl.* 355. *Smith. ic. ined.* 3. *t.* 69.
Tomentoſe; leaves petioled, linear, crenate, hoary underneath; panicle terminating.

47. Eupatorium microphyllum.
Lin. ſyſt. 737. *ſuppl.* 355. *Smith. ic. ined.* 3. *t.* 70.
Leaves triangular-ovate, with nine notches, tomentoſe and veined underneath, panicle conglomerate, terminating, peduncle elongated.

48. Eupatorium ſquarroſum.
Cavan. ic. hiſp. 66. *n.* 107. *t.* 98.
Leaves ſubcordate, ovate-acute, ſerrate, calyxes ſquarroſe.

49. Eupatorium ſinuatum.
Lour. cochinch. 487.
Leaves ovate, ſinuate, hairy, alternate, calyxes eight-flowered, or thereabouts.

DESCRIPTIONS, *&c.*

Theſe are moſtly tall-growing perennial herbaceous plants; the greater part of the old ſorts are natives of North America; many, however, of South America and the Weſt Indies; whence come moſt of the new ſorts: ſeveral are found wild in the Eaſt-Indies, and one only in Europe. The two firſt and a few other ſpecies are ſhrubby. Some have weak ſtems, and ſupport themſelves by twining. The leaves in moſt of the ſpecies are oppoſite; but in a few they are verticilled or alternate. The flowers are moſt frequently in corymbs at the ends of the ſtem and branches, or elſe axillary; the predominant colour of the corolla is purple; ſome, however, are white.

1. This riſes to the height of nine and ten feet or more: it has a moderately thick woody ſtem; and throws out its branches in a pretty open poſition[a]. This ſhrub is frequent in the lower hills of Liguanea, in Jamaica.

Dr. Patrick Browne thought it generically diſtinct from *Eupatorium*, and therefore gave it the name of *Dalea*.

It flowers here in auguſt; and was introduced in 1773, by Monſ. Richard[b].

Swartz deſcribes this ſhrub as a fathom in height, with a branched even ſtem, and long ſmoother branches. Leaves oppoſite and decuſſated, broad-lanceolate, four or five inches long, ſhining, on petioles of a middling length. Corymbs terminating; branchlets oppoſite, decuſſated, ſubfaſtigiate, divided again, two or three-parted, the laſt three or four-flowered. Flowers whitiſh. Calyx ſix or eight-leaved, conical, ſmall. Corollets commonly four, ſeldom three. Stigmas reflex, cirrhoſe. Seeds conical-cordate, crowned with a feathered egret. This is remarkable for the very pleaſant odour of the whole plant, which continues many years even when dried.

2. This much reſembles the preceding, but the leaves are oblong, the flowers ſmaller; the calyxes conſtantly three-flowered, and the plant is almoſt void of ſcent. Native of Jamaica, much more common than the preceding in ſimilar ſituations[c].]

3. The third ſort riſes with an upright round ſtalk to the height of three feet, ſending out ſeveral branches towards the top, which come out regularly by pairs. The leaves are alſo in pairs, they are two inches and a half long, and about one third of an inch broad, of a light green colour, and entire. The flowers ſtand upon long peduncles at the ends of the branches, ſome ſuſtaining one, ſome two, and others three or four flowers; they are white, and appear late in autumn. Native of Carolina, Virginia and Maryland.

[It has alſo been found in Japan by Thunberg. Cultivated in the Chelſea garden before 1699.]

4. Stems annual, twiſting about any neighbouring ſupport to the height of five or ſix feet. At each joint two ſmall ſide-branches come out, terminated by cluſters of white flowers, ſo that the ſtalks ſeem covered with them moſt part of their length; but as theſe come out late in the ſeaſon, unleſs the ſummer prove warm, this plant does not flower well in England. Native of Virginia and Carolina.

[It is alſo ſuppoſed to be a native of the Eaſt-Indies, and to be the ſame with that which is figured by Burman *ind.* 176. *t.* 58. *f.* 2.—The Indian plant is ſmoother, and the teeth of the leaves more obſcure[d]. Cultivated in 1714[e].

5. This differs from the preceding in having the branches, petioles, nerves of the leaves underneath, and peduncles villoſe, the leaves leſs attenuated, with the lobes not divaricated, but parallel, the egret purpliſh, but not hoary. Native of the Eaſt-Indies.—There is another Eupatorium from Madagaſcar in every reſpect like this, except that it is entirely ſmooth.

6. Stem climbing: the branches have five acute

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[a] Browne.
[b] Hort. kew.
[c] Swartz.
[d] Linn. ſyſt.
[e] Hort. kew. from Philoſ. tranſ.

angles, ſtanding out. Leaves petioled, two inches long, bluntiſh, paler underneath, very finely and thinly haired, ſometimes not toothed. Corymbs terminating the branches and branchlets: pedicels umbelled, filiform, rugged, angular. Calyx four-leaved; *leaflets* linear, equal, ſhorter than the egret, which is purpliſh. Native of Surinam.

7. Branches the thickneſs of a ſwan's quill, ſmooth, ſtriated; branchlets axillary, a hand in length, flower-bearing. Leaves petioled, three inches in length and breadth, ſmooth and nerved above, beneath ſlightly tomentoſe, with ſtellate hairs, viſible only with a magnifier, and having veins ſtanding out; the leaves on the branchlets are an inch long, and become gradually ſmaller towards the top. Corymbs from the extreme axils of the leaves on the branchlets, and from the end. Peduncles oppoſite, angular; the partial ones umbelled, in fives, ancipital, broader at top: pedicels in threes, three-flowered; flowers ſeſſile: at the baſe of the partial peduncles and flowers a pair of linear leaves. Calyx four-leaved; leaflets ſtriated, two more tender than the others. Seeds four, angular. Egret longer than the calyx, purpliſh. Found in the Caribbee iſlands by Martfelt, and in Surinam by Rolander[f].]

8. Stalks ſlender, twining, eight or ten feet high, ſending out ſmall oppoſite branches at moſt of the upper joints. Lower leaves heart-ſhaped, ending in acute points; upper almoſt triangular, ſmooth, and of a lucid green. The upper part of the ſtalks has long branching ſtalks of white flowers, which are ſmall and ſeſſile. It was ſent to Mr. Miller from Jamaica by Dr. Houſtoun.

[9. Leaves alternate, narrower at the baſe, with ſmall rounded ears bent in, green and ſmooth on the upper ſurface, tomentoſe and veined on the lower like Sage. The corymbs of flowers reſemble thoſe of the *Eupatoriums*[g]: the fructification, however, wants to be examined more critically[h]. Native of Ceylon.

10. Stems ſlender, round, ſmooth. Leaves in pairs, at two inches diſtance, ſeſſile, two inches long, mucronate, reſembling thoſe of Mint, ſlightly toothed on the edge. Flowers terminating, corymbed, in many little heads, white, ſlender. Native of Virginia; whence it was ſent to Bobart by the Rev. John Baniſter. Introduced in 1777, by Monſ. Thouin. It flowers in ſeptember and october.

11. Stem erect, ſtreaked, ſcarcely pubeſcent. Leaves oppoſite, ſubſeſſile, almoſt naked. Corymb terminating, compoſed of alternate, ſubdivided branchlets, faſtigiate and white. Down ſimple. Flowers like thoſe of *Calca oppoſitifolia*[i]. Found in Penſylvania by Bartram. Alſo in Japan by Thunberg, who deſcribes the ſtem as round, villoſe, ſpotted with purple, and branched. The branches nearly oppoſite, decuſſated and patulous. The leaves ovate-oblong, ſharp, pubeſcent, an inch or more in length.

12. Stem ſomewhat angular, flexuoſe-erect, ſmooth, but little branched, a foot high or more. Leaves oppoſite, ſharp, entire at the baſe, pale underneath, nerved, ſmooth, ſpreading, an inch and more in length. Flowers in a faſtigiate and roundiſh panicle[k]. Native of China and Japan.

13. Stem round, ſtreaked, erect, branched, two feet and upwards in height. Branches alternate, panicled, from erect-patulous, like the ſtem. Leaves oppoſite, petioled, the lower three-lobed, the upper undivided, ovate, ſharp, unequally ſerrate, ſometimes entire, paler underneath, nerved, ſcabrous, a finger's length, the upper ones gradually leſs. Petioles half an inch in length. Flowers on the branches and branchlets terminating, in ovate panicles, on very ſhort peduncles.——Native of Japan[l].]

14. This riſes with upright ſtalks about a foot high: the joints are near each other, and at every joint is a pair of leaves, of a light green colour, and ſerrate. The flowers are produced in ſmall looſe panicles at the tops of the ſtalks; they are white, and have two ſmall leaves immediately under them The flowers appear at the end of june, but the ſeeds ſeldom ripen in England. Native of New-England and Virginia.

[This was cultivated in 1731, by Mr. Miller[m].

15. Stem very ſmooth, and very finely ſtreaked. Leaves an inch and half or more in length, mucronate, acuminate at the baſe, veined, very ſmooth above, beneath appearing very ſlightly villoſe with a magnifier; lobes ovate, acute, oblique behind, having frequently one or two minute teeth. Petiole ſhorter than the leaf. Stipules two on each ſide, wedge-ſhaped, mucronate. Corymbs axillary and terminating, compound, peduncled: having two leaves of the ſame ſtructure with thoſe on the ſtem under the partial peduncles; which are in threes, trifid and many-flowered: pedicels capillary, with a briſtle-ſhaped bracte towards the flower. Calyx ſimple, ſmooth, with four linear leaflets. Corollets four. Seeds the length of the calyx, with a purpliſh egret. Native of Braſil[n].]

16. This riſes with a ſingle upright green ſtalk, about four feet high. At each joint are four leaves in whorls; they are ſix inches long, and two inches broad in the middle, leſſening to both ends, terminating in acute points, rough, ſerrate, and on ſhort foot-ſtalks. Stem terminated by a cloſe corymb of purple flowers, appearing in july, and continuing till ſeptember. Native of North America.

[Cultivated in 1768, by Mr. Miller[o]; and probably in the laſt century at Oxford[p].

17. Stem ſhrubby, branched, ſtriated, pubeſcent. Leaves petioled, oppoſite; petioles alſo pubeſcent. Racemes axillary, oppoſite: flowers ſpiked in whorls, four in a whorl, white. Calyx four-leaved; leaflets lanceolate-ovate, convex. Corollets four. Stamens extremely minute. Style longer. Egret briſtly, with the briſtles very minutely ſerrate. The flowers ſmell like thoſe of Cacalia ſuaveolens; the taſte of the whole herb is bitter[q].

This is a climber, and ſtretches a great way among the neighbouring buſhes. It is frequent about St. Thomas's in the Eaſt, and Manganeel, in Jamaica[r].

18. Stems ſtraight, round, four or five feet high, purpliſh, ſtriated: branchlets come out at a right angle almoſt over the whole ſtem. Leaves obſcurely villoſe on both ſides: leaflets ſubſeſſile, lanceolate, acute, ſometimes gaſhed a little, the ſide ones ſmaller, frequently on the branches very ſmall. Flowers in compound erect corymbs. Calyx five-leaved, five-flowered; leaflets oblong, obtuſe, channelled, ciliate. Corollets purple, three times as long as the calyx. Egret ſeſſile, white, hairy, with little prickles, apparent only to the magnifier. Flavour unpleaſant and bitteriſh. It flowers in october[s].

19. Stem very finely ſtriated, ſcarcely pubeſcent. Leaves petioled, alternate; the parts lanceolate, attenuated, ſerrate on the outſide, ſmooth; the upper ones undivided, lanceolate, quite entire. Corymbs from the upper axils, and at the top, on long peduncles, compound: partial peduncles and pedicels ſubpubeſcent. Calyxes ſmooth, five-flowered: leaflets ſmooth, about ten, linear, the five outer ones very ſhort. Native of the Caribbee iſlands[t].]

20. Stems upright, in a moiſt ſoil ſeven or eight feet high. Leaves oval, rough, lanceolate, a little ſerrate, in whorls of four, five or ſeven at each joint, three inches long, and two broad. The ſtems are terminated by a looſe corymb of purple flowers, which appear in auguſt, and continue till october, but are not ſucceeded by ſeeds in England.

[The leaves are ſhaped like thoſe of the Sunflower, but are many times ſmaller. Stem ſlender, cylindric, rigid, hairy on the upper part. Flowers very ſmall, as in the other ſpecies, but they have not the calyxes ſo long, nor are they ſo exactly diſpoſed in umbels (corymbs), but rather like the common Red Valerian[u]. Gronovius found it in Virginia; Vernon brought it from Mariland; Miller ſays that it grows in Penſylvania; Krocker relates that it is found in Sileſia, and that it is like our common European ſort, except in having leaves in threes, and white flowers. Miller's can hardly be Linneus's plant.

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[f] Vahl.
[g] Linn. zeyl.
[h] Linn. ſyſt.
[i] Linn. mant.
[k] Thunberg.
[l] Ibid.
[m] Hort. kew.
[n] Vahl.
[o] Hort. kew.
[p] Moriſon.
[q] Swartz.
[r] Browne.
[s] Jacquin.
[t] Vahl.

21. Stems three or four, and even ſix feet high, hairy, reddiſh, branched. Leaflets three or five, lanceolate, ſharply ſerrate on the ſides, entire at the baſe and top, ſlightly hairy; the middle one much larger than the others. Scales of the calyx few, not more than ten, unequal, linear, red on the edge, a little hairy. Flowers in thick umbels or corymbs at the top of the ſtem or branches. Florets five, and ſometimes ſix together, of a pale red or purple colour. Seeds black, ſtreaked, ſmooth, little more than a line in length. Egret ſeſſile, with ſimple rays, not three lines long: the rays, when viewed with a glaſs, are finely toothed[x], or ſhortly ciliate. The ſtem has a pleaſant aromatic ſmell, when cut[y]. The flowers have a ſtrong ſmell[z]. The whole plant has a very bitter taſte: a handful of it vomits and purges ſmartly. An ounce of the root in decoction is a full doſe; and is ſometimes taken in the jaundice, dropſy, &c. but it is a rough medicine, and ought to be uſed with caution. Boerhaave gave an infuſion of this plant to foment ulcers and putrid ſores. Tournefort informs us, that the Turks cure the ſcurvy with it.—Of all cattle goats alone ſeem to eat it[a].

On the banks both of running and ſtagnant waters, frequently in moſt parts of Europe; flowering in july and auguſt. In Johnſon's edition of Gerarde it is named *Common Dutch Agrimony.*

β. Is the ſeedling plant, and has oval-lanceolate leaves; it ſometimes flowers in that ſtate, but not often: the ſecond year it bears leaves in threes[b].

Profeſſor John Martyn found this variety with ſimple leaves, but forgot the place. Dillenius met with it afterwards before you come to Lee in the road to Eltham[c]. Mr. Woodward has ſince obſerved it near Bungay in Suffolk.

22. Leaves four inches long, mucronate, with oppoſite nerves, with thice remote teeth on each ſide. Petioles an inch long, dilated at the baſe. Corymbs terminating, ſuperdecompound. Common peduncle pubeſcent: pedicels having minute ſcales ſcattered on them towards the baſe. Calyx ſeven-flowered; the outer ſcales ovate, ſhorter; the inner longer, linear. Egret purpliſh, twice as long as the calyx, almoſt ſimple. Suppoſed to be a native of South America[d].

23. This very much reſembles an *Athanaſia* in its flowers and woody rigid ſtem. Thunberg found it at the Cape of Good Hope[e].

24. Stem cylindric, green, but purpliſh at the baſe of the petioles. Leaves in fours or fives, green on both ſides. Corymb terminating. Calyxes fleſh-coloured. Corollas whitiſh. Anthers purple. Styles very long[f]. It grows to the height of three feet or more, with a ſuffruticoſe, upright, ſtriated ſtem, but little branched. The leaves are ſubſeſſile, and of a very dark green. The corymb of flowers is faſtigiate. The calyx has about eight flowers[g]. The receptacle is narrow, convex, ſcrobiculate, ſmooth. The ſeeds are ſmall, four-cornered-columnar, acuminate at the baſe, with the ſtreaks and angles rugged with dots, and whitiſh, the interſtices ſmooth and livid. Egret capillary, very minutely toothletted[h]. Native of North America and Cochinchina.

Cultivated in 1731, by Mr. Miller[i].

25. The whole plant is ſmooth. Leaves petioled, oppoſite, ſharp at both ends. Panicle terminating, large, a foot long: the laſt pedicels capillary: at all the ramifications oppoſite, narrow leaves, becoming gradually ſmaller. Calycine leaflets lanceolate, the outer ones ſhorter. Corollets eight. Egret white, the length of the calyx. Native of South America[k].

26, 27. Natives of Jamaica[l].]

28. Stem annual, about two feet and a half high, purple, with many dark ſpots upon it. Leaves rough, placed by threes towards the bottom of the ſtalk, but near the top by pairs at each joint. Flowers purple, terminating in a ſort of corymb, appearing in july and auguſt, and in warm ſeaſons ripening the ſeeds in autumn. [Egret ſimple or capillary[m]. Native of North America; and cultivated here in 1656, by Mr. John Tradeſcant, jun.[n].

29. Stem woody: branches ſtriated, tomentoſe-hoary, becoming bald with age. Leaves alternate, two inches long or leſs, remote, acute, minutely toothletted, except the uppermoſt, which are quite entire, the upper ſurface ſmooth, five-nerved or thereabouts, ſomewhat dotted, hoary, ſimply veined. Petioles tomentoſe, half an inch in length, with a half-ovate, tomentoſe earlet at the baſe on each ſide; the laſt floral leaves having only a rudiment of theſe. Spike compound, flexuoſe, axillary and terminating. Spikelets alternate. Flowers uſually in pairs, diſtant; in the axils of the branches of the ſpike ſingle. Calyx ſmooth, with eight linear leaflets, of a brown ferruginous colour; and at the baſe a few minute tomentoſe ſcales. Corollets ſeven. Style longer by half than the corollet. Egret a little longer than the calyx, white, when magnified appearing ſerrate. Native of Braſil[o].

30. Native of Guiana, Jamaica, &c. Annual[p].

31. Branches ſoftly villoſe. Leaves petioled, an inch and half in length or ſmaller, a little attenuated, either quite entire or ſlightly ſerrate, bluntiſh, three-nerved, the younger ones villoſe on both ſides, the lower ones ſmooth on the upper ſurface, and ſomewhat rugged. Corymbs terminating, decompound. Peduncles and pedicels villoſe-tomentoſe. At the ramifications ſhort, briſtle-ſhaped leaves. Calycine leaflets linear, pubeſcent. Corollets ſmall, as far as ſixteen. Seeds the length of the calyx, with a dirty-coloured egret, longer than the calyx[q]. Native of Jamaica and Domingo[r].

32, 33. Natives of Jamaica[s].

34. This is a branching ſhrub; the branches having an aſh-coloured bark: branchlets oppoſite, brachiate, ſpreading, hoary and very ſoft, as are alſo the tops of the branches. Leaves petioled, oppoſite, on the branches an inch long, very blunt, ſublobed, with one or two large notches, greener above, hoary and ſofter beneath; on the branchlets half an inch in length, gradually ſmaller towards the top; the lower ones obſcurely lobed, the upper ones entire, hoary and ſoft on both ſides; all having nerves which are more conſpicuous underneath, often obſcurely veined, but more generally veinleſs. Corymbs from the ends of the branches and branchlets, few-flowered. Calyx cylindrical, ſubvilloſe: leaflets linear, obtuſe, with pale ſtreaks, the outer ones ſhorter. Florets ten. Seed black, when magnified appearing angular, with minute villoſe hairs ſcattered over it. Obſerved in the iſland of Santa Cruz by Pflug and Weſt[t].

35. The ſtem ſeems to be underſhrubby; it is upright, branched, roundiſh, ſtreaked, villoſe-ſcabrous, leafy, many-flowered. Branchlets oppoſite, angular, bearing flowers at the end. Leaves oppoſite, on ſhort petioles, from erect ſpreading, acuminate, ſubſerrate, very ſeldom entire, viſcid, uſually three-nerved, rough, with hairs on the upper ſurface, and very ſcabrous on the lower. No ſtipules. Panicles terminating, upright, rough with hairs, many-flowered, contracted. Peduncles oppoſite. Pedicels moſtly alternate. Bractes lanceolate, rough with hairs. Flowers upright. Calyx cylindric, ſmooth; ſcales oblong, obtuſe, three-nerved, ſome-

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[u] Ray. [x] Woodw. Mſs. Withering, Lightfoot. [y] Ray. [z] Krocker. [a] Lightf. & With. [b] Woodw. Mſs. [c] Tourn. par. edit. angl. [d] Vahl. [e] Linn. ſuppl. [f] Linn. ſpec. [g] Loureiro. [h] Gærtner. [i] Hort. kew.

[k] Vahl. [l] Swartz. [m] Linn. [n] Hort. kew. [o] Vahl. [p] Swartz. [q] Vahl. [r] Swartz. [s] Ibid. [t] Vahl.

what callous at the tip, the outer ones ſhorter and broader. Florets ſeven or eight, ſcarcely longer than the calyx, five-ſided: Seeds black; with a down ſcarcely the length of the corolla, ſerrate, hardly feathered, ſpreading.—Gathered by Mutis in New Granada[u].]

36. Stems annual, from two to three feet high, hairy. Leaves at each joint rough, from three to four inches long, and about an inch broad at their baſe, gradually leſſening to a very acute point, dark green, and covered with ſhort hairs. The upper part of the ſtalk divides into many ſlender peduncles, each ſuſtaining a cloſe cluſter of white flowers, coming out in july. In warm ſeaſons the ſeeds will ſometimes ripen in England. Native of North America.

[Cultivated in the botanic garden in Chelſea in 1699[x].]

37. This has a creeping root, which ſpreads and multiplies very faſt. The ſtalks riſe about two feet high. The flowers are produced at the top of the ſtalks in a ſort of corymb, and are of a fine blue colour.

[Dr. Dale ſent the ſeeds from Carolina to Mr. Miller; and it was alſo cultivated in 1732 in the Eltham garden. Petiver and Plukenet received it from Maryland.

38. Stem round, four feet high, ſtrict, brachiate, having the appearance of *Scutellaria*. Leaves ſomewhat wrinkled. Racemes terminating. Flowers twice the length of the calyx, ſnow-white, containing from eighteen to twenty-eight florets, the ſtyles ſcarcely longer than the floret: in this circumſtance it differs from the other ſpecies, and in having the calyx not imbricate, but the leaflets almoſt equal: thus it approaches to *Ageratum*; but it has a true down to the ſeeds.—Native of Virginia[y].—Cultivated in 1758, by Mr. Miller[z].]

39. Stem the thickneſs of a Swan's quill, ſtriated, pubeſcent. Branches axillary, from erect-ſpreading. Leaves oppoſite, large, ſmooth above, except the veins, pubeſcent and paler underneath, veined, bluntly ſerrate, ſharp at the end; the uppermoſt frequently alternate. Petioles from two to three inches in length. Corymbs terminating and axillary, peduncled, decompound, cloſe. Calyx looſely imbricate; the leaflets lanceolate, pale green, very finely ſtreaked. Native of the Caribbee iſlands[a].]

40. Stems annual, five or ſix feet high, towards the top putting out ſide branches. At the ends of the ſhoots the flowers are produced in large tufts, and are of a pure white; they appear in october. [Calycine ſcales linear-acuminate. Receptacle convex, ſcrobicular, ſmooth. Seeds oblong, four-cornered, ſtriated, ſmooth, pale, remarkably attenuated at the baſe. Egret capillary[b]. Native of North America.

Introduced before 1640, by John Tradeſcant, ſen.[c]

41. Branches ſtriated, pubeſcent. Leaves acuminate, ſcarcely pubeſcent underneath, an inch and half in length. Corymb terminating, almoſt ſimple, few-flowered: partial peduncles three-flowered; pedicels one-flowered. Calyx as in E. odoratum, but larger, cylindric, a little broader at top: leaflets linear, pale, with rounded brown tips. Suppoſed to be a native of South America[d].

42. Stem a fathom in height, ſhrubby, branched, even. Leaves oppoſite, petioled, three-nerved, dotted. Flowers terminating, ſubcorymbed, white. Seeds linear, ſlightly compreſſed, with a capillary egret[e].

This weakly ſhrubby plant is generally obſerved to grow among other buſhes, where it frequently caſts its long, ſlender, flexile, oppoſite branches to a moderate diſtance. The flowers are ſometimes impregnated with a ſmell perfectly like that of the European Meadow-ſweet. It is very frequent in the lower hills of Jamaica[f].—Introduced in 1780, by William Wright, M.D. It flowers in auguſt and ſeptember[g].

43. Stem round, ſmooth, very finely ſtreaked; branches ſpreading, flower-bearing. Leaves oppoſite, attenuated at the baſe, ſubſeſſile, from two to three inches in length, veined. Panicle terminating, ſubtrichotomous: partial peduncles ſcarcely pubeſcent: the laſt pedicels an inch long, filiform; with a minute leaf at the baſe of each. Calyx many-leaved; leaflets linear, nearly equal, acute, villoſe and purpliſh at the tip, the outmoſt ſhorter. Florets more than twenty, purple at top. Stigmas half as long again as the corollets. Egret whitiſh, the length of the calyx. Sent from the iſland of Santa Cruz by Pflug[h].

44. Stem ſubherbaceous, two feet high, erect, ſtrict, branched, hiſpid: branches ſimple, elongated. Leaves petioled, oppoſite, ſomewhat rugged; lower ones lanceolate, longer, ſpreading. Peduncles terminating, and in the axils of the upper leaves, oppoſite, filiform, moſtly trichotomous, but the laſt one-flowered. Flowers ſmall, blue. Common in Jamaica[i].

45. This at firſt ſight is very much like a nettle, but the leaves are three-nerved at the baſe, as in *Scrophularia nodoſa*, *Arctium Lappa*, &c.—Stem upright, branched, round, ſtreaked, hairy, leafy. Leaves oppoſite, ſpreading very much, bluntiſh, deeply and irregularly ſerrate, veined, hiſpid, with hairs on both ſides, paler underneath. Petioles ſcarcely the length of the leaves, angular, equal. No ſtipules. Panicle like a cyme, upright, hairy. Pedicels alternate or crowded. Bractes linear, few. Flowers upright, pale purple. Calyx ſubcylindric, patulous, pubeſcent; ſcales keeled, three-nerved, attenuated at the edge; the outer ones ſmaller. Floſcules little longer than the calyx. Seeds black. Down ſhorter than the corolla; viewed with a glaſs appearing to be minutely ſerrate.

46. Stem upright, roundiſh, covered with a ſoft, thick, white down. Leaves oppoſite, on ſhort petioles, ſpreading, blunt, flat, marked with one nerve, but with numerous little veins, divaricate, alternate; the upper ſurface green, with a ſoft down, the lower white, with a cloſe wool, as are alſo the ſtem and petioles. No ſtipules. Panicles upright, ſomewhat like corymbs, conglomerate. Peduncles oppoſite, variouſly divided, woolly. Bractes none, except a pair of leaves ſmaller than the reſt, at the baſe of each panicle. Flowers purple. Calyx cylindric, woolly at the baſe: ſcales ſharp, with a green line along them, membranaceous and ciliate about the edge; the inner ones ſomewhat tongue-ſhaped, the outer lanceolate and ſmaller. Floſcules very numerous, the length of the calyx, a little ſwelling, five-ſided; ſegments from erect ſpreading, ſharpiſh, quite entire, ſcarcely pubeſcent. Anthers included. Style ſcarcely half-cleft. Down ſhorter than the corolla, yellowiſh, ſcabrous.

47. Stem underſhrubby, woody, aſcending, a little branched, leafy, round, ſubhirſute. Leaves oppoſite, ſpreading, petioled, ſmall, blunt, with the edge rolled back, having four (ſeldom three or five) notches on each ſide, and one at the end; ſtiffiſh, thickiſh; green and ſmooth on the upper ſurface, woolly, white, and veined like a net on the under. Petioles the length of the leaves, hairy. No ſtipules. Panicle on a long peduncle, reſembling a corymb. Pedicels variouſly divided, rough-haired. Bractes two at the firſt ramification of the panicle, uſually lanceolate, but ſometimes of the ſame form with the leaves. Flowers purple, fewer than in the foregoing. Calyx ſubcylindric, ſcarcely pubeſcent at the baſe; all the ſcales lanceolate, ſharp, nerved, attenuated and ciliate at the edge; the outer ones ſmaller and thicker. Floſcules ſcarcely the length of the calyx, ſwelling at top, not angular; ſegments from erect ſpreading, bluntiſh, entire, cloſely pubeſcent on the outſide. Anthers included. Style ſcarcely half-cleft. Seeds brown. Egret almoſt the

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[u] Smith.
[x] Hort. kew. from Moriſon.
[y] Linn. ſpec.
[z] Hort. kew.
[a] Vahl.
[b] Gærtner.
[c] Hort. kew.
[d] Vahl.
[e] Swartz.
[f] Browne.
[g] Hort. kew.
[h] Vahl.
[i] Swartz.

length of the corolla, hardly rugged when viewed through a glaſs. The flowers reſemble thoſe of the preceding in ſtructure, but differ in ſeveral characters. Theſe three ſpecies were found in New Granada by Mutis[k].

48. Stems a fathom in height, round, ſubtomentoſe, with oppoſite branches. Leaves oppoſite, deep green above, beneath paler, ſomewhat tomentoſe. Flowers in racemes, on axillary three-flowered peduncles. Calyx cylindric, with many lanceolate-acute, ſtriated leaflets, the outer ones reflex at the tip, and containing about twenty-four florets. Corolla twice as long as the calyx: florets greeniſh-yellow, with ſhort, ovate-acute, patulous ſegments. Seeds ſmall, oblong, ſtriated, with very ſmall hairs. Egret ſeſſile, obſcurely feathered, ſhorter than the corolla. Native of Mexico. Flowering in the month of march in the royal garden near Madrid, before 1791[l].

49. Stem ſuffruticoſe, three feet high, erect, hiſpid. Leaves toothletted. Flowers purpliſh, in terminating panicles. Receptacle concave. Native of the iſland of Mozambique on the coaſt of Africa[m]. This belongs to the third ſection with eight-flowered calyxes.]

Beſides theſe, Miller has five ſorts, which were ſent him from La Vera Cruz by Dr. Houſtoun.

1. Eupatorium fruticoſum, n. 6. with oblong-cordate leaves, flowers in panicles, ſtem ſhrubby climbing.—It riſes to the height of ten or twelve feet: the leaves are oppoſite, about three inches long, and an inch and half broad, of a lucid green: the panicles are long and branching, and proceed from the ſide of the ſtalks: the flowers are white.

2. Eupatorium betonicifolium, n. 9. with oblong blunt crenate ſmooth leaves, and ſimple calyxes.—It riſes with an upright ſtem near two feet high, having towards the bottom leaves of a thick ſubſtance; from the upper part, which is naked, the flowers come out in a thick panicle; their colour is blue, and they come out late in autumn. The root is biennial.

3. Eupatorium morifolium, n. 10. with heart-ſhaped ſerrate leaves, and an upright tree-like ſtem. This riſes twelve or fourteen feet high, ſending out many channelled branches, covered with a brown bark. Leaves as large as thoſe of the mulberry-tree, of a light-green colour, oppoſite, on petioles near two inches long. Branches terminated by four or five pairs of peduncles, which come out oppoſite from the joints; there is alſo an odd one at the end; theſe ſuſtain branching panicles of white flowers, forming a long, looſe, pyramidal thyrſe, without any leaves intermixed, and making a fine appearance.

4. Eupatorium punctatum, n. 11. with ovate petioled entire leaves, ſtem ſhrubby branching, calyxes ſimple.—Stems near five feet high, dividing into many ſlender branches, the joints of which are three or four inches aſunder; at each of theſe is a pair of leaves, about three quarters of an inch long, and half an inch broad, having ſeveral black ſpots on their ſurface, and upon long ſlender foot-ſtalks: the branches are horizontal, terminated by ſmall bunches of white flowers. The calyxes are compoſed of ſeven narrow-lanceolate leaflets, divided to the bottom.

5. Eupatorium paniculatum, n. 15. with heart-ſhaped wrinkled crenate leaves, and a panicled ſtem.—This riſes with an upright branching ſtem three feet high, ſending out two ſide branches from every joint, almoſt the whole length; theſe are terminated by looſe ſpikes of red flowers, as is alſo the principal ſtem. The leaves are rough, ſeſſile, of a light green, and a little hoary.

Eupatorium conyzoides, n. 14. may probably be the ſame with Kuhnia conyzoides of Linneus.

PROPAGATION AND CULTURE.

The North American ſorts (n. 3, 4, 10, 11, 14, 16, 20, 24, 28, 36, 37, 38, 40.) being hardy plants the ſeeds may be ſown in the full ground, but there muſt be care taken in the ſowing to keep the ſorts ſeparate; for as the ſeeds of theſe plants have a light down adhering to them, they are eaſily diſplaced by the leaſt wind; ſo that the beſt way will be to ſow them in drills, but theſe ſhould be but ſhallow, for if the ſeeds are buried too deep they will not grow. The bed in which theſe are ſown ſhould not be too much expoſed to the ſun, but rather have an eaſt aſpect, where the morning ſun only reaches it; but where it is more expoſed, it ſhould be ſhaded with mats in the heat of the day, and the ground ſhould be kept pretty moiſt; for as theſe plants generally grow in moiſt ſhady ſituations in their native countries, they will ſucceed better when they have a ſoil and ſituation ſomewhat like that; though as we want their heat in ſummer, the plants will thrive here when expoſed to the ſun, provided they have a moiſt ſoil, or are ſupplied with water in dry weather.

When the young plants come up, they muſt be kept clean from weeds; and where they are too cloſe, ſome of them ſhould be drawn out, to give room for the others to grow; and if theſe are wanted, they may be planted in another bed, where, if they are ſhaded and watered, they will ſoon take root; after which they will require no farther care but to keep them clean from weeds till the following autumn, when they may be tranſplanted to the places where they are to remain. As the roots of theſe plants ſpread out to a conſiderable diſtance, they ſhould not be allowed leſs than three feet from any other plants, and ſome of the largeſt growing ſhould be allowed four feet. If the ſoil in which they are planted is a ſoft gentle loam, they will thrive much better, and flower ſtronger than in light dry ground; in which, if they are not duly watered in dry ſummers, their leaves will ſhrink, and their ſtalks will not grow to half their uſual height.

All theſe ſorts have perennial roots, by which they may be propagated; and as ſome of them do not perfect their ſeeds in England, that is the only way of increaſing the plants here; ſome of the ſorts have creeping roots, ſending out offsets in great plenty, ſo theſe are eaſily propagated; and the others may be taken up, or the heads taken off from them every other year, in doing of which there ſhould be care taken not to cut or injure the old plants too much, which would cauſe them to flower weak the following year. The beſt time to remove theſe plants is in autumn, as ſoon as they have done growing, that they may get freſh roots before the froſt comes on; but if that ſhould happen ſoon after their removal, if the ſurface of the ground is covered with tan, or dried leaves, to keep out the froſt, it will effectually ſecure them; and if this is done to the old plants in very ſevere winters, it will always preſerve them; however, it may not be amiſs to practiſe this on the young ſeedling plants, which have not ſo good roots, nor are ſo well eſtabliſhed in the ground; the future culture will be only to dig the ground about them every ſpring, and keep them clean.

The fourth ſort however is ſometimes killed in very ſevere weather, if not covered; when the ſtalks therefore decay in autumn, the ground ſhould be covered with ſome old tanner's bark. It multiplies very faſt by its creeping roots, which may be parted every other year.

The European ſort, (n. 21.) is ſeldom admitted into gardens, becauſe it is very common by water ſides; and wherever it is ſuffered to ſeed, the ground will be well ſtored with the plants to a great diſtance.

Thoſe which are natives of the Weſt Indies, and other hot countries (n. 1, 2, 5, 6, 7, 8, 9, 15, 17, 18, 19, 22, 25, 26, 27, 29, 30, 31, 32, 33, 34, 35, 39, 41, 42, 43, 44, 45, 46, 47, 48, 49.) being tender ſhould be planted in pots, and kept conſtantly plunged in the tan-bed in the ſtove, where they will thrive and flower. Theſe may be propagated by cutting off ſome of their young ſhoots

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[k] Smith.

[l] Cavanilles.

[m] Loureiro.

about the middle of june, when they have ſtrength, planting them in pots filled with light earth, and plunging them into a moderate hot-bed, where, if they are ſhaded from the ſun, and gently watered as they may require it, they will put out roots in ſix weeks, and may then be tranſplanted into ſeparate pots, and treated as the old plants.

When the ſeeds of theſe tender ſorts can be had from their native countries, the plants raiſed that way are much preferable to thoſe which are obtained by any other method, and will flower much ſtronger, but as theſe ſeeds ſeldom grow the firſt year, few perſons have patience enough to wait for the plants coming up. When any of theſe ſeeds are brought over, they ſhould be ſown as ſoon as they arrive in pots, that they may be removed at any time; the pots ſhould be plunged into a moderate hot-bed, and the earth kept tolerably moiſt; the glaſſes ſhould alſo be ſhaded in the heat of the day, to prevent the earth from drying; in this hot-bed the pots may remain till autumn, when, if the plants are not up, they ſhould be plunged between the plants in the bark-ſtove, and in the ſpring removed to a gentle hot-bed, which will bring up the plants ſoon after. When theſe are fit to remove they ſhould be planted in ſeparate ſmall pots, and plunged into the hot-bed again, ſhading them from the ſun till they have taken new root; then they ſhould have a large ſhare of free air admitted to them in warm weather, and frequently refreſhed with water.

In the winter theſe plants ſhould be more ſparingly watered, eſpecially thoſe ſorts whoſe ſtalks decay; and in the ſummer they ſhould have a large ſhare of free air admitted to them, with which management they will thrive and flower.

[Eupatorium. See *Ageratum*, *Agrimonia*, *Baccharis*, *Bidens*, *Chryſocoma*, *Conyza*, *Coreopſis*, *Kuhnia*, *Seriphium*, *Stoebe*.

EUPHORBIA. (Ευφορϐιον *of Dioſcorides*; *from Euphorbus, phyſician to King Juba.*)

Engl. *Euphorbium*, *Spurge*.
Fr. *Euphorbe*. *Titimale*.

Lin. gen. n. 609. *Reich.* 665. *Schreb.* 832. *Juſſ.* 385. Euphorbium. *Iſnard. A. G.* 1720. Tithymalus. *Tourn. t.* 18. *Gærtn. t.* 107. Tithymaloides. *Tourn.* Tithymalus. *Mill. dict.*

Claſſ. 11. 3. Dodecandria Trigynia.

Nat. order of *Tricoccæ*.—*Euphorbiæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, inflated, ſomewhat coloured, four-toothed at the mouth, (in ſome few five-toothed,) permanent.

Cor. *Petals* four, (in ſome few five,) turbinate, gibbous, thick, truncate, unequal in ſituation, alternate with the teeth of the calyx, with their claws placed on the margin of the calyx, permanent.

Stam. *Filaments* ſeveral (twelve or more) filiform, jointed, inſerted into the receptacle, longer than the corolla, breaking forth at different times. *Anthers* twin, roundiſh.

Pist. *Germ* roundiſh, three-ſided, pedicelled. *Styles* three, two-cleft. *Stigmas* obtuſe.

Per. *Capſule* roundiſh, tricoccous, three-celled, ſtarting open elaſtically.

Seeds ſolitary, roundiſh.

Obs. Euphorbium Iſn. *has a ſhrubby cornered or fleſhy ſtem, moſtly leafleſs; prickly in ſome, and unarmed in others; the petals in ſome three-cleft.*

Tithymalus T. *has a leafy ſtem, moſt often herbaceous, always cylindric and without prickles.*

Tithymaloides T. *has the calyx bulging towards the lower ſide, ſhoe-ſhaped.—In ſome ſpecies the male flowers are firſt.*

The petals are generally four, in ſome five; often on the ſame plant, the flowers differing in ſex. Theſe (petals) are in moſt glandulous, in others mooned or toothed, in a few thin like a membrane. Commonly placed in a manner beyond the calyx.

The capſule is either ſmooth or hairy, or warty.

ESSENTIAL CHARACTER.

Cor. four or five-petalled, placed on the calyx. *Cal.* one-leafed, bellying. *Capſ.* tricoccous.

SPECIES.

* *Shrubby, prickly.*

1. Euphorbia antiquorum. *Triangular Spurge.*
Lin. ſpec. 646. *Reich.* 2. 435. *hort. cliff.* 196. *upſ.* 138. *fl. zeyl. n.* 199. *amœn.* 3. 106. *Forſk. ægypt.* 93. *Blackw. t.* 339. *Comm. hort.* 1. 23. *t.* 12. *Rheed. mal.* 2. 81. *t.* 42. *Raii hiſt.* 873. 3.
β. E. trigona. *Mill. dict. n.* 3. *Iſn. act.* 1720. *Comm. præl.* 55. *t.* 5. (Tithymalus).
Almoſt naked, triangular, jointed; branches ſpreading.

2. Euphorbia canarienſis. *Canary Spurge.*
Lin. ſpec. 646. *Reich.* 2. 435. *hort. cliff.* 196. *upſ.* 138. *amœn.* 3. 107. *mant.* 394. *Blackw. t.* 340. *f.* 1. *Comm. hort.* 2. 207. *t.* 104. *Pluk. alm. t.* 320. *f.* 2. (Tithymalus).
Naked, ſubquadrangular; prickles in pairs.

[3. Euphorbia edulis. *Five-angled Spurge.*
Lour. cochinch. 298.
Prickly, leafy, five-angled, peduncles many-flowered terminating, flowers apetalous.]

4. Euphorbia heptagona. *Seven-angled Spurge.*
Lin. ſpec. 647. *Reich.* 2. 646. *hort. cliff.* 196. *amœn.* 3. 109. *Boerh. lugdb.* 1. *t.* 258. *Bradl. ſuec.* 2. *t.* 13.
Naked, ſeven-angled; ſpines ſolitary ſubulate flower-bearing.

5. Euphorbia mammillaris. *Warty-angled Spurge.*
Lin. ſpec. 647. *Reich.* 2. 436. *amœn.* 3. 108. *Iſn. act.* 1720. *p.* 386. *Comm. præl.* 59. *t.* 9. (Tithymalus).
Naked; angles tubered, with ſpines between.

6. Euphorbia cereiformis. *Naked Spurge.*
Lin. ſpec. 647. *Reich.* 2. 436. *amœn.* 3. 108. *Burm. afr.* 19. *t.* 9. *f.* 3. *Mor. hiſt.* 3. 345. *n.* 7. *Pluk. alm. t.* 231. *f.* 1. (Tithymalus).
Naked, many-angled; ſpines ſolitary ſubulate.

7. Euphorbia officinarum. *Officinal Spurge.*
Lin. ſpec. 647. *Reich.* 2. 437. *hort. cliff.* 196. *upſ.* 138. *amœn.* 3. 107. *mat. med.* 120. *Plenck, ic. t.* 365. *Blackw. t.* 340. *f.* 2. *Iſnard. act.* 1720. *p.* 500. *t.* 10. *Comm. hort.* 1. 21. *t.* 11. *Seb. theſ.* 1. 29. *t.* 19. *f.* 2. *Ger.* 1014. *f.* 1. *emac.* 1178. 1. *Park. theat.* 224. 1. *Mor. hiſt.* 3. 345. *ſ.* 7. *t.* 37. *f.* 6. *Raii hiſt.* 872. 1.
Naked, many-angled; prickles doubled.

[8. Euphorbia triaculeata. *Three-prickled Spurge.*
Vahl ſymb. 2. 53. *Forſk. ægypt.* 94.
Prickly naked, ſtem round grooved, prickles in threes.]

9. Euphorbia neriifolia. *Oleander-leaved Spurge.*
Lin. ſpec. 648. *Reich.* 2. 437. *hort. cliff.* 196. *upſ.* 139. *fl. zeyl. n.* 200. *amœn.* 3. 109. *Lour. cochinch.* 298. *Seb. theſ.* 1. 18. *t.* 9. *f.* 1. *Comm. præl.* 56. *t.* 6. *hort.* 1. *t.* 13. *Bradl. ſucc.* 3. *t.* 28. *Mor. hiſt.* 3. 344. *n.* 2. (Tithymalus). *Rumph. amb.* 4. 88. *t.* 40. (Ligularia). *Rheed. mal.* 2. 83. *t.* 43. (Ela Calli). *Burm. ind.* 111.
Angles obliquely tubercled.

2. *Shrubby, unarmed.*

(*Stem neither dichotomous, nor umbelliferous.*)

[10. Euphorbia meloformis. *Melon Spurge.*
Ait. hort. kew. 2. 135.
Subgloboſe many-angled.]

11. Euphorbia Caput-meduſæ. *Meduſa's-head Spurge.*
Lin. ſpec. 648. *Reich.* 2. 437. *hort. cliff.* 197. *upſ.* 139. *amœn.* 3. 110. *Ait. hort. kew.* 2. 135.
α. major. *Great Meduſa's-head Spurge.*
Comm. præl. 57. *t.* 7. Tithymalus.
β. minor. *Small Meduſa's-head Spurge.*
E. fructus Pini. *Mill. dict n.* 10. *Iſnard act. par.* 1720. *p.* 386. *Breyn. ic.* 29. *t.* 19.
γ. geminata. *Leaſt Meduſa's-head Spurge.*
Burm. afr. 18. *t.* 9. *f.* 1.
Imbricate, tubercles furniſhed with a linear leaf, flowers ſubpeduncled, petals palmate.

12. Euphorbia Clava. *Club Spurge.*
Jacqu. ic. collect. 1. 104. *Ait. hort. kew.* 2. 136. *Burm. afr.* 12. *t.* 6. *f.* 1. *Comm. præl.* 58. *t.* 8.
Imbricate,

Imbricate, tubercles furniſhed with a lanceolate leaf, flowers peduncled, petals quite entire.

13. Euphorbia anacantha. *Scaly Spurge.*
Ait. hort. kew. 2. 136. *Iſnard. act. par.* 1720. *p.* 387. *n.* 12. & 392. *t.* 11. *Burm. afr.* 16. *t.* 7. *f.* 2.
E. procumbens. *Mill. dict. n.* 12?
Imbricate, tubercles furniſhed with a roundiſh leaflet, flowers terminating ſolitary ſeſſile, petals palmate.

14. Euphorbia mauritanica. *Barbary Spurge.*
Lin. ſpec. 649. *Reich.* 2. 438. *hort. cliff.* 197. *upſ.* 140. *amœn.* 3. 111. *Gron. orient.* 160. *Dill. elth.* 384. *t.* 289. *f.* 373.
Half naked ſhrubby filiform flaccid, leaves alternate.

[15. Euphorbia piſcatoria. *Smooth Spearleaved Spurge.*
Ait. hort. kew. 2. 137.
Shrubby ſtrict, umbels five-cleft terminating, involucels oblong, leaves linear even.

16. Euphorbia glabrata. *Smooth Spurge.*
Swartz prodr. 76. *Vahl ſymb.* 2. 53. *Sloan. jam.* 2. 198. (Peplis).
Unarmed ſhrubby branched, leaves oppoſite ovate acute ſmooth quite entire.

17. Euphorbia linifolia. *Flax-leaved Spurge.*
Vahl ſymb. 2. 53.
Stem ſuffruticoſe, leaves oppoſite and alternate linear-lanceolate.

18. Euphorbia cuneata.
Vahl ſymb. 2. 53.
Shrubby, leaves obovate, peduncles lateral three-flowered.

19. Euphorbia balſamifera. *Balſam Spurge.*
Ait. hort. kew. 2. 137.
Shrubby ſtrict, head terminating, leaves lanceolate, even, glaucous.]

20. Euphorbia Tirucalli. *Indian Tree-Spurge.*
Lin. ſpec. 649. *Reich.* 2. 438. *hort. cliff.* 197. *upſ.* 139. *fl. zeyl.* 196. *amœn.* 3. 111. *Lour. cochinch.* 299. *Comm. hort.* 1. 27. *t.* 14. *Pluk. phyt. t.* 319. *f.* 6. (Tithymalus). *Rumph. amb.* 7. 62. *t.* 29. *Rheed. mal.* 8. *t.* 44.
Half naked ſhrubby filiform, erect, branches patulous crowded in an orderly manner.

21. Euphorbia Tithymaloides.
Lin. ſpec. 649. *ſyſt.* 449. *Reich.* 2. 438. *hort. cliff.* 198. *amœn.* 3. 111. *Jacqu. amer.* 149. *t.* 92. *pict.* 74. *t.* 138.
α. E. myrtifolia. *Myrtle-leaved Spurge.*
Tithymalus myrtifolius. *Mill. dict. n.* 1. *Herm. part. t.* 234. *Comm. hort.* 1. 31. *t.* 16. *Pluk. alm. t.* 230. *f.* 2.
β. E. padifolia. *Laurel-leaved Spurge.*
Tithymalus laurocerafifolius. *Mill. dict. n.* 2.
Tithymaloides lauroceraſi folio non ſerrato. *Dill. elth.* 383. *t.* 288. *f.* 372.
Shrubby, leaves in a double row alternate ovate.

22. Euphorbia heterophylla. *Various-leaved Spurge.*
Lin. ſpec. 649. *Reich.* 2. 439. *amœn.* 3. 112. *Retz. obſ.* 6. 30. *n.* 48. *Plum. ic.* 250. *t.* 251. *f.* 3. *Pluk. alm. t.* 12. *f.* 6. *Mor. hiſt.* 3. 336. 16. (Tithymalus).
Leaves ſerrate petioled difform ovate panduriform: (dichotomous with a bifid umbel.)

23. Euphorbia cotinifolia. *Venice-Sumach-leaved Sp.*
Lin. ſpec. 650. *ſyſt.* 449. *Reich.* 2. 439. *amœn.* 3. 112. *hort. cliff.* 198. *Pluk. alm. t.* 230. *f.* 3. *Seb. theſ.* 1. 75. *t.* 46. *f.* 4. *Comm. hort.* 1. 29. *t.* 15. (Tithymalus).
Leaves oppoſite ſubcordate petioled emarginate quite entire, ſtem ſhrubby.

24. Euphorbia ocymoidea. *Baſil-leaved Spurge.*
Lin. ſpec. 650. *Reich.* 2. 439. *amœn.* 3. 112.
Herbaceous branching, leaves ſubcordate quite entire ſhorter than the petiole, flowers ſolitary.

[25. Euphorbia lævigata.
Vahl ſymb. 2. 54.
Shrubby branched, leaves oppoſite oblong obtuſe ſmooth quite entire.

3. *Dichotomous.*

(With a bifid umbel, or none.)

26. Euphorbia origanoides. *Marjoram Spurge.*
Lin. ſpec. 650. *Reich.* 2. 440. *amœn.* 2. 114.
Leaves ſerrulate ovate obtuſe three-nerved, panicle terminating, ſtems ſimple.

27. Euphorbia Atoto.
Forſt. fl. auſtral. n. 207.
Dichotomous, leaves ovate quite entire, umbel terminating.]

28. Euphorbia hypericifolia. *St. John's-wort-leaved Spurge.*
Lin. ſpec. 650. *Reich.* 2. 440. *amœn.* 3. 113. *hort. cliff.* 198. *upſ.* 143. *Swartz obſ.* 194. *Brown. jam.* 235. 2. *Sloan. jam.* 1. 197. 14. *t.* 126. *Comm. præl. t.* 60. (Tithymalus).
Leaves ſerrate oval-oblong ſmooth, corymbs terminating, branches divaricate.

[29. Euphorbia mellifera. *Honey-bearing Spurge.*
Ait. hort. kew. 3. 493.
Leaves ſcattered lanceolate acute even, peduncles dichotomous, capſules muricated.

30. Euphorbia proſtrata. *Trailing red Spurge.*
Ait. hort. kew. 2. 139.
Leaves oval obſcurely ſerrate, peduncles axillary with about three flowers, ſtems diffuſed ſmooth.

31. Euphorbia maculata. *Spotted Spurge.*
Lin. ſpec. 652. *ſyſt.* 450. *Reich.* 2. 440. *Jacqu. hort.* 2. 87. *t.* 186. *Pluk. phyt. t.* 65. *f.* 8. (Tithymalus). *Sloan. jam.* 1. 198. (Chamæſyce).
Leaves ſerrate oblong hairy, flowers axillary ſolitary, branches patulous.

32. Euphorbia hirta. *Creeping hairy Spurge.*
Lin. ſpec. 651. *Reich.* 2. 441. *amœn.* 3. 114. *fl. zeyl. n.* 197. *Swartz obſ.* 195. *Brown. jam.* 234. *Burm. zeyl.* 223. *t.* 104. (Tithymalus). *Rumph. amb.* 6. 54. *t.* 23. *f.* 2. (Eſula).
Leaves ſerrulate ovate acuminate, peduncles in axillary heads, ſtems hairy.

33. Euphorbia pilulifera.
Lin. ſpec. 651. *Reich.* 2. 441. *amœn.* 3. 115. *Burm. zeyl.* 224. *t.* 105. *f.* 1. *Pet. gaz. t.* 80. *f.* 14. (Tithymalus).
Leaves ſerrate oval-oblong, peduncles in two axillary heads, ſtem upright.

34. Euphorbia hyſſopifolia. *Hyſſop-leaved Spurge.*
Lin. ſpec. 631. *Reich.* 2. 441. *Brown. jam.* 235. 4.
Leaves ſubcrenate linear, flowers faſcicled terminating, ſtem upright.

35. Euphorbia thymifolia. *Thyme-leaved Spurge.*
Lin. ſpec. 652. *Reich.* 2. 441. *amœn.* 3. 115. *fl. zeyl. n.* 198. *Pluk. alm. t.* 113. *f.* 2. *Burm. zeyl.* 225. *t.* 105. *f.* 3. (Tithymalus).
Leaves ſerrate oval-oblong, heads axillary glomerate ſubſeſſile, ſtems procumbent.

36. Euphorbia parviflora.
Lin. ſpec. 652. *ſyſt.* 450. *Reich.* 2. 442. *Burm. zeyl.* 224. *t.* 105. *f.* 2.
Leaves ſerrate oblong ſmooth, flowers ſolitary, ſtem erectiſh alternately branched.

37. Euphorbia caneſcens.
Lin. ſpec. 652. *Reich.* 2. 442. *Cavan. hiſp.* 46. *n.* 69. *t.* 63.
Leaves entire roundiſh hairy, flowers ſolitary axillary, ſtems procumbent.

38. Euphorbia Chamæſyce. *Crenated Annual Spurge.*
Lin. ſpec. 652. *Reich.* 2. 442. *mant.* 393. *amœn.* 3. 115. *hort. cliff.* 198. *Gmel. ſib.* 2. 237. *Gron. orient.* 160. *Brown. jam.* 236. 8. *Swartz obſ.* 196. *Villars dauph.* 3. 821.
Chamæſyce. *Bauh. pin.* 293. *Cluſ. hiſt.* 2. 188.
Leaves crenulate roundiſh ſmooth, flowers ſolitary axillary, ſtems procumbent.

39. Euphorbia rubra.
Cavan. hiſp. 21. *n.* 34. *t.* 34. *f.* 1.
Leaves wedge-ſhaped emarginate imbricate, umbels bifid, corollas five-petalled.

40. Euphorbia granulata.
Vahl ſymb. 2. 54. *Forſk. ægypt.* 94.
Dichotomous, leaves oppoſite oblong quite entire, flowers ſolitary, axillary, ſtems procumbent.

41. Euphorbia Peplis. *Purple Spurge.*
Lin. ſpec. 652. *Reich.* 2. 442. *amœn.* 3. 115. *Gron. orient.* 163. *Hudſ. angl.* 207. *With.* 494.

Krock. ſileſ. n. 722. *Vahl ſymb.* 2. 54. *Forſk. ægypt.* 93. *Villars dauph.* 3. 822.
Tithymalus Peplis. *Scop. carn. n.* 583.
T. maritimus ſupinus annuus, Peplis dictus. *Raii ſyn.* 313.
Peplis. *Cluſ. hiſt.* 2. 187. *Camer. epit.* 970. *Matth.* 1260. *Bauh. hiſt.* 3. 668. *Ger.* 406. 16. *emac.* 503. 20. *Park. theat.* 194. 7. *Raii hiſt.* 869.—maritima fol. obtuſo. *Bauh. pin.* 293. *Mor. hiſt.* 3. 340. *ſ.* 10. *t.* 2. *f.* 18. *Petiv. brit. t.* 53. *f.* 12.
Peplion. *Dalech. hiſt.* 1659.
Leaves quite entire ſemicordate, flowers ſolitary axillary, ſtems procumbent.

42. Euphorbia polygonifolia. *Knot-graſs-leaved Sp.*
Lin. ſpec. 653. *Reich.* 2. 443. *amœn.* 3. 116. *Gron. virg.* 58. *Raii ſuppl.* 431. *n.* 51.
Leaves oppoſite quite entire lanceolate obtuſe, flowers ſolitary axillary, ſtems procumbent.

43. Euphorbia graminea.
Lin. ſyſt. 450. *Reich.* 2. 443. *mant.* 74. *Jacqu. amer.* 151. *pict.* 74. *t.* 139. *obſ.* 1. 5. *t.* 31. *Brown. jam.* 253. 3. *Swartz obſ.* 196?
Leaves lanceolate elliptic petioled quite entire, ſtem upright, peduncles dichotomous.

44. Euphorbia Ipecacuanhæ.
Lin. ſpec. 653. *Reich.* 2. 443. *amœn.* 3. 116. *Gron. virg.* 58. (Tithymalus).
Leaves quite entire lanceolate, peduncles axillary one-flowered equalling the leaves, ſtem upright.

45. Euphorbia portulacoides. *Purſlain-leaved Spurge.*
Lin. ſpec. 653. *Reich.* 2. 443. *amœn.* 3. 117.
Leaves quite entire oval retuſe, peduncles axillary, one-flowered, equalling the leaves, ſtem upright.

46. Euphorbia myrtifolia. *Myrtle-leaved Spurge.*
Lin. ſpec. 653. *Reich.* 2. 443. *Swartz obſ.* 197.
Leaves quite entire, roundiſh emarginate hoary underneath, flowers ſolitary, ſtem upright.

47. Euphorbia imbricata.
Vahl. ſymb. 2. 54.
Umbel dichotomous bifid, involucels roundiſh mucronate, leaves obovate imbricate ſerrulate, ſtem fruticuloſe.

4. *Umbel trifid.*

48. Euphorbia Peplus. *Petty Spurge.*
Lin. ſpec. 653. *Reich.* 2. 444. *amœn.* 3. 117. *hort. cliff.* 199. *fl. ſuec. n.* 426. *Gærtn. fruct.* 2. 115. *Hudſ. angl.* 208. *With.* 495. *Curtis lond.* 1. 35. *Lightf. ſcot.* 249. *Hall. helv. n.* 1049. (Tithymalus). *Neck. gallob.* 211. *Pollich pal. n.* 455. *Leers herborn. n.* 357. *Krock. ſileſ. n.* 723. *Berg. phyt.* 57. *Retz. obſ.* 3. 32. *Villars dauph.* 3. 822.
Peplus. *Dod. purg.* 163. *pempt.* 375. 2. *Tabern.* 597.—ſ. Eſula rotunda. *Bauh. pin.* 292. *Lob. ic.* 362. *Ger.* 406. 15. *emac.* 503. 19. *Bauh. hiſt.* 3. 669. *Raii hiſt.* 869. *Mor. ſ.* 10. *t.* 2. *f.* 11. *Petiv. brit. t.* 53. *f.* 11.
Eſula rotunda, ſ. Peplus. *Park. theat.* 194. 6. *Rivin. tetr. t.* 118.
Tithymalus Peplus. *Raii ſyn.* 313. 11.
β. Peplus minor. *Bauh. hiſt.* 3. 670. *Retz. obſ.* 3. 32.
E. peploides. *Allion. pedem. n.* 1032.
Umbel dichotomous, involucels ovate, leaves quite entire obovate petioled.

49. Euphorbia falcata.
Lin. ſpec. 654. *ſyſt.* 451. *Reich.* 2. 444. *mant.* 393. *amœn.* 3. 118. *Pollich pal. n.* 456. *Jacqu. auſtr.* 2. *t.* 121. *Krock. ſileſ. n.* 724. *Villars dauph.* 3. 823. (Tithymalus). *Barrel. ic.* 751. (Pithyuſa). *Mor. hiſt.* 339. (Tithymalus).
Umbel dichotomous, involucels ſubcordate mucronate, leaves lanceolate bluntiſh.

50. Euphorbia exigua. *Dwarf Spurge.*
Lin. ſpec. 654. *ſyſt.* 451. *Reich.* 2. 444. *amœn.* 3. 118. *Hudſ. angl.* 208. *With.* 495. *Curt. lond.* 4. 36. *Lightf.* 250. *Relh. cant. n.* 351. *Neck. gallob.* 211. *Pollich pal. n.* 457. *Leers herborn. n.* 358. *Krock. ſileſ. n.* 725. *Villars dauph.* 3. 824. *Fl. dan. t.* 592. *Weig. obſ.* 31. *Hall. helv. n.* 1048. (Tithymalus).
α. E. exigua acuta. *Lin. hort. cliff.* 199. *ups.* 143. *Retz. obſ.* 1. 19.
Tithymalus ſ. Eſula exigua. *Bauh. pin.* 291.
T. leptophyllus. *Camer. epit.* 966. *Park. theat.* 193. 5. *Raii hiſt.* 868. *ſyn.* 313. *Pet. brit. t.* 53. *f.* 9.
Eſula exigua Tragi. 296. *Ger.* 503. 17. *Mor. ſ.* 10. *t.* 2. *f.* 5.
β. E. exigua retuſa.
E retuſa. *Cavan. ic. hiſp.* 21. *t.* 34. *f.* 3.
T. ſ. E. exigua, fol. obtuſis. *Bauh. pin.* 291. *prodr.* 133. 2. *Krock. ſileſ.* β.
An Tithymalus ſegetum longifolius. *Raii hiſt.* 868?
γ T. exiguus ſaxatilis. *Bauh. pin.* 291. *prodr.* 133. 3. *Magn. monſp.* 259. *t.* 258.
Umbel dichotomous, involucels lanceolate, leaves linear.

51. Euphorbia obliterata.
Swartz prodr. 76. *Jacqu. amer.* 151. 5.
Leaves oblong trapezoid ſerrate pubeſcent, obliterated on one ſide of the baſe.

52. Euphorbia tuberoſa.
Lin. ſpec. 654. *Reich.* 2. 445. *amœn.* 3. 117. *Buxb. cent.* 2. 27. *t.* 23. *Burm. afr.* 9. *t.* 4. *Raii. ſuppl.* 433. *n.* 6.
Involucre four-leaved, ſtem-naked, leaves oblong emarginate.

53. Euphorbia divaricata.
Lin. ſyſt. 451. *Jacqu. collect.* 1. *icon rar.*
Umbel trifid or quadrifid, ſtem ſhrubby trichotomous.]

5. *Umbel quadrifid.*

54. Euphorbia Lathyris. *Caper Spurge.*
Lin. ſpec. 655. *Reich.* 2. 445. *amœn.* 3. 119. *mat. med.* 121. *hort. ups.* 140. *cliff.* 198. *Gmel. ſib.* 2. 230. *Allion. pedem. n.* 1036. *Krock. ſileſ. n.* 726. *Mill. illuſtr. Plenck, ic. t.* 366. *Villars dauph.* 3. 824.
Tithymalus Lathyris. *Scop. carn. n.* 571. *Hall. helv. n.* 1044.—major annuus glaucifolius *Mor. hiſt.* 339. *ſ.* 10. *t.* 2. *f.* 1.
Lathyris. *Camer. epit.* 968. *Fuchs. hiſt.* 454. *Matth.* 1259. *Blackw. t.* 123.—major. *Bauh. pin.* 293. *Raii hiſt.* 866. *Ger.* 405. 13. *emac.* 503. 18. *Park. theat.* 191. 1, 2.
Umbel dichotomous, leaves oppoſite quite entire.

[55. Euphorbia Terracina.
Lin. ſpec. 654. *Reich.* 2. 446. *Barrel. ic.* 833. *Villars dauph.* 3. 823.
Umbel dichotomous, leaves alternate lanceolate retuſe mucronate.

56. Euphorbia diffuſa. *Spreading Spurge.*
Lin. ſyſt. 451. *Jacqu. miſc.* 2. 311.
Umbel four or five-cleft dichotomous, ſtem very much diffuſed, leaves wedge-form quite entire alternate.]

57. Euphorbia Apios. *Pear-rooted Spurge.*
Lin. ſpec. 656. *ſyſt.* 451. *Reich.* 2. 446. *amœn.* 3. 120.
Tithymalus tuberoſa radice. *Cluſ. hiſt.* 2. 190.—pyriformi. *Bauh. pin.* 292. *Mor. ſ.* 10. *t.* 3. *f.* 12.
Apios. *Bauh. hiſt.* 3. 666. *Raii hiſt.* 870.—vera *Ger.* 407. 18. *emac.* 504. 22.—ſ. Tithymalus tuberoſus *Park.* 194. 11. *f.* 195. 10.
Umbel four-cleft bifid, involucels kidney-form, the firſt obcordate.

[58. Euphorbia læta. *Mezerion-leaved Spurge.*
Ait. hort. kew. 2. 141.
Umbel quadrifid or quinquefid, twice dichotomous; firſt involucels oblong, upper ones rhomb-roundiſh; leaves linear-lanceolate ſubemarginate quite entire.

6. *Umbel quinquefid.*

59. Euphorbia geniſtoides. *Broom-like Spurge.*
Lin. ſyſt. 452. *Reich.* 2. 447. *mant.* 564. *Berg. cap.* 146.
Umbel quinquefid bifid, involucels ovate, leaves linear erect, ſtem becoming ſhrubby.

60. Euphorbia ſpinoſa. *Prickly Spurge.*
Lin. ſpec. 655. *ſyſt.* 452. *Reich.* 2. 447. *amœn.* 3. 120. *hort. cliff.* 201. *Sauv. monſp.* 51. *Herm. lugdb. t.* 601. *Bauh. pin.* 291. 3. (Tithymalus.) *Mor.* 342. *t.* 1. *f.* 8.

Umbel ſubquinquefid, ſimple; involucels ovate, the primary ones three-leaved; leaves oblong quite entire, ſtem ſhrubby.

61. Euphorbia epithymoides.
Lin. ſpec. 656. *Reich.* 2. 447. *Jacqu. auſtr.* 5. *t.* 344. *Allion pedem. n.* 1038.
Tithymalus epithymi fructu. *Col. ecphr.* 1. 52. *t.* 51.
Peplios altera ſpecies. *Bauh. pin.* 292.
Umbel quinquefid bifid; involucels ovate; leaves lanceolate obtuſe villoſe underneath.

62. Euphorbia Nicæenſis.
Allion. pedem. n. 1039. *t.* 69. *f.* 1. *Vahl. ſymb.* 3. 63.
Umbel quinquefid bifid, involucels cordate roundiſh quite entire, leaves lanceolate mucronate ſubcoriaceous.

63. Euphorbia dulcis. *Sweet Spurge.*
Lin. ſpec. 656. *ſyſt.* 452. *Reich.* 2. 448. *mant.* 393. *amœn.* 3. 122. *Jacqu. auſtr.* 3. 8. *t.* 213. *Leers herborn. n.* 359. *Krock ſileſ. n.* 727. *Vahl ſymb.* 2. 55. *Villars dauph.* 3. 825. *Ger. prov.* 537. *n.* 7.
Tithymalus dulcis. *Scop. carn. n.* 573. *Hall. helv. n.* 1051. *Barrel. ic.* 840. *Riv. t.* 117. (Eſula.) *Lob. ic.* 358. (Pithyuſa.)—montanus non acris. *Bauh. pin.* 292.—Eſula dulcis Tragi. *Matth.* 1656.
Umbel quinquefid bifid; involucels ſubovate, leaves lanceolate obtuſe quite entire.

64. Euphorbia carniolica.
Lin. ſyſt. 452. *Jacqu. auſtr.* 5. *app. t.* 14.
Tithymalus piloſus. *Scop. carn. n.* 576. *t.* 21.
Rays of the umbel nodding; involucres involucels and leaves lanceolate.

65. Euphorbia Pithyuſa. *Juniper-leaved Spurge.*
Lin. ſpec. 656. *Reich.* 2. 448. *amœn.* 3. 122.
Tithymalus Pithyuſa. *Scop. carn. n.* 575.
T. fol. brevibus aculeatis. *Bauh. pin.* 292.
T. maritimus, juniperi folio. *Bocc. ſic.* 9. *t.* 5. *Mor.* 337. *ſ.* 10. *t.* 1. *f.* 25.
Pithyuſa. *Dalech. hiſt.* 1652.
Umbel quinquefid bifid; involucels ovate mucronate; leaves lanceolate, the loweſt rolled in, imbricate backwards.

66. Euphorbia portlandica. *Portland Spurge.*
Lin. ſpec. 656. *ſyſt.* 452. *Reich.* 2. 448. *Hudſ. angl.* 208. *With.* 496. *Barrel. ic.* 822. (Tithymalus.)
Tithymalus maritimus minor. *Raii ſyn.* 313. *t.* 24. *f.* 6.
Umbel dichotomous; involucels ſubcordate concave, leaves linear-lanceolate ſmooth ſpreading.

67. Euphorbia ſaxatilis, *Rock Spurge.*
Lin. ſyſt. 452. *Jacqu. auſtr.* 4. *t.* 345.
Umbel quinquefid bifid; involucres and involucels cordate; leaves oblong ſmooth.

68. Euphorbia paralias. *Sea Spurge.*
Lin. ſpec. 657. *ſyſt.* 452. *Reich.* 2. 449. *amœn.* 3. 129. *hort. cliff.* 200. *Hudſ. angl.* 209. *With.* 496. *Engl. bot. t.* 195. *Jacqu. hort.* 2. *t.* 188. *Gron. orient.* 162. *Krock. ſiles. n.* 728.
Tithymalus paralias. *Scop. carn. n.* 581. *Hall. helv. n.* 1055. *Camer. epit.* 962. *Ger.* 401. *f.* 1. *emac.* 498. *f.* 1. *Park. theat.* 184. *Bauh. hiſt.* 3. 674. *f.* 675. *Raii hiſt.* 865. *ſyn.* 312. *Petiv. brit. t.* 53. *f.* 8.
T. maritimus. *Bauh. pin.* 291. *Dod. pempt.* 370. *f.* 1, 2. *Mor. ſ.* 10. *t.* 1. *f.* 24.
Umbel ſubquinquefid bifid; involucels cordate reniform; leaves imbricate upwards.

69. Euphorbia juncea. *Linear-leaved Spurge.*
Ait. hort. kew. 2. 142.
Umbel dichotomous; leaves and involucres linear-lanceolate acute; involucels ovate-oblong acuminate.]

70. Euphorbia aleppica.
Lin. ſpec. 657. *Reich.* 2. 449. *amœn.* 3. 122. *Mor. hiſt.* 3. 338.
Tithymalus cypariſſius. *Alp. exot.* 65. *t.* 64.
Umbel dichotomous; involucels ovate-lanceolate mucronate; lower leaves briſtle-form.

[71. Euphorbia pinea.]
Lin. ſyſt. 452. *Reich.* 2. 450.
Umbel dichotomous; involucels cordate; leaves linear acuminate crowded; capſules ſmoothiſh.

72. Euphorbia ſegetalis. *Corn Spurge.*
Lin. ſpec. 657. *ſyſt* 452. *Reich.* 2. 450. *mant.* 393. *Ger. prov.* 538. *Jacqu. auſtr.* 5. *t.* 450. *Krock. ſiles. n.* 729. *Villars dauph.* 3. 828.
Umbel dichotomous; involucels cordate acute; leaves linear-lanceolate, the upper ones broader.

73. Euphorbia taurinenſis.
Allion. pedem. n. 1046. *t.* 83. *f.* 2. *Villars dauph.* 3. 827.
Umbel quinquefid bifid; involucre four-leaved hanging down; leaves linear-lanceolate; ſtem branched.

74. Euphorbia helioſcopia. *Sun-Spurge,* or *Wartwort.*
Lin. ſpec. 658. *ſyſt.* 453. *Reich.* 3. 450. *amœn.* 3. 124. *hort. cliff.* 198. *fl. ſuec. n.* 425. *lapp.* 220. *Hudſ. angl.* 209. *With.* 497. *Lightf.* 250. *Curtis lond.* 1. 36. *abr. t.* 23. *Neck. gallob.* 212. *Pollich. pal. n.* 458. *Fl. dan. t.* 725. *Krock. ſiles. n.* 730. *Plenck, ic. t.* 369. *Villars dauph.* 3. 828.
Tithymalus helioſcopius. *Scop. carn. n.* 579. *Hall. helv. n.* 1050. *Bauh. pin.* 291. *Fuchs. hiſt.* 811. *Camer. epit.* 963. *Dod. purg.* 145. *Matth.* 1644. *Ger.* 401. 2. *emac.* 498. 2. *Park. theat.* 189. *Petiv. brit. t.* 53. *f.* 10. *Mor. hiſt.* 339. *ſ.* 10. *t.* 2. *f.* 9. *Bauh. hiſt.* 3. 669. 1. *Raii hiſt.* 869. *ſyn.* 313.
Umbel quinquefid trifid dichotomous; involucels obovate; leaves wedge-form ſerrate ſmooth, capſules even.

75. Euphorbia pubeſcens.
Vahl. ſymb. 2. 55.
Umbel quinquefid trichotomous, involucels ſemicordate, leaves wedge-ſhaped hairy ſerrulate, capſules muricate.

76. Euphorbia ſerrata. *Narrow notch-leaved Spurge.*
Lin. ſpec. 658. *Reich.* 2. 451. *amœn.* 3. 125. *hort. cliff.* 200. *ups.* 141. *Vahl ſymb.* 2. 55. *Forſk. ægypt.* 93. *t.* 13. *Villars dauph.* 3. 828. *Ger. prov.* 539.
Tithymalus characias, fol. ſerrato. *Bauh. pin.* 290.
T. myrtites valentinus. *Cluſ. hiſt.* 2. 189.
Umbel quinquefid trifid dichotomous; involucels two-leaved kidney-form; leaves ſtem-claſping cordate ſerrate.

77. Euphorbia verrucoſa. *Warty-fruited Spurge.*
Lin. ſpec. 658. *ſyſt.* 453. *Reich.* 2. 451. *mant.* 393. *amœn.* 3. 120, *Hudſ. angl.* 209. *With.* 497. *Relh. cant. n.* 353. *Krock. ſiles. n.* 731. *Villars dauph.* 3. 829.
Tithymalus verrucoſus. *Scop. carn. n.* 577. *Hall. helv. n.* 1052. *Bauh. pin.* 291. 5. *Mor. ſ.* 10. *t.* 3. *f.* 3. *Bauh. hiſt.* 3. 673. 1. *Petiv. brit. t.* 53. *f.* 6. *Raii hiſt.* 871. *ſyn.* 312.
Umbel quinquefid, ſubtrifid, bifid; involucels ovate; leaves lanceolate ſerrate villoſe; capſules waried.

78. Euphorbia punicea. *Scarlet-flowered Spurge.*
Swartz prodr. 76. *Ait. hort. kew.* 2. 143. *Smith ic. rar. t.* 3.
Umbel quinquefid, trifid; involucels oval acuminate coloured; capſules ſmooth; leaves obovate-lanceolate.

79. Euphorbia corollata.
Lin. ſpec. 658. *Reich.* 2. 451. *amœn.* 3. 122. *Gron. virg.* 58. *Pluk. mant. t.* 446. *f.* 3. (Tithymalus.)
Umbel quinquefid, trifid, dichotomous; involucels and leaves oblong obtuſe; petals membranaceous.

80. Euphorbia coralloides. *Coral-ſtalked Spurge.*
Lin. ſpec. 659. *Reich.* 2. 452. *amœn.* 3. 123. *hort. ups.* 142.
Umbel quinquefid trifid dichotomous, involucels ovate, leaves lanceolate, capſules woolly.

81. Euphorbia piloſa. *Hairy Spurge.*
Lin. ſpec. 659. *ſyſt.* 453. *Reich.* 2. 452. *Gmel. ſib.* 2. 226. *t.* 93. *Barrel. ic.* 885.
Umbel quinquefid, trifid, bifid; involucels ovate; petals entire; leaves lanceolate ſomewhat hairy ſerrulate at the tip.]

82. Euphorbia orientalis. *Willow-leaved Spurge.*
Lin. ſpec. 660. *Reich.* 2. 453. *amœn.* 3. 123.
Umbel quinquefid quadrifid dichotomous; involucels roundiſh acute; leaves lanceolate.

[83. Euphorbia platyphyllos. *Broad notch-leaved Spurge.*
Lin. ſpec. 660. *ſyſt.* 453. *Reich.* 2. 453. *amœn.* 3. 124. *hort. ups.* 141. *Hudſ. angl.* 209. *With.* 498. *Jacqu. auſtr.* 4. 40. *t.* 376. *Pollich. pal. n.* 459. *Krock. ſiles.* 733. *Villars dauph.* 3. 829.

Tithymalus platyphyllos. *Scop. carn. n.* 578. *Hall. helv. n.* 1053. *Fuchs hiſt.* 813. *Bauh. hiſt.* 3. 670. *Raii hiſt.* 870. 32. *ſyn.* 312.

T. arvenſis latifolius germanicus. *Bauh. pin.* 291. *Mor. ſ.* 10. *t.* 3. *f.* 1.

Umbel quinquefid trifid dichotomous; involucels hairy along the keel; leaves ſerrate lanceolate; capſules warted.

84. Euphorbia glauca.
Forſt. fl. auſtr. n. 208.

Umbel ſubquinquefid trifid; involucres and involucels ovate; leaves ſcattered oblong-lanceolate quite entire; ſtem fruteſcent.

7. *Umbel multifid.*

85. Euphorbia Eſula. *Gromwell-leaved Spurge.*
Lin. ſpec. 660. *ſyſt* 453. *Reich.* 2. 454. *mant.* 394. *amœn.* 3. 127. *hort. ups.* 141. *Pollich pal. n.* 460. *Villars dauph.* 3. 830. *Krock. ſileſ. n.* 735. *Plenck, ic. t.* 370.

Tithymalus Eſula. *Scop. carn. n.* 580. *Hall. helv. n.* 1046.

T. fol. pini &c. *Bauh. pin.* 292.

T. Cypariſſiæ ſimilis, Pityuſa multis. *Bauh. hiſt.* 3. 665. *Raii hiſt.* 867.

T. amygdaloides anguſtifolius. *Tabern. ic.* 541. *Vaill. par.* 192. *Mart. Tourn. par.*

Eſula. *Rivin. tetr.* 227.—minor. *Dalech. hiſt.* 1653. *Dod. pempt.* 374. *Blackw. t.* 163. *f.* 1, 2.

Umbel multifid bifid; involucels ſubcordate; petals obſcurely two-horned; leaves on the barren and fertile branches the ſame.

86. Euphorbia Seguierii.
Scop. carn. n. 574. *t.* 20. *Allion. n.* 1054.

Tithymalus fol. brevibus aculeatis. *Bauh. pin.* 292. *Seguier veron.* 1. 154. *t.* 3. *f.* 1. *Mor. ſ.* 10. *t.* 2. *f.* 28.

Umbel multifid bifid dichotomous; involucels kidney-form acuminate; petals mooned; capſules ſmooth; leaves lanceolate acuminate.

87. Euphorbia gerardiana.
Lin. ſyſt. 454. *Jacqu. auſtr.* 5. *t.* 436. *Ger. prov.* 540.

Umbel dichotomous; involucels roundiſh; petals quite entire; branches none; leaves all of one form.

88. Euphorbia Cypariſſias. *Cypreſs Spurge.*
Lin. ſpec. 661. *ſyſt.* 454. *Reich.* 2. 454. *mant.* 394. *amœn.* 3. 127. *hort. cliff.* 199. *ups.* 142. *Weigel obſ.* 31. *Pollich. pal. n.* 461. *Krock. ſiles. n.* 734. *Plenck, ic. t.* 367. *Blackw. t.* 163. *f.* 3. *Jacqu. auſtr.* 5. 16. *t.* 435. *Villars dauph.* 3. 830.

Tithymalus Cypariſſias. *Scop. carn. n.* 582. *Hall. helv. n.* 1047. *Bauh. pin.* 291. *Dalech. hiſt.* 1644. *Tabern. hiſt.* 990. *Bauh. hiſt.* 3. 663. *Ger.* 402. 5. *emac.* 499. 5. *Park. theat.* 193. *f.* 3. *Mor. ſ.* 10. *t.* 2. *f.* 29. *Raii hiſt.* 867.

Umbel dichotomous; involucels ſubcordate; branches barren with ſetaceous, fertile with lanceolate leaves.]

89. Euphorbia Myrſinites. *Glaucous Spurge.*
Lin. ſpec. 661. *Reich.* 2. 455. *amœn.* 3. 128. *hort. cliff.* 199. *ups.* 141.

Tithymalis Myrſinites. *Dod. pempt.* 369. *Bauh. hiſt.* 3. 674. *Park. theat.* 187. 7. *Raii hiſt.* 865. —latifolius. *Bauh. pin.* 290. *Ger. emac.* 498. 3. —legitimus. *Cluſ. hiſt.* 2. 189.

Umbel with about eight bifid rays; involucels ſubovate; leaves ſpatulate ſpreading fleſhy mucronate ſcabrous at the edge.

90. Euphorbia paluſtris. *Marſh Spurge.*
Lin. ſpec. 662. *ſyſt.* 454. *Reich.* 2. 456. *mant.* 394. *amœn.* 3. 126. *mat. med.* 121. *hort. cliff.* 200. *fl. ſuec. n.* 427. *Plenck, ic. t.* 368. *Vill. dauph.* 3. 831. *Pollich. pal. n.* 462. *Jacqu. miſc.* 2. 314. *fl. dan. t.* 866. *Krock. ſileſ. n.* 737. *Hall. helv. n.* 1054. (Tithymalus.)

Eſula paluſtris. *Rivin. tetr.* 230.—major. *Dalech. hiſt.* 1653. *Dod. purg.* 158.—germanica. *Ger.* 404. 11. *emac.* 501. 14.

Tithymalus paluſtris fruticoſus. *Bauh. pin.* 292. *Mor. ſ.* 10. *t.* 2. *f.* 1. *row.* 3.

T. magnus multicaulis, ſ. E. major. *Bauh. hiſt.* 3. 671. *Raii hiſt.* 864.

Umbel multifid ſubtrifid bifid; involucels ovate; leaves lanceolate; branches barren.

91. Euphorbia hibernica. *Iriſh Spurge.*
Lin. ſpec. 662. *Reich.* 2. 456. *amœn.* 3. 128. *Hudſ. angl.* 210. *With.* 499. *Krock. ſileſ. n.* 738.

Tithymalus hibernicus, vaſculis muricatis erectis. *Dill. elth.* 387. *t.* 290. *f.* 374.

T. hibernicus. *Merr. pin.* *Raii ſyn.* 312. *hiſt.* 1888. *ſuppl.* 666.

Umbel multifid bifid; involucels ovate; leaves oblong emarginate ſomewhat villoſe underneath; ſtem ſimple; capſules warted-ramentaceous.

92. Euphorbia dendroides. *European Tree-Spurge.*
Lin. ſpec. 662. *Reich.* 2. 456. *amœn.* 3. 128.

Tithymalus myrtifolius arboreus. *Bauh. pin.* 290. *Mor. ſ.* 10. *t.* 1. *f.* 12.

T. arboreus. *Alp. exot.* *Raii hiſt.* 864.

T. dendroides. *Camer. epit.* 965. *Bauh. hiſt.* 3. 675.

Umbel dichotomous; involucels ſubcordate, the primary ones three-leaved; ſtem arboreous.

93. Euphorbia amygdaloides. *Wood Spurge.*
Lin. ſpec. 662. *Reich.* 2. 457. *amœn.* 3. 126. *mant.* 394. *Hudſ. angl.* 210. *With.* 499. *Engl. bot. t.* 256. *Krock. ſileſ. n.* 739. *Villars dauph.* 3. 832.

T. characias amygdaloides. *Bauh. pin.* 290. *Ger.* 403. 9. *emac.* 500. 9. *Mor. ſ.* 10. *t.* 1. *f.* 1. *Raii hiſt.* 863.—vulgaris. *Park. theat.* 186. 1.

T. ſylvaticus toto anno folia retinens. *Bauh. hiſt.* 3. 671.

Eſula caule craſſo. *Rivin. tetr.* 227.

Umbel dichotomous; involucels perfoliate orbiculate; leaves obtuſe.

94. Euphorbia ſylvatica.
Lin. ſpec. 663. *Reich.* 2. 457. *mant.* 394. *Jacqu. auſtr.* 4. *t.* 375. *Pollich. pal. n.* 463. *Krock. ſileſ. n.* 741. *Villars dauph.* 3. 832.

Tithymalus ſylvaticus. *Scop. carn. n.* 572. *Hall. helv. n.* 1045.

T. lunato flore. *Col. ecphr.* 2. 56. *t.* 57.

T. ſylvaticus, lunato fl. *Bauh. pin.* 290. *Mor.* 335. *ſ.* 10. *t.* 1. *f.* 3.

Ger. em. 499. 8. *Park.* 186. 2. *Bauh. hiſt.* 3. 672. *With.?*

Umbel quinquefid bifid; involucels perfoliate ſubcordate, leaves lanceolate quite entire.

95. Euphorbia Characias. *Red Spurge.*
Lin. ſpec. 662. *Reich.* 2. 457. *mant.* 394. *amœn.* 3. 126. *hort. cliff.* 199. *ups.* 142. *Hudſ. angl.* 211. *With.* 500. *Jacqu. ic. collect.* 1. 57. *Krock. ſileſ. n.* 740. *Villars dauph.* 3. 831.

Riv. tetr. *t.* 115. Eſula caulo craſſo. *With.*

Umbel multifid bifid; involucels perfoliate emarginate; leaves quite entire; ſtem becoming ſhrubby.]

96. Euphorbia cretica.
Mill. dict. n. 28.

Tithymalus creticus characias auguſtifolius villoſus & incanus. *Tournef. cor.* 1.

Umbel multifid bifid, involucels orbiculate, leaves linear-lanceolate villoſe.

[97. Euphorbia linearis.
Retz. obſ. 3. 32. *n.* 56.

Dichotomous; peduncles ſolitary; leaves oppoſite, linear, quite entire.

98. Euphorbia roſea.
Retz. obſ. 4. 26. *n.* 82.

Dichotomous; leaves obovate, oblique at the baſe, toothletted at the tip; ſtem depreſſed diffuſed.

DESCRIPTIONS, &c.

Theſe are milky plants, moſtly herbaceous, ſeveral however ſhrubby, upright for the moſt part, very few of them creeping; ſome are leafleſs, but moſt of them are leafy. Stems angular or tubercled, or more frequently cylindric or columnar; unarmed, or in the angular ſorts reſembling the upright Cactuſes and armed with prickles, which are either ſolitary or in pairs, placed in a ſingle row on the top of the ridges. Such as have leaves, have them ſimple, moſt frequently alternate and naked, in ſome ſorts however they are oppoſite and are then commonly attended with ſtipules, and in a few they are placed by threes in whorls. Peduncles in the leafleſs ſorts naked, bearing from one to three flowers; in the leafy ones axillary, but more frequently from two, to five or more in a terminating umbel; each ſometimes in a many-flowered head, but more often dichotomous, trichotomous, or even tetrachotomous, with ſingle flowers between the diviſions; at the baſe and in the forkings having bractes in number the ſame with the peduncles, forming a ſort of involucre.

Juſſieu doubts whether each ſtamen being jointed, and accompanied with chaffs, and breaking forth at different times, may not (as in Box) be conſidered as ſo many one-ſtamened male flowers encircling one female flower in a common calyx or involucre. If ſo, the flowers of Euphorbia ſhould be regarded as compound; and the plants as belonging to the claſs Monoecia[a].

The juice of every ſpecies of Spurge is ſo acrid, that it corrodes and ulcerates the body wherever it is applied; ſo that it is ſeldom uſed internally. Externally it is dropped on warts or corns to remove them; and in the hollow of a decayed tooth, to remove the pain by deſtroying the nerve, or it is rubbed behind the ears to give relief in the tooth-ach by bliſtering[b].]

1. Stem triangular, compreſſed, ſucculent, riſing to the height of eight or ten feet, and ſending out many irregular ſpreading twiſting branches, for the moſt part three-cornered, but having ſome two, and others four angles; at their extremities are a few ſhort roundiſh leaves, which ſoon fall off; and near theſe come out now and then a few flowers, which have five thick whitiſh petals, with a large three-cornered germ in the centre; they ſoon drop off without producing ſeeds.

It grows naturally in the Eaſt Indies, whence the plants were brought to the gardens in Holland, and thence communicated to moſt of the curious gardens in Europe. [Mr. Miller cultivated it at Chelſea, in the year 1731[c].]

This has generally been taken for the true Euphorbium, and as ſuch has been directed for medicinal uſe; but it is from the ſecond ſort that the drug now imported under that name in England is taken. Linneus ſuppoſes the ſeventh to be the ſort which ſhould be uſed; but as they are all nearly of the ſame quality, it may be indifferent from which this drug, which is the inſpiſſated juice of the plant, is taken.

β. Has alſo a naked three-cornered compreſſed ſtalk, ſending out a great number of erect branches, which are alſo generally three-cornered, but ſometimes four-cornered; they are armed with ſhort crooked ſpines, but have no leaves, nor have the plants produced flowers here. This alſo is a native of India.

2. In its native country, the Canary iſlands, this grows to the height of twenty feet or more, but in England it is rarely ſeen more than ſix or ſeven. The ſtem is very thick, green and ſucculent, and has four or five large angles, cloſely armed with black crooked ſpines, which come out by pairs at every indenture: it ſends out from every ſide large ſucculent branches of the ſame form, which extend to the diſtance of two or three feet, and then turn their ends upwards, ſo that when the plants are well grown, they have ſome reſemblance to a chandelier, they have no leaves, but are cloſely armed with black ſpines like the ſtem: at the ends of the branches come out the flowers, which are ſhaped like thoſe of the firſt ſort.

[According to Linneus, a ſeſſile flower comes forth below each pair of prickles, on each ſide; with a ſhorter ovate concave green bracte. Calyx cloſed by five converging purple ſegments. Petals five placed on the outſide of the calyx, dark purple ſeſſile fleſhy entire very obtuſe[d].

The flowers appear in march and april. It was cultivated in 1697, by the Ducheſs of Beaufort[e].

3. Stem ſix feet high, with prickles in pairs and aſcending branches. Leaves many, ſcattered, almoſt wedge-ſhaped, rounded at the tip, three inches long, quite entire, fleſhy, ſmooth. Corolla none. Calyx fleſhy, ventricoſe, red within, green without. Stamens ſhort, about forty. Native of Cochinchina, where the leaves are eaten boiled with other herbs[f].]

4. Stem roundiſh, upright, ſucculent, about three feet high, putting out ſeveral branches on the ſide, of the ſame form; the angles are armed with long, ſingle, black ſpines: at the ends of the branches come out ſmall flowers, which are ſometimes ſucceeded by ſmall fruit.

[Native of the Cape of Good Hope. This was cultivated in 1731[g].]

5. Stems roundiſh, ſwelling out in the middle, and having knobbed angles, between which come out long ſtraight ſpines; theſe ſtems are two feet high, and put a few branches from their ſide of the ſame form, at the ends of which flowers are produced, ſitting cloſe upon the angles; they are ſmall and of a yellowiſh green colour.

[This differs from the preceding in having the angles doubled and ſwelling a little; and the ſpines ſingle between the tubercles, which are placed longitudinally[h]. Native of the Cape of Good Hope. It flowers in july and auguſt, and was cultivated in 1759[i].

6. This ſort has ſtalks and branches very like thoſe of the next, but much more ſlender; the ſpines of this are ſingle, and thoſe of the other double; and the ends of the branches in this are cloſely ſet with flowers on every angle.

[Native of the Cape of Good Hope. It flowers in june and july, and was cultivated in 1731[k].]

7. This puts out many ſtalks juſt above the ſurface, which are thick, ſucculent and roundiſh, having eight or ten angles whilſt they are young, but as they grow old they loſe their angles and become round; the branches grow diſtorted and irregular, firſt horizontal, but afterwards turning upwards; the angles are armed with ſmall crooked ſpines; and on the upper part of the branches, in june and july, come out the flowers; they are ſmall, and of a greeniſh white. It grows naturally in Africa.

[Gerarde calls this *the poiſonous Gum Thiſtle.* He cultivated it in his garden; " his friend maſter William Martin, a right expert Chirurgion, having procured him the plants, by his ſervant that he ſent to St. Crux in Barbary, as Chirurgion of a ſhip: he could not however keep them through the winter."

8. This is a ſhrub of a cubit high, ſpreading and branchy: branches about the thickneſs of a finger, ſulcated longitudinally; in the interjacent channels are inſerted three prickles; of which the exterior are very ſhort and bent downwards; the middle one about an inch long, ſubulate, ſpreading, and curving downward. The flowers ſpring by threes from the boſoms of the prickles, and are ſeſſile: the ſtamens ſix in number; two in each angle of the flower: the piſtil does not ariſe from the ſide, as in many others. Native of Arabia[l].]

9. Stem upright, ſtrong, five or ſix feet high, with irregular angles, and protuberances oblique to the angles; the lower part is naked, and the upper part branching, the branches are armed with crooked ſpines: at every protuberance and at the top are oblong leaves of a lucid green, very ſmooth, entire,

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[a] Juſſieu gen.
[b] Withering.
[c] Hort. kew.

[d] Mant.
[e] Hort. kew.
[f] Loureiro.
[g] Hort. kew.
[h] Linn. ſpec.
[i] Hort. kew.
[k] Ibid.
[l] Forſk.

and rounded at the end; theſe fall off in ſpring, and the plants remain naked for ſome months, and then (in june and july) the flowers come out; they ſit cloſe to the branches, and are of a greeniſh white colour; the leaves come out in the autumn.

[Loureiro adds, that the ſtem has four or five angles; that the branches are long, diffuſed, unjointed; the ſtem-leaves few, at the end ſcattered, thick, ſmall; and the flowers ſolitary, ſcattered, ſubterminating. Native of the Eaſt Indies and Cochinchina. Much uſed for hedges, on account of its ſtrong thorns. Cultivated in 1699, in the royal garden at Hampton Court.[m]

10. *Trunk* fleſhy, three inches in diameter, ſmooth: ridges eight, ten or more, broad at the baſe and keeled: keels flower-bearing, marked with ſcars of the peduncles and with glands alternately. *Peduncles* cylindric, the thickneſs of a pigeon's quill, jointed, with very ſhort villoſe hairs ſcattered over them, uſually firſt trichotomous, then dichotomous, ſeldom ſimple. *Bractes* at the diviſions of the peduncles and at the baſe of each flower oppoſite, oblong, ſharpiſh, preſſed cloſe, a line in length. *Calyx* bell-ſhaped, a little longer than the bractes, with a five-cleft border; the clefts ovate, obtuſe, bent in, concave. *Petals* five, roundiſh-kidney-form, very blunt, twice the ſize of the clefts of the calyx, ſpreading, fleſhy, convex, green, and pierced with a few ſmall holes. *Filaments* twenty and upwards, a little longer than the calyx, ſubulate, villoſe. *Piſtil* none.—It flowers from may to ſeptember.—Native of the Cape of Good Hope. Introduced by Fr. Maſſon, in 1774[n].]

11. This has thick, roundiſh, ſucculent ſtalks, which are ſcaly; they ſend out many branches from their ſides of the ſame form, which are twiſted, and run one over another, ſo as to appear like a parcel of ſerpents, whence it has the appellation of Meduſa's head: at the end of theſe are narrow, thick, ſucculent leaves, which drop off; and round the upper part of them the flowers come out: theſe are white, and of the ſame form with thoſe of the other ſorts, but larger; they are frequently ſucceeded by fruit.

β. Little Meduſa's head has a thick ſhort ſtalk, ſeldom more than eight or ten inches high, from which come out a great number of ſlender trailing branches, about a foot in length, intermixing and having the ſame appearance with the other, but ſmaller and much ſhorter: the ends are beſet with narrow leaves, between which the white flowers come out.

[This ſpecies was cultivated in 1731, by Mr. Miller. It is a native of Africa[o].

12. Native of the Cape of Good Hope; a perfectly ſmooth ſpecies, abounding with a milky juice, which ſeems ſcarcely acrid: ſtem and branches erect and round; gradually thickening upwards till they arrive at the diameter of an inch: leaves ſeſſile, ſpatule-ſhaped and elongated; very entire, and about four inches long; with a prominent back-rib: peduncles one-flowered, axillary, ſolitary; coated with lanceolate bractes: at the tops there are four or five larger bractes, forming a bell-ſhaped involucre, in which is contained a ſeſſile flower with a pale yellow calyx, and bright-green petals; anthers twin on each filament: ſtyle long and upright[p].

Native of the Cape of Good Hope. Introduced by Fr. Maſſon in 1774. It flowers from january to auguſt[q].]

13. This is one of the ſmaller ſhrubby ſpecies, and has a ſcaly and tuberous branched ſtem; the petals are each three-toothed: the leaves are extremely ſmall, and are chiefly produced toward the tops of the branches; they are but few in number, and reſemble in ſome degree thoſe of the Herniaria hirſuta: the flowers are large in proportion to the plant, and ſpring, to the number of three or four, from the top of ſome of the upper branches: the branches in this ſpecies are covered over with prominent tubercles or thick ſcales.

Native of the Cape of Good Hope. Cultivated in 1731. It flowers in ſeptember and october[r].]

14. Stems many taper ſucculent, about four feet high, and requiring ſupport; they have a light-green bark, and their lower parts are naked, but their upper parts have oblong ſmooth entire leaves, placed alternately on every ſide: flowers in ſmall cluſters at the ends of the branches, of a yellowiſh green colour, and ſometimes ſucceeded by ſmooth round fruit, but the ſeeds rarely ripen in England. It grows naturally on the African ſhore in the mediterranean; [and was cultivated in 1732, by James Sherard, M. D. at Eltham[s].

15. Native of Madeira and the Canary iſlands, whence it was ſent by Maſſon, and introduced in 1777[t].

16. The whole of this plant is ſmooth. Stem erect, unarmed, jointed, purpliſh: branches dichotomous, covered with leaves at bottom. Leaves ſeſſile, the length of the joints, ſharpiſh, the lower ones erect, the upper ones ſpreading. Stipules roundiſh, minute, pale, ciliate. Flowers at the ends of the branchlets, axillary and at the diviſions, ſolitary, ſmall, peduncled. Peduncles ſhorter than the leaf. Calyx ſmooth, the throat whitiſh with cloſe villoſe hairs. Petals five roundiſh. Capſule nearly the ſize of a Coriander ſeed, ſmooth and quite even. Native of the Caribbee iſlands.

17. Stem woody at the baſe, round and ſmooth at bottom, ſtriated angular and ſubhirſute above: the two lower branches oppoſite, ſhorter than the ſtem, the upper ones alternate. Leaves petioled, very ſmooth, veinleſs; the two loweſt oppoſite, oval, the reſt alternate, linear, attenuated to both ends, an inch and half in length, the uppermoſt larger. Peduncles from the top of the ſtem and branches, in fives or thereabouts, umbelled. Calyx ſmooth, as is alſo the throat. Petals obovate, truncate, yellowiſh-green. Capſules ſmooth, quite even, the ſize of a ſmall pea. Native of the iſland of Dominique; communicated by Monſ. Thouin.

18. Stem unarmed: branches round, ſmooth, with an aſh-coloured bark. Leaves petioled, ſeveral from the tubercles of the branches, unequal, ſmooth, veinleſs, quite entire. Peduncles at top, from the ſame bud with the leaves, round, ſmooth: flowers on lateral, horizontal pedicels, having a ſcale or two at the end. Calyx ſmooth. Petals obovate, truncate. Capſule villoſe: the pedicel ſcarcely beyond the calyx. Native of Arabia Felix[u].

19. Native of the Canary iſlands, whence it was introduced by Maſſon in 1779[x].]

20. Stem taper ſucculent, eighteen or twenty feet high, ſending out many branches of the ſame form, ſubdividing into many ſmaller; they are jointed, but at a great diſtance, ſmooth, and of a deep-green colour, having a few ſmall leaves at their extremities, which ſoon fall off. As the plants grow older, their ſtalks become ſtronger and leſs ſucculent, eſpecially towards the bottom, where they turn to a brown colour, and become a little woody. The branches grow diffuſed and intermix with each other, forming a ſort of buſh towards the top. It does not produce flowers here. [Native of the Eaſt Indies. Cultivated in 1731, by Mr. Miller[y].

21. This is a wandlike ſuberect plant, ſix feet high, the whole of it abounding in a white bitteriſh milky juice. Stems numerous, round, ſmooth, weak, very pliant, branched, the thickneſs of a finger or of the thumb, the older ones aſh-coloured, the younger green. Leaves ſome obtuſe others acute, coriaceous, quite entire, petioled, deep green, two or three inches long, deciduous except on the branches, the middle dorſal nerve and the petiole augmented by a longitudinal lamella more or leſs waved and conſpicuous, at firſt frequently tomentoſe on both ſides, but with the upper ſurface very even, and the edges extremely waved; afterwards both ſides always become flat and ſmooth.

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[m] Moriſon. [n] Hort. kew. [o] Ibid.
[p] Jacquin. [q] Hort. kew.

[r] Hort. kew. [s] Ibid. [t] Ibid.
[u] Vahl. [x] Hort. kew. [y] Ibid.

Peduncles one-flowered, ſhort, aggregate about the extremities of the branchlets, coming out principally when the plant is without leaves. Flowers void of ſcent, of a beautiful ſcarlet colour, and on account of their ſingular ſtructure perhaps claiming a right to be of a diſtinct genus, though this ſpecies has moſt characters the ſame with the other Euphorbiums. Calyx two-leaved, two-valved, falling off as the flower opens; the leaflets ovate, concave, acuminate, of the ſame colour with the corolla; which is one-petalled, irregular, four-parted, the upper ſegment ſubtriangular, emarginate, obtuſe, incumbent, the two lateral ones oblong, obtuſe, produced forwards, converging, double the length of the upper one, the fourth very ſmall, oblong, obtuſe, placed between the lateral parts below the upper one. Nectareous glands four, roundiſh, ſeated in the hollow of the corolla formed of the upper ſegment and the united part of the lateral ones, two of theſe are at the baſe of the upper ſegment, and the two others cloſe the ſide of the former. Filaments about ſixteen, awl-ſhaped, unequal. Germ ovate, hanging on the outſide of the corolla by a very long pedicel; ſtyle awl-ſhaped, longer than the germ, permanent: ſtigmas three, reflex, half-two-cleft.

In South America, a ſtrong decoction of this plant, eſpecially of the ſtalks, is given in venereal caſes, and in ſuppreſſions of the menſes.—Native of the Caribbee iſlands and the neighbouring continent[a].]

Mr. Miller makes two ſpecies of this under the names of Tithymalus myrtifolius and laurocerasifolius (myrtle-leaved and laurel-leaved Spurge) The firſt of theſe grows naturally near Carthagena in America, whence Mr. Robert Millar, ſurgeon, ſent the branches, which were planted here, and ſucceeded: this riſes with ſhrubby ſucculent ſtalks to the height of twelve or fourteen feet, which are too weak to ſtand without ſupport, though they are frequently as large as a man's little finger; but their leaves being ſucculent, are ſo heavy as to weigh down the branches if they are not ſupported. The leaves are oval, and terminate in acute points; they are two inches and a half long, and one inch and a half broad near their baſe; they are about the thickneſs of Bay leaves, and are ranged alternately on two ſides of the branches, to which they fit cloſe. The flowers are produced at the end of the branches three or four together; they are of a ſcarlet colour, of one petal in ſhape of a ſlipper.

β. The ſecond grows naturally in Barbadoes, and moſt of the other iſlands in the Weſt Indies, where the Engliſh inhabitants know it by the title of Poiſon Buſh; this has thick, ſhrubby, ſucculent ſtalks, which will grow to the height of ten or twelve feet; theſe are larger than thoſe of the firſt ſort, and are garniſhed with oblong oval leaves ending with blunt points; they are above three inches long, and an inch and a half broad in the middle, of a very thick conſiſtence, and of a dark green colour, ranged alternately on two ſides of the ſtalk. The flowers grow at the end of the branches; they are ſhaped like thoſe of the firſt ſort, and are of a deep red colour.

This whole plant abounds with an acrid milky juice, which will draw bliſters on the fleſh wherever it is applied, and if it mixes with the blood, I have been credibly informed, it becomes a deadly poiſon; ſo that if the points of arrows, or the edges of ſwords are rubbed with this juice, it becomes fatal to any animal wounded with thoſe weapons.

[It was cultivated in 1732, by Sir Charles Wager[a].]

22. This is an annual plant, from two to three feet high. Some of the leaves are narrow and entire, others ovate; and divided in the middle almoſt to the midrib, in ſhape of a fiddle; they alſo vary in colour, ſome being inclinable to purple, others of a light green; their foot-ſtalks are ſhort. The flowers are produced in ſmall umbels at the ends of the branches; they are of a greeniſh white, and are ſucceeded by ſmall round capſules. It grows naturally at La Vera Cruz, whence Dr. Houſtoun ſent the ſeeds.

[Moriſon ſpeaks with admiration of the heterogeneous leaves in this plant, a circumſtance which is ſince found not to be uncommon particularly in the plants from the South ſeas. He ſpeaks of this ſpecies of Spurge as attaining the height of a man, even in this country, with a trunk an inch in thickneſs and more, ſpreading out into ſtraight, long, pliant branches; having ſome leaves three or four inches long, and narrow, reſembling thoſe of the narrow-leaved willows, others on the ſame branch ſoft, like thoſe of an Atriplex or Orach, tending to a ſea-green colour, ſinuated, and from an inch to near two inches in breadth, others again very long and narrow. Varieties are obſerved in this plant, ſome having a reddiſh and ſomewhat wrinkled bark, whilſt in others it is green and ſmooth, the leaves alſo being ſubject to vary much; as might be remarked in the royal garden at Hampton Court, where this Spurge was cultivated in 1690[b]. This being ſhrubby, and ſo large a plant, cannot be the annual ſpecies of Miller deſcribed above. It belongs, as Retzius has obſerved, to the third ſection.]

23. Stem upright, ſix or ſeven feet high, covered with a light brown bark, and dividing at top into many branches. Leaves ſmooth, and of a beautiful green, but falling away in winter. Flowers from the ends of the branches, yellow and ſmall, ſoon falling away without fruit. Native both of the iſlands and continent of South America. Mr. Miller received it from Tobago and Carthagena, and the Dutch gardens have it from Curacoa. [It was introduced in 1690 by Mr. Bentick[c].]

24. This is an annual plant, riſing with an upright ſtalk about a foot high, and dividing into a great number of branches, which ſpread very wide on every ſide. Leaves roundiſh-heart-ſhaped, on pretty long foot-ſtalks. The flowers come out ſingly from the diviſions of the ſtalk; they are ſmall, of an herbaceous colour, and are ſucceeded by ſmall, round capſules. Native of South America: the ſeeds were ſent to Mr. Miller from La Vera Cruz, by Dr. Houſtoun.

[25. The whole of this is ſmooth. Stem unarmed: branches dichotomous at the end, three and four times divided. Leaves on ſhort petioles, longer than the internodes, ſhorter and narrower on one ſide of the baſe, terminated by a minute dagger-point, even, veinleſs, glaucous-green. Peduncles at top from the forks of the branchlets, ſolitary. Flowers ſmall. Capſule ſmooth, even, the ſize of a Coriander ſeed. Native of the Eaſt Indies[d].

26. This is ſo like Marjoram, that it cannot but be taken for it at firſt ſight. It is a native of the iſland of Aſcenſion[e], and the Friendly iſles.

27. This alſo is a native of the Friendly iſles[f].]

28. This is an annual plant, which riſes with a branching ſtalk about two feet high, [herbaceous diffuſed, ſubdivided, round, coloured, ſmooth; branches alternate, ſpreading, pubeſcent. Leaves petioled, oppoſite, oblique at the baſe, ovate, obtuſe, veined, glaucous underneath, ſometimes purpliſh. Stipules ſimple, oppoſite, very ſhort, blunt, between the petioles. Peduncles axillary, alternate, erect, dichotomous, commonly longer than the leaves, with the flowers crowded together. Calyx very minute. Petals four, convex, thick, green. Filaments two or three, longer than the corolla (not many breaking out at different times) with rudiments of others at the baſe. Anthers in pairs (like bifid filaments) yellow. Germ ſmooth. Capſule pedicelled. Native of moſt of the iſlands in the Weſt Indies, a weed in cultivated grounds[g]. Every part of it is poiſonous to hogs[h]. Cultivated in 1739 by Mr. Miller.

[a] Jacquin.

[a] Hort. kew.

[b] Mor. hiſt.

[c] Hort. kew.

[d] Vahl.

[e] Linn. ſpec.

[f] Forſter.

[g] Swartz.

[h] Sloane.

29. Native of Madeira; where it was found by Mr. Francis Maſſon. Introduced in 1784. It flowers in april and may.

30. Stems herbaceous, a ſpan in length, procumbent, round, branched, red. Leaves oppoſite, on very ſhort petioles, bluntiſh, ſmooth, obſcurely three-nerved, the upper ſurface green, the under glaucous. Flowers on ſhort pedicels, often in threes, but ſometimes ſolitary. Petals purple. Native of the Weſt-Indies. Cultivated by Mr. Miller in 1758[i].

31. An annual; acrid and milky: flowering in gardens in the open air, and readily ſpringing from ſeed: ſtems very numerous, ſpreading cloſely on the ground: leaves oblong, obtuſe, and ſometimes acute; obſcurely denticulated on the ſuperior part; ſmooth on the ſurface, but edged with hair on the back and margin; extremely numerous; and either green, red, or even deep purple; and ſometimes ſpotted; thickly crowded on the tips of the branches in particular: flowers very ſmall, on very ſhort footſtalks, from the boſoms of the leaves: calyx green; petals red, capſule hairy. Native of the iſland of Jamaica[k].

Cultivated before 1660, by Mr. Walker[l].

32. Stem herbaceous, ſubdivided, declined, from three inches to a foot in length, round. Leaves on very ſhort petioles, oppoſite, ſmall, oblique at the baſe, nerved, rough with hairs, paler underneath, ſpotted with red. Stipules in pairs, oppoſite, awl-ſhaped. Peduncles oppoſite, very ſhort, much ſhorter than the leaves; flowers crowded together, pedicelled, minute. Calyx blood-red. Petals four, truncate, thick, blood-red. Filaments four, and not more, awl-ſhaped, from the bottom of the calyx, longer than the corolla. Anthers roundiſh, whitiſh, two-valved. Germ rough with hairs[m]. Native of both Indies. Browne recommends it as a powerful reſolutive and deobſtruent, provoking both ſweat and urine very abundantly.

33. This is ſmaller and much more tender than the foregoing. Stem ſimple, round, covered with reddiſh-brown hairs, and half a foot in height. Leaves oppoſite, bluntly and ſcarcely ſerrate. Peduncles an inch long, coming out alternately from the axils, bear two heads of flowers together. Theſe are both annual. Native of India[n].

34. Native of the Weſt-Indies. Introduced in 1787, by Mr. Alexander Anderſon. It flowers in auguſt and ſeptember. Annual[o].

Browne extolls a decoction of it as an active warm medicine, after a paſſage is procured in the dry belly-ache, by bathing in warm water, or on any occaſion where reſolutive medicines are required.

35. Stem ſlender, ſomewhat hairy, breaking out near the ground into many very ſlender branches, half a foot long, alternate, ſubdividing into others. Leaves at the joints and diviſions of the ſtem and branches, very ſmall, ſeſſile. The whole plant reſembles Thyme. Native of India. Annual[p].

36. Stem upright, round, ſmooth, green. Leaves oppoſite, ſome entire, others ſlightly and obtuſely ſerrate, ſmooth on both ſides. Peduncle axillary, an inch long, alternate, ſuſtaining a very few ſmall flowers[q].—The leaves have frequently a brown ſpot. Calyxes purple. Petals white[r]. Annual. Native of India.

37. Very nearly allied to *E. Chamæſyce*, but the whole every where villoſe-white. Leaves ſlightly emarginate and obſcurely notched[s].

Since this varies with ſtems almoſt ſmooth, and with leaves either ſlightly crenulate or entire, Cavanilles is of opinion that the next is not ſpecifically different from it. According to him, the ſtems are a ſpan high, red, covered with white hairs, with alternate branches. Leaves oppoſite, on very ſhort petioles, lens-ſhaped, margined, narrower at the baſe in front, with a brown ſpot in the middle. Flowers ſubſeſſile between the ſtem and the branch. Petals four, very ſhort, calloſe at the baſe, with a white border obſcurely three-notched. Filaments ſhort, inſerted into the receptacle, coming out at different times, uſually two together: anthers ovate. The pedicel of the germ increaſes gradually: ſtyles ſo ſhort as to be hardly viſible[t].

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[i] Hort. kew.
[k] Jacquin.
[l] Hort. kew.
[m] Swartz.
[n] Burm. zeyl.
[o] Hort. kew.
[p] Burm. zeyl.
[q] Ibid.
[r] Linn. ſyſt.
[s] Linn. ſpec.

Annual. Native of Spain, particularly in the province of La Mancha.

38. Stem depreſſed. Leaves oppoſite, emarginate, the baſe narrower in front. Flowers from the dichotomy. Calyx rufous. Petals white, crenate. Fruit ſmooth; annual[u].

Stems herbaceous, from two to four inches long, round, purpliſh. Branches dichotomous, ſhort, thoſe which bear flowers procumbent. Leaves petioled, oppoſite, ſmall, veined, dotted, purpliſh-green, glaucous underneath. Flowers very minute, crowded, ſubſeſſile. Teeth of the calyx white-ciliated. Petals between theſe, blood-red. Filaments two or three (not more) very minute. Anthers black. Germ bent down: ſtyles blood-red. Seeds roundiſh-angular, black[x].

South of Europe, eſpecially in the kingdom of Valencia in Spain: alſo in Siberia, and Meſopotamia; and by way ſides and barren fields in the Weſt-Indies.

Cultivated in 1752, by Mr. Miller[y].

39. Root annual. Stems herbaceous, an inch and half high, very ſmooth, dark red, as is the whole plant. Leaves ſeſſile, ſeldom green. Involucre three-leaved; leaflets orbiculate, mucronate, three times as large as the ſtem-leaves. Calyx turbinate, very ſmall. Petals red, horned. Capſule ſmooth, ovate. Seeds whitiſh, with red grooves. Native of Spain, near Aranjuez, flowering in april and may[z].

40. This has the habit of E. Chamæſyce. Stems ſeveral, woody, filiform, diffuſed, dichotomouſly branched, purpliſh, ſcarcely hairy. Leaves on ſhort petioles, only half the ſize of thoſe in E. Chamæſyce, thickiſh, appearing hairy with a magnifier, narrower on one ſide of the baſe. Flowers peduncled, very minute: peduncles only half the length of the leaf. Capſule leſs than a muſtard ſeed, ſomewhat hairy[a].

41. Root long, ſlender, fibrous. Stem forked immediately from the root: branches trailing, again forked of irregular lengths, frequently purple. Flowers on peduncles. Seeds ſmooth, tipped with purple[b].—According to Scopoli, ſtem round. Edges of the leaves purple. Petals red, roundiſh.

According to Vahl, ſtems a foot high, ſmooth, as is the whole plant; the internodes an inch and half long: branches alternate, dichotomous, frequently divaricate. Leaves oppoſite, petioled, thickiſh, veinleſs, narrower on one ſide, and ſhorter towards the baſe, broader on the other, widened at the baſe into an earlet, which is frequently toothletted. Capſules ſmooth.—Annual; flowering in july and auguſt.

Native of the South of France, Spain, Carniola, England, on the ſea-coaſt. Between Penzance and Marketjeu in Cornwall. Near Exmouth in Devonſhire. It is called by Gerarde Iſope Spurge.

42. Annual. Native of Maryland and Virginia. It has the ſtature and appearance of Chamæſyce, but the leaves have a lobe at the baſe on one ſide. Stems procumbent, dichotomous and divaricating[c].

43. Stems herbaceous; upright but weak, entirely green, dichotomous, tender, from two to three feet high. Leaves acute, ſhining, an inch and half long, few, on petioles an inch in length. Peduncles terminating, upright, ſlender. Calyx bell-ſhaped, hirſute within. Petals two, roundiſh, quite entire, white. Capſules ſhining, ſmooth, ſmall. Native of Carthagena in New Spain, in wet graſſy places[d].

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[t] Cavanilles.
[u] Linn. mant.
[x] Swartz.
[y] Hort. kew.
[z] Cavanilles.
[a] Vahl.
[b] Woodw. Mſſ.
[c] Linn. ſpec.
[d] Jacquin.

Swartz has deſcribed a plant under the ſame name a native of Jamaica; but he doubts whether it be the graminea of Linneus. His deſcription certainly does not agree with that of Jacquin given above.

44. Root creeping. Stems a ſpan high, erect, dichotomous. Leaves oppoſite (only one or two of the loweſt alternate), lanceolate, even, quite entire, the length of the internodes. Peduncles axillary, ſolitary, one-flowered, the length of the leaves whilſt in flower, but twice as long when in fruit. Calyx thick. Native of Virginia and Canada.

45. Stem erect, a ſpan or a foot high. Leaves oval, quite entire, ſmooth, the ſize of Purſlain leaves or larger, (one or two of the loweſt only alternate), obtuſe, obſoletely emarginate. Stem dichotomous, in the firſt diviſion ſometimes trifid and three-leaved. Peduncle long, as in the preceding. Native of Philadelphia[e].

46. Stem ſhrubby, from one to two feet high, very much branched, round, ſmooth: branches almoſt filiform, long, ſubdivided, thickened at the petioles, ſmooth, red. Leaves oppoſite, ſmall, the lower ones orbiculate, the upper obovate, or oblong or roundiſh, ſmooth, glaucous underneath, flat, ſpreading; on very ſhort red petioles. Flowers minute, axillary, eſpecially towards the ends of the branches; on very ſhort peduncles. Calyx four or five-toothed, hirſute within. Petals four, thick, roundiſh, depreſſed, yellow. Filaments two, very minute: anthers roundiſh, whitiſh, large. Germ bent down: ſtyles reflex: ſtigmas ſimple, acute. Some of the flowers are barren, and have a cylindric germ, a ſingle ſtyle, which is long and trifid at top. Native of Jamaica, on the cooler mountains[f].

47. This is a ſmall ſhrub, a hand or little more in height, branched at the baſe: branches ſimple, round, covered with leaves, toothletted where the leaves fall, ſmooth, as is the whole plant. Leaves ſeſſile, crowded, wedge-ſhaped, ſmall, mucronate, toothletted at top, but at bottom quite entire. Umbel terminating, twice bifid. Involucres five-leaved, oblong, quite entire: involucels two-leaved. Petals quite entire. Stamens numerous: filaments whitiſh. Native of Portugal[g].

48. Root annual. Stem upright, nine inches high, round, ſmooth and branched; at bottom harder, more ſlender, and of a reddiſh colour, leafy and milky: branches few, not growing in any regular order, the lower ones longeſt. Leaves on the ſtem alternate. Involucres obovate. Involucels cordate, rounded and obtuſe at the end. Petals (or nectaries) four, yellowiſh green, creſcent-ſhaped. Stamens ſeldom more than two or three viſible together, beyond the calyx. Capſule ſmooth (or ſcabrous at the edge[h],) ſmall, roundiſh-three-cornered, having two membranaceous, waving, very narrow creſts or keels at the corners, perforated below the top, of a papery ſubſtance, two-valved. Receptacle columnar, central, ſlender, terminated by a depreſſed ſpongy head. Seeds ovate, on one ſide convex and ſcrobiculate, in rows, on the other angular, with a middle ridge, whitiſh-aſh-coloured, with a conical fungoſe ſolid white umbilicus at top[i].—According to Linneus, all the flowers are hermaphrodite; but Retzius affirms that it is often polygamous, with one or two flowers on an upright pedicel, bearing petals, ſtyle and ſtigmas, but no germ or anthers.

Native of moſt parts of Europe, in kitchen gardens and other rich cultivated ſoil: flowering in july and auguſt.

It may eaſily be diſtinguiſhed from *E. helioſcopia*, which has ſome reſemblance to it, and is frequently found with it, by having the leaves entire about the edge, and the petals furniſhed with a horn at each end[k].

β. This variety has ovate-lanceolate, ſharp leaves. The involucre is of the ſame form with the leaves; but the involucels are obliquely cordate[l].

In Savoy, about Montpellier, &c.

49. Very nearly allied to the next ſpecies. It differs from it, however, in having the leaves broader, of a lanceolate form, and blunter: the involucels manifeſtly cordate-ſickle-ſhaped, mucronate: the diviſions of the umbel more dichotomous: the ſtem leſs branched, and a little higher[m].

According to Villars, it is very low and much branched, the ſtem-leaves fall immediately, it retains only thoſe of the diviſions, which are repeated ſeveral times, ſpread out and bent back in ſuch a manner, that the whole plant reſembles a little buſh; the elliptic petals have two very ſmall threads, and ſometimes only one; fruit ſmooth, and a little prolonged.

Native of the South of France, Switzerland, Germany, Auſtria, &c.

50. Root annual. Stem upright, branched, very leafy, about ſix inches high. Branches from the lower part of the ſtem. Leaves preſſed to the ſtem, ending very ſharp. Umbel trifid, quadrifid, ſeldom quinquifid, dichotomous. Involucres lanceolate-linear; involucels ovate-oblong, acuminate, oppoſite, often irregular. Calyx ſmooth. Petals or nectaries four, each furniſhed with two little horns. Stamens (from five to nine) generally about two viſible[n]: the filaments ſwelling out into a globular form cloſe under the anthers[o]. Capſule ſmooth[p].

This ſmall and delicate ſpecies is found in corn-fields in many parts of Europe: flowering from july to ſeptember.

β. Linneus affirms that this ſpecies is ſharp-leaved on hills, retuſe in meadows. Cavanilles on the contrary ſays that he has found the latter on ſandy hills, and the former in corn-fields: and Krocker has obſerved them both in corn-fields. Cavanilles ſeparates them, becauſe in E. retuſa the corolla is five-petalled, and the leaves emarginate at the end. This is found about Montpellier, in Spain and Sileſia.

Profeſſor John Martyn, in his edition of Tournefort's hiſtory of plants about Paris, ſays that there is a Spurge growing abundantly all over Cambridgeſhire in the corn, differing from *Titymalus ſ. Eſula exigua, Bauh. pin.* only in having the leaves blunt at the end; which he is perſuaded is what Mr. Dent inſerted in the appendix of the Cambridge catalogue, and Mr. Ray received into his ſynopſis and hiſtory under the name of *T. ſegetum longifolius*; perhaps (ſays he) it may be *T. ſ. Eſula exigua foliis obtuſis.* Bauh. pin. &c. See n. 72.

51. Stems hirſute. Leaves attenuated at the top. Native of Carthagena in New Spain, on the ſandy coaſt[q], alſo of Jamaica.

52. Root tuberous. Leaves nearly an inch and half in length, and almoſt half an inch in breadth; on petioles two or three inches long, ſpringing from the root; they are blunt at the end, and ſometimes emarginate. The ſtems are ſcarcely a hand and half in height, naked, dividing at top into two peduncles, each ſuſtaining two flowers; there are two leaves at the diviſion. Capſules large, hairy. Native of Africa[r].

53. Native country unknown: a ſmooth lacteſcent ſpecies: ſtem and branches ſhrubby, round; the older ones aſh-coloured, the younger reddiſh-brown, marked by the cicatrices of the fallen leaves: the upper branches green: the branches are all progreſſively trichotomous; leaves very narrow and lanceolate, obtuſe, entire, with very ſhort footſtalks, and very numerous; the terminating umbels are generally trifid, with dichotomous rays; the leaves forming the ſmaller umbels are roundiſh; petals four, ſometimes five, dull yellow, roundiſh, flat, and obtuſe; perianth hairy; anthers yellow-green: germ pale-green; capſule ſmooth[s].]

54. Stem upright, ſucculent, from three to four feet high, with oblong ſmooth ſeſſile leaves; the upper part dichotomous, and an umbel comes out from each diviſion; that in the firſt diviſion being

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[e] Linn. amoen.
[f] Swartz.
[g] Vahl.
[h] Curtis, Linn. ſuec. Retz.
[i] Gærtner.
[k] Curtis.
[l] Retz.
[m] Krocker.
[n] Curtis.
[o] Withering.
[p] Linn.
[q] Jacquin.
[r] Ray.
[s] Jacquin.

the largeſt, and thoſe in the upper the ſmalleſt. The flowers are of a greeniſh yellow colour, appear in june and july, and the fruit follows ſoon after.

[All the involucres are cordate. There is one flower between the four rays of the umbel, which is male; the others are hermaphrodite. Filaments as far as thirty-ſix (Haller ſays thirty-eight,) but a third part of them uſually abortive. Capſules ſmooth[t]. What Linneus calls the petals, are in this ſpecies evidently hollow nectaries, containing juice, and putting forth a horn on each ſide[u]. The parts in this ſpecies being large, it is the moſt proper for acquiring a juſt idea of this difficult genus.—It is a native of France and Italy, and has been long in the Engliſh gardens; being common there in the time of Gerarde.

55. Root annual. Stem herbaceous, more than half a foot in height, round. Leaves ſmooth, oblique, roughiſh about the edge. Involucre conſiſting of about four leaves, which are oblong-ovate, blunt, broader than the leaves, ſcarcely ſerrate. Involucels ovate, truncate at the baſe. Petals yellowiſh, with two or three teeth. Capſules ſmooth. From the lower axils of the leaves proceed barren branches. In the form of the leaves it approaches near to *E. exigua retuſa*, but in that they are only a line in breadth, whereas in this they are a finger broad[x]. Native of Spain, and the South of France.

56. Root annual, of a ſlender fuſiform figure. Stem round, upright, red at the baſe, half a foot high, ſo branched from the bottom, as to have the appearance of ſeveral ſtems: lower branches aſcending: both they and the ſtem almoſt covered with imbricate leaves. Umbels four-cleft or five-cleft, with the rays ſeveral times dichotomous; the branches are ſometimes divided into a ſimilar umbel, and ſometimes are very dichotomous: hence the plant when grown up becomes ſo ſpreading, and has ſuch an abundance of branchlets and rays as to give it an appearance quite different from what it had when young. Leaves alternate, ſubſeſſile, wedge-ſhaped, truncate, with a ſmall point in the middle, quite entire, flat, not three-toothed or retuſe; in the adult plant they are ſometimes only blunt, without any point on the ſtem and principal branches, and generally fall off. Leaflets of the involucre like the leaves, the ſame number as the rays: of the involucels oppoſite, ſeſſile, quite entire, blunt with a point, oblong, one ſide at the baſe produced towards the ſide, the other obliterated; in the upper diviſions broader, ſhorter, and often retuſe, ſometimes two or three-toothed. Flowers all fertile, ſolitary in the diviſions, ſmall, ſeſſile. Calyx ſmooth, pale. Petals four, yellow, two broader. Germ ſmooth. Seeds brown, much wrinkled. The whole plant is ſmooth. It differs from E. terracina in having the leaves lanceolate, not oblique, nor in the leaſt rugged about the edge. Near Vienna, flowering from july to ſeptember[y].

57. This has a knobbed pear-ſhaped root, from which ariſe two or three ſtalks about a foot and half high. Leaves oblong, hairy, alternate, on every ſide the ſtalk. Flowers in ſmall umbels from the diviſions of the ſtalk, ſmall, greeniſh-yellow, ſeldom producing ſeeds here.

[The barren ſtems have linear-lanceolate, blunt leaves; on the flowering ſtems they are roundiſh-ovate. Umbel quadrifid, then bifid, and no farther. Univerſal involucre four-leaved, the leaflets roundiſh, ſcarcely ſharp. The firſt involucels are obcordate, the latter reniform, ſcarcely mucronate[z]. Native of the iſland of Candia.—Cultivated in 1596, by Gerarde[a].

58. The whole plant is ſmooth. Stem ſhrubby, round. Leaves ſcattered, ſeſſile, an inch and half in length. The univerſal involucres reſemble the leaves. Involucels of the firſt diviſion oval-oblong, ſomewhat emarginate, half the length of the leaves; thoſe of the ſecond diviſion and the floral ones elliptic-roundiſh, emarginate. It flowers in june and july; and was cultivated by Mr. Miller in 1758[b].

59. An upright ſhrub, with branches alternate, ſtrict, very ſimple, ſhort, bearing flowers at the very tip. Leaves ſomewhat crowded, ſmooth, quite entire, ſmaller than the other ſpecies, not larger than in *E. exigua*. Umbels terminating, ſeſſile. Involucre four-leaved; leaflets lanceolate, the length of the umbel. Involucels two-leaved, ovate-rhombed. Umbellet bifid, and divided no farther. Petals in form of a creſcent. Capſules ſmooth. Native of the Cape of Good Hope[c].

60. The branches, as they grow old, dry away and continue on the plant, ſo that it appears as if it had thorns. The flowers are uſually ſolitary. Petals round. Capſules warted.—Moriſon diſtinguiſhes the *raguſinus* of Hermann from the *ſpinoſus* of Bauhin; but they ſeem to be the ſame[d].—Native of the Levant. Cultivated in 1752, by Mr. Miller, edit. 6. n. 16[e].

61. This approaches to *E. dulcis*, but the leaves are more ſcabrous about the edge, and villoſe underneath. Capſules hiſpid, with ſubulate purpliſh briſtles ſcattered over them. Native of Italy and Auſtria[f].

62. Root perennial. Stems ſeveral, ſmooth, firm, ſomewhat woody, green or reddiſh, either ſimple, or a little branched near the umbel, but without any univerſal involucre on the branches. Leaves very ſmooth and even, firm, thickiſh, alternate, ſpreading or horizontal, almoſt ſpatulate, blunt and ſlightly reflex at the end, ſo as to appear emarginate. Umbel moſtly quinquefid, the rays twice dichotomous, the laſt diviſion two-flowered, in the axil one flower, on the extreme branches two flowers, one yellow, with horned petals and naked, the other green, ſupported with two bractes, and abortive. Capſules ſmooth, not grooved, large. Univerſal involucre ovate, terminating in a prickle; involucels cordate, or rather ſemicircular. It abounds in milk.

Vahl remarks, that it is nearly allied to the next ſpecies, but differs from it in having the leaves, involucres and involucels quite entire. The ſtems are a foot high, aſcending, round, warted. Leaves an inch long, narrowed a little towards the baſe, thickiſh, quite entire. Umbel terminating, and often one or two lateral ones. Involucre five-leaved, oblong, of the ſame ſtructure with the leaves. Involucels firmer than common in the other ſpecies, mucronate. Rays of the primary umbel three or four inches long, twice bifid.

Native of the county of Nice[g]. Found alſo by Vahl about Pampeluna.

63. Involucels very finely ſerrate. Petals entire. Fruit red, muricate. It varies with villoſe leaves[h].

Root conſiſting of little ſcaly bulbs. Stem ſmooth, upright, ſimple, a foot high, red at bottom. Leaves ſcattered, ſeſſile, an inch long, obtuſe, quite entire, or very finely ſerrate. Involucres five-leaved, but ſometimes four, three, and even two-leaved. Involucels two-leaved, ſubovate or cordate, unequally toothletted, yellowiſh, to which colour the whole plant is inclined. Flowers ſeſſile. Petals red, creſcent-ſhaped, two-horned. Stamens two to five. Capſule villoſe, warted below the middle. The milk is mild[i].—Native of the South of Europe. Cultivated in 1759, by Mr. Miller[k].

64. The peculiarities of this ſpecies are, that the leaves are quite entire, ſpreading, ſeſſile, acuminate, with the edges pellucid and red—that the leaves and rays of the umbel are very lax: that the colour is yellowiſh: that the flowers are all peduncled, and moſt of them barren, except thoſe at the end: they have five rounded ſhining yellow petals: and the capſule is warted. The milk is mild. It flowers

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[t] Scopoli.
[u] Haller.
[x] Linn. ſpec.
[y] Jacquin.
[z] Linn. ſyſt.
[a] Hort. kew.
[b] Hort. kew.
[c] Linn. mant.
[d] Linn.
[e] Hort. kew.
[f] Linn. ſpec.
[g] Allioni.
[h] Linn. ſyſt.
[i] Haller, Scop. Krock. Vahl.
[k] Hort. kew.

after the end of april.—In ſhady meadows about Idria in Friuli[l].

65. Stems ſhrubby, ſimple, many, villoſe, a foot high. Leaves quite entire, acuminate, ſeſſile. Umbels of four or five rays. The flowers from the firſt diviſion of the rays fertile, peduncled; petals reddiſh brown, hemiſpherical. Capſules the ſize of a pea, echinated with ſoft, reddiſh prickles[m].—Native of the South of Europe. It flowers in june and july: and was introduced in 1785, by Mr. John Græfer[n].

66. Stems rather ſhrubby, a hand's breadth or more high, ſmooth, cylindric, red, eſpecially during the winter. Leaves alternate, ſubſeſſile, wedge-oblong, keeled, ſmooth, but not ſhining, red underneath at the baſe. Branchlets lateral, thoſe from the lower axils barren, at length growing up ſo as to overſhadow the ſtem. Umbels terminating, have three, four, five or ſix ſpreading rays. Involucre like the leaves, but ſhorter and broader. Involucels rhomb-heart-ſhaped. Theſe and the leaves are terminated by a ſharp point. Flowers ſubſeſſile, yellow; the firſt and ſecond male, having very blunt petals, without horns; the reſt hermaphrodite, with horned petals.—In the central flowers, the calyx has five ſides, and five blunt corners, with five ſlight clefts, and the ſegments are more or leſs toothed at the end; the petals are hairy within; the filaments are eight or nine; and the germ is ſubſeſſile. In the lateral flowers, the ſegments of the calyx are four; the petals four; the ſtamens fourteen or more; the filaments ſurrounded at the top with a ring. In all, at the baſe of the flower, are ſeveral flat ſlender ſkinny woolly ſubſtances, cloven at the end. Fruit ſmooth, with the angles muricate[o].

Firſt found by the Rev. Mr. Stoneſtreet in 1711, in the narrow neck of land which joins Portland to Devonſhire. Since that near Exmouth in the ſame county. Abundantly on the ſhores of Cornwall: and near Caernarvon in Wales. It flowers from may to ſeptember. Marked as a ſhrub by Linneus; as perennial in the Kew catalogue; and as annual by Hudſon and Withering. It abides two or three years in gardens.

67. Native of Auſtria: in ſtony places: ſtems five or ſix inches long, procumbent, and but very few in number: ſmaller or ſecondary branches more numerous; each terminated by a roſe of leaves, while the older or lower leaves fall away in ſucceſſion, ſo as to leave numerous ſcars: branch-leaves lanceolate; top and flower-leaves round-cordate; all ſeſſile. Flowers ſmalliſh and yellow: the plant is glaucous, except the bractes or round leaves ſupporting the flowers[p].

68. Of a glaucous or ſea-green colour. Root perennial. Stems upright, or aſcending, numerous, generally red at bottom, thickly imbricated with ſmooth fleſhy leaves, pointing upwards when wild, but open when cultivated, gradually increaſing in ſize from the lower part of the ſtem upwards; the lower ones linear, linear-lanceolate, or oblong, ſeſſile; the upper ones oval-lanceolate, half-ſtem-claſping. Involucre of five heart-ſhaped leaves. Petals entire. Capſules very large, ſmooth[q]; but according to Dr. Withering, rough: all others ſay ſmooth.

On the ſandy ſhores of Europe: with us on the coaſts of Eſſex and Kent: between Southwold and Dunwich in Suffolk; Cornwall.

The juice of Sea Spurge is highly acrid; according to our Gerarde it is the moſt ſo of any ſpecies. He relates, that putting a ſingle drop into his mouth, his throat inflamed ſo, that he hardly eſcaped with his life, by riding to the next farm-houſe, and drinking milk.

69. Perennial. Flowering in july. Native of the iſland of Porto Santo near Madeira. Found there by Mr. Francis Maſſon. Introduced in 1779[r].]

70. Root perennial, creeping, by which it multiplies very faſt where it is once eſtabliſhed. Stems a foot and half high. Lower leaves narrow, ſtiff and briſtly, the upper ones ſhaped like thoſe of narrow-leaved Myrtle. Flowers in large umbels from the diviſions of the ſtem, yellow, appearing in june, but rarely producing ſeeds in this country. Native of Aleppo, and other parts of the Levant.

[71. There is no deſcription of this, nor is it known where it is a native.

72. Root annual. Petals creſcent-ſhaped. Fruit ſmooth, except that it is ſcabrous at the corners. Umbel often the length of the whole plant. Involucels almoſt ſemiorbiculate. There are flowering branches below the umbel[s].

According to Villars, it is from ſix to ten inches high; the lower ſtem-leaves fall very ſoon, and ſometimes barren branches ſpring from the bottom of it; the umbel is divided into four parts, and each branch is ſubdivided into two, four or five times over; involucres triangular and blunt; petals ending in two ſhort threads, leſs diſtant from each other than common; fruit three-cornered, ſmooth, except near the angles, where it is a little rugged.

Native of Barbary and Ruſſia, of the South of France, Auſtria, Sileſia, and the county of Nice.

Linneus, Gerard, &c. quote the *Tithymalus ſegetum longifolius* of Ray, as a ſynonym of this ſpecies. Mr. Hudſon, following Dillenius, makes this a variety of the *platyphyllos*. I once thought that our Cambridgeſhire plant was the *ſegetalis*; but we have no other beſides the *exigua*. See n. 50.

73. Root annual. Stems eight or ten inches high, erect, ſmooth, round, red at bottom. Leaves ſcarcely petioled, hanging down a little, very ſmooth, paler underneath, blunt at the end with a point, but the firſt leaves ſometimes emarginate. They are about two inches aſunder, and from each axil proceeds a naked flowering branch. The terminating umbel has generally four rays, three or four inches in length, naked, and dividing again into pairs. Where theſe divide a ſingle flower ſits on a peduncle about an inch in length. Petals creſcent-ſhaped.—It approaches to *Euph. ſegetalis*, but is much more branching, the branches coming out from the very loweſt axils. The leaves are pale green, of a leſs firm ſubſtance. The leaves of the univerſal involucre are broader, and hang down. The whole plant has the branches and rays of the involucre divaricated. Whereas in *E. ſegetalis* the ſtems are firm and upright. The leaves narrower, ſomewhat glaucous, thicker, more crowded, and reflex, leſs deciduous. The umbel of five or ſix rays. In the manner of flowering and ſeeds they agree. The fruit in this is ſmooth, except at the angles.—Near Luſenzo, not far from Aoſt; and near Guilleſtre in Dauphiné: flowering from the beginning of april to the end of june[t].

74. Root annual. Stem upright, from ſix to nine inches high, round, ſlightly hairy, having oppoſite branches at bottom. Leaves alternate, or ſcattered, few, ſmooth, the lower petioled, the upper ſeſſile. Umbel ſpreading, faſtigiate. Involucre of five leaves, like the other leaves. Involucels three, unequal, the inner only half the ſize of the others. All the flowers hermaphrodite. Calyx greeniſh yellow, with four or five yellow ſegments. Petals, or nectaries four, entire, roundiſh, or oval, yellowiſh green. Filaments fourteen; two, three or more viſible at a time. Capſule ſmooth[u].

Native of moſt parts of Europe, in cultivated grounds. It flowers from july through the autumn. Called by the country people *Wart-wort*, *Churn-ſtaff*, and *Cat's-milk*.

The juice is very acrimonious, and hence is often applied to warts for the purpoſe of deſtroying them. It ſhould be uſed with caution, where the parts are tender, particularly near the eyes, as it will inflame the face to a great degree[x]. According to Linneus, if ſheep eat it, they are purged by it, and their fleſh acquires a bad taſte; but this is not the caſe with cows.

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[l] Scopoli.
[m] Ibid.
[n] Hort kew.
[o] Linn. Wither. Stokes in Wither.
[p] Jacquin.
[q] Woodw. Mſs. Linn.
[r] Hort. kew.
[s] Linn.
[t] Allioni.
[u] Linn. Curtis, Withering.

75. Root annual. Involucels of the ſecondary and laſt umbel three-leaved; two leaflets broader on one ſide, oblique at the baſe, narrower on the other ſide, on the outſide a little dilated towards the baſe; the third leaflet is ovate-roundiſh, with equal ſides. Having the leaves and manner of growth the ſame as in E. helioſcopia, at firſt ſight it appears to be the ſame plant; but it differs in having the top of the ſtem, the leaves, peduncles and pedicels villoſe, and the capſules muricated with ſmall tubercles. In cultivated grounds about Tunis[y].

76. This is a foot high, and is eaſily known by its oblong leaves, with frequent and ſharp ſerratures[z]. The leaves, however, vary very much, being ſometimes cordate on the flowering-ſtems, and linear on the branches and barren ſtems, and ſometimes linear on all. The umbels alſo are ſometimes three-rayed and bifid, with the involucres and involucels cordate-attenuate[a].

Native of the South of Europe. Introduced in 1780, by Sign. Giovanni Fabroni[b].

77. Root biennial. Stems from eight inches to a foot in height, ſimple, cylindric, decumbent. Leaves ovate-lanceolate, half-ſtem-claſping, finely ſerrate, a little villoſe. Fertile branches axillary, dichotomous. Umbels ſmall, yellow, ſpreading, extending above the ſtem. Involucre five-leaved, lanceolate, obſcurely ſerrate. Involucels ſubovate, very entire. Flowers of the firſt, ſecond and third rank abortive. Petals four, entire, yellow. Capſule very much warted[c].

Corn fields in the South of Europe and the Levant. With us in Eſſex; near Granſden lodge in Cambridgeſhire; and near York: flowering in july.

78. This moſt ſplendid plant, by far the moſt beautiful of the genus, is the height of a man: the ſtem ſhrubby, rather fleſhy, full of milky juice, round, abruptly branched: the branches curved upwards, three together; the ſmaller branches ſometimes four or five together: bark ſmooth, whitiſh, marked with ſpots or ſcars where former leaves have grown. Leaves on the ſummits of the ſmaller branches, crowded together, almoſt ſeſſile, ſpreading in every direction, bluntiſh, ending in a ſmall point, ſmooth, opaque, dark green, glaucous underneath; the younger ones turned inwards, and thoſe neareſt the umbels coloured: principal nerve of all the leaves dull yellow, and in the younger ones near the umbels it is beſides ſtained with red. Umbels terminating, erect, having five, ſix, or ſeven rays. Peduncles club-ſhaped, ſmooth, dichotomous. Involucels two or three together under each flower, of a moſt vivid ſcarlet. Flowers ſolitary, turbinate, yellowiſh, ſoon turning reddiſh. Calyx five-toothed. Petals five, divaricated, yellow, full of very ſweet pellucid honey. Stamens fifteen or twenty, fertile, many abortive. Germ reflex. Styles reflex, red. Receptacle occupied by chaffy branched filaments. Capſule ſmooth.—Diſcovered in Jamaica, but ſparingly, by Matthew Waller, Eſq., who ſent it to the late Marquis of Rockingham in 1778[d].—It flowers in january.

79. Stature erect. Univerſal umbel five-cleft, primary partial umbel three-cleft, the others dichotomous. Univerſal involucre five or ſix-leaved, leaflets oblong, obtuſe; partial three-leaved, the reſt two-leaved. The rays of the primary umbel have a leaflet and a ſmaller dichotomous branch in the middle. Stem-leaves lanceolate, very obtuſe. Petals ſnow-white, ſpread out flat, in fives, not ſhaped like a pelta, but very ſlender[e].

Native of Virginia and Canada.

80. Stems quite ſimple, annual, round, ruſh-like, upright. Leaves broad-lanceolate, bluntiſh, ſeſſile, alternate, quite entire, villoſe underneath, often ruſeſcent at the edge. Univerſal umbel five-cleft, partial three-cleft, then dichotomous. Univerſal involucre five-leaved; partial three-leaved, then two-leaved; leaflets ovate-oblong; in the laſt ovate, all ſomewhat hairy. Petals four, entire. Capſules globular, ſcarcely grooved, covered with a thin, long, white wooll[f].

Native of Sicily, Barbary and the Levant. Cultivated in 1739, by Mr. Miller[g].

81. It has entirely the air of *E. paluſtris* (n. 90), inſomuch that it might eaſily be taken for the ſame plant; it flowers alſo at the ſame time; it is, however, a little larger.—Root perennial. The leaves are broad-lanceolate, alternate, ſcarce apparently hairy on both ſides; ſo finely ſerrate at the tip as hardly to be obſerved. The umbels are ſo confounded with the lateral umbellets, that the primary one is diſtinguiſhed with difficulty: the petals and involucres are yellow. The primary flowers are male and five-petalled; the reſt hermaphrodite and four-petalled; the petals are tranſverſely oval. Capſules warted, with very fine white hairs ſcattered over them. There are barren branches from the lower axils of the leaves.

Native of Siberia[h].—It flowers from may to auguſt. Cultivated in 1758, by Mr. Miller[i].]

82. Root perennial. Stems many, ſucculent, three feet high, covered with a purple bark. Leaves oblong, ſmooth, ſhaped like thoſe of the Willow, dark green. The upper part of the ſtalks divide, and in the fork is ſituated an umbel of flowers of a greeniſh yellow colour; appearing in june: the ſeeds ripen in auguſt. It was diſcovered in the Levant by Tournefort, who ſent the ſeeds to the royal garden at Paris.

[Cultivated in 1739, by Mr. Miller[k].

83. Root annual. Stem upright, from a foot to two or three feet high, ſmooth. Leaves alternate, remote, ſmooth, finely ſerrate, with a very few villoſe hairs along the keel: the lower ones ſubpetioled, broader towards the end; the upper ones emarginate at the baſe, and above the baſe bent down at the ſides. Involucre lanceolate. Involucels cordate. Both finely ſerrate. Petals entire, ſuborbiculate, yellow. Germs obſcurely warted. A trifid umbellet grows from the axils of the leaves. The upper part of the plant is greeniſh yellow[l].—Native of England, France, Germany, Switzerland, Auſtria, Carniola, Piedmont; in corn-fields. With us it has been found at Black Notley in Eſſex, by Mr. Ray. Between Harefield common and Battle's-well, by Mr. Blackſtone. Near Northfleet, by Mr. Hudſon. At Ripton in Huntingdonſhire, by Mr. Woodward. In the iſle of Wight by Dr. Stokes.

Dillenius ſuppoſed Ray's *Tithymalus ſegetum longifolius* to be the ſame with this; and Mr. Hudſon has put it down as a variety. He obſerves that the leaves are very minutely ſerrate at the baſe only, in the variety. Mr. Woodward remarks that the leaves of the *platyphyllos* are nearly entire at the baſe. See n. 50, and 72.

84. Native of New Zealand[m].

85. Perennial. Stem a foot, eighteen inches, or two feet in height, upright, round, ſmooth, ſea-green, much branched, leafy. Leaves broader than in *E. Cypariſſias* (n. 75.), ſea-green, ſmooth, linear-lanceolate, ſeſſile, acuminate, quite entire. Umbel of eight or more rays, leaves of the involucre as many: the lateral umbels dichotomous. Involucels cordate. All the flowers fertile, according to Linneus; but Scopoli affirms that thoſe on the firſt diviſions are male. Petals four, yellowiſh, obſcurely horned. Capſules ſmooth, ſomewhat warted on the prominent parts. The milk is very acrid[n].

Native of France, Holland, Germany, Switzerland, Carniola, Savoy.

Cultivated here in 1570[o].

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[x] Curtis.
[y] Vahl.
[z] Villars.
[a] Vahl.
[b] Hort. kew.
[c] Linn.
[d] Smith.
[e] Linn. ſpec.
[f] Linn. hort. upſ.
[g] Hort. kew.
[h] Linn. ſpec.
[i] Hort. kew.
[k] Ibid.
[l] Linn. ſpec.
[m] Forſter.
[n] Linn. Pollich, Scopoli.
[o] Hort. kew. from Lobel.

86. Leaves quite entire, glaucous underneath, but not villoſe. The lateral umbels ſo crowded together at the top of the ſtalk, as hardly to be diſtinguiſhed from the primary one. The rays half a foot long, angular, twice bifid. Involucels quite entire, two-leaved, of the ſame breadth and length. Flowers between the branches barren and deciduous; the reſt fertile and peduncled. Petals four, red. Capſule without warts or hairs, but ſomewhat wrinkled on the back of each lobe[p]. Native of Iſtria, Verona and Piedmont.

87. Perennial. Stems procumbent, a foot in length. Leaves entire, alternate, glaucous, ſmooth, attenuated at the baſe; the lower ones narrower, widening gradually. Peduncles from the upper axils ſimple, fertile. Involucre broad-lanceolate. Involucels triangular-cordate. Flowers ſeſſile, in threes. Petals four, broad, blunt, truncated. Capſules ſmooth[q].—Native of Provence and Auſtria.

88. This bears a great reſemblance to *E. Eſula* (n. 85.), and in the ſpring the umbels are very much alike: this, however, differs in being larger; in having leaves not all alike, but the upper ones or thoſe of the branches briſtle-ſhaped or linear; the lower, or thoſe of the ſtem lanceolate, the involucre conſiſting of about twenty leaves, which are reflex and broader; the involucels two-leaved, ovate-cordate, yellowiſh or reddiſh; the petals creſcent-ſhaped, yellow. Capſules ſmooth. Others, however, affirm that they are warted. As the umbel withers, lateral branches with very narrow filiform leaves grow up, reſembling the pine[r].

South of France, Germany, Auſtria, Carniola, Switzerland, Piedmont; on hills, by road ſides, and in dry barren places.—It flowers with us from may to ſeptember. Parkinſon informs us, that it was oftentimes found in the country gardens of poor folks in many places with us. They knew it by the name of *Welcome to our houſe*; whence we may preſume that it was a favourite plant; probably it was then much in uſe as a purge; the Spurges were alſo then in requeſt, not only for taking away warts, but for curing the leproſy and other cutaneous diſorders.

89. Root perennial. Stems many, a foot long, trailing, with ſcars at bottom from the fallen leaves. Theſe are alternate, ſucculent, concave, ſea-green, ſeſſile; the upper ones reflex. The umbel has from ſeven to nine rays. Involucre of as many ovate, ſharp leaflets, more ſlender than the leaves. Involucels two-leaved, ſubcordate, broader, concave, ſharp, ſomewhat ſcabrous about the edge. Flowers within the primary and ſecondary involucels male, the reſt hermaphrodite. Calyxes ſerrate about the edge. Petals four, yellow, horned with round tips, ſhining. Capſules ſmooth[s].

Native of the South of France, Spain, and Italy. —It flowers from april to june. Cultivated in 1570[t].

90. Root perennial. Stem three, four or five feet high, round, ſmooth, with branches towards the top, which are alternate, and ſhorter than the ſtem. Leaves alternate, ſeſſile, blunt, ſmooth, glaucous underneath, ſometimes quite entire, ſometimes very finely ſerrate. Involucres and involucels ovate; the former of five, ſix or ſeven leaves. The primary flowers male, five-petalled, abortive; the ſecondary hermaphrodite, four-petalled. Calyx very pale yellow. Petals entire, yellow, blunt, not horned. Capſules warted[u].—Native of Sweden, Denmark, Germany, Holland, Switzerland, France, Piedmont.—With us it flowers from may to auguſt: and was cultivated ſo long ſince as 1570[x].]

91. Root perennial. Stems ſeveral, a foot or more in height, upright, unbranched, round, ſmooth, very light green, with red blotches here and there. Leaves frequent, alternate, reſembling thoſe of Spurge-Laurel, but leſs thick and ſtiff, above ſmooth and ſomewhat ſhining, from glaucous deep green, underneath paler, and covered with a ſlender ſcarcely conſpicuous woollineſs, having hairs only along the nerve: theſe leaves are all of the ſame ſize except the bottom ones, which are ſmaller and rounder. The number of rays in the umbel is uſually five; but ſometimes on the middle and ſtronger ſtems another ray (or two) branches out, with a leaf or two under each, ſomewhat bigger than the reſt. Of the two flowers on each ray, one only uſually comes to maturity. The capſules are not properly wrinkled, but armed with many ſoft prickles on the middle; for at the corners they are ſmooth: they do not hang down, but ſtand upright on ſlender ſhort peduncles. The flower has uſually five petals, but ſometimes only four.

Mr. Ray relates a caſe of a boy being killed by a doſe of the juice of this plant[y].

Native of Ireland in the mountains of Munſter, where it is known by the name of *Makinboy*. It was ſent from thence by Stephens, Profeſſor of Botany at Dublin, to the Eltham garden, where it flowered in 1729. It was firſt mentioned in *Phytologia Britannica*; next in the ſecond edition of the catalogue of the Oxford garden; then by Merret in his Pinax, and by Ray in his firſt edition of his Catalogue of Engliſh plants[z].

It was found by Mr. Doody among the corn near Twickenham park, over againſt Richmond, and near Otterſpool: but no perſon having met with it there afterwards, Doody is ſuppoſed to have miſtaken another plant for it. Mr. Hudſon, however, ſets it down as being found between Feverſham and Sittingbourn in Kent.—It flowers in may and june.]

92. This riſes with an upright branching ſtem to the height of four feet. Leaves oblong, pointed, alternate. Flowers in umbels from the forks; they are ſmall and yellow, and rarely produce ſeeds in England. Native of Italy, Sicily, Candia, &c.

93. [Root perennial. Stem herbaceous, not woody, ſlightly downy, purple, two or three feet high. The flowering part of it, during flowering, grows to more than twice its original length. Leaves alternate, remote, thin, not leathery and ſtiff, ſlightly downy, eſpecially the root-leaves underneath: ſtem-leaves lanceolate, very entire, broader upwards, both blunt and pointed, tapering down into leaf-ſtalks: flower-leaves obovate-oblong, and obovate, with a ſhort point at the end. Lateral flowering branches numerous, twice bifid, and forming a ſort of long ſpike. Leaves of the involucre five, roundiſh, obovate. Involucels circular or elliptic, cloven half way down on each ſide, and rounded at each extremity, with a ſmall point juſt perceptible to the naked eye. Petals creſcent-ſhaped, yellow, in decay acquiring a purpliſh hue, and then ſometimes miſtaken for *E. Characias*[a]. Vaillant will not have this ſeparated from the next. Common in woods and hedges, in a clayey ſoil. It flowers in may, ſometimes ſooner, and continues to july.

94. Stems ſhrubby, proliferous, thick. Leaves hairy, perennial. Petals creſcent-ſhaped, eroſe or gnawn, whereas thoſe of the next ſpecies are entire[b]. Haller joins theſe two; this differs, however, in having the involucels entire, ſubemarginate, orbicular, perfoliate: the germ ſmooth: the ſtigmas ſemibifid, blackiſh: the anthers yellow, roundiſh: ſtyles greeniſh yellow; ſtem unbranched, two feet high, reddiſh, naked below: leaves obtuſe, not acuminate, ſubpetioled, red often mixed among the green, two or three inches long, and one broad; the younger ones very villoſe[c].—According to Scopoli, the leaves are very finely ſerrate at the tip. The flowers between the rays and the branches male and ſeſſile, with moſt of the ſtamens imperfect, and five petals. The other flowers fertile and four-petalled. Germ neither villoſe nor warted.

Native of woods, in the ſouthern countries of Europe.

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[p] Scopoli.

[q] Gerard.

[r] Linn. Krock.

Linn. ſpec.

[t] Hort. kew. from Lobel.

[u] Linn. ſuec. Pollich, Krocker.

[x] Hort. kew. from Lob.

[y] Hiſt. ſuppl. 666.

[z] Dillenius.

[a] Linn. Woodw. Mſs. Stokes in With.

[b] Linn.

[c] Krocker.

95. Stems ſeveral, ſhrubby, four feet high, (or even five or ſix in gardens) ſimple, thick, ſomewhat woolly, thickening upwards, reddiſh, with tranſverſe ſcars from the fallen leaves. Theſe are cloſely imbricate, lanceolate, leathery, ſomewhat downy, and bent back; green, with an elevated rib on each ſide, towards the flowers becoming broader and blunter. Umbel ſmall, crowded, terminating, ſeſſile; rays ſhort, and numerous branches of the ſame length from the upper part of the ſtems. Leaves of the involucre eight, ten, or more, ſomewhat lanceolate, ſmall, bent back. Involucels cloven half way down. Flowers ſmall; thoſe within the firſt involucels male, the reſt perfect. Petals four, purple. Styles ſcarcely cloven, whereas in the *amygdaloides* they are deeply cloven. Germs villoſe. The whole plant is very downy [d].

Native of France, Spain, Italy and Germany, in woods and hedges. With us it is rare, if really found at all. At Paper-mill Pool Dam, in Heywood Park, Staffordſhire, where Dr. Plot marks it to grow, Dr. Stokes has ſearched for it in vain. It is ſaid to have been found in Needwood foreſt. It flowers in june.]

96. This riſes with a ſhrubby purple ſtem near three feet high. Leaves ſeſſile, alternate. Umbels terminating, and forming a ſort of ſpike. Involucres yellow. Petals black. The flowers appear in may, and the ſeeds ripen in july.

[97. Stem round, naked, jointed. Leaves narrow-linear, two inches long, ending in a ſmall point. Petals entire. Capſules ſeem to be ſmooth.—Native of the iſland of S. Crux, and communicated by Vahl [e].

98. Root almoſt ſimple, a ſpan in length, going ſtraight down, a little writhed. Stems diffuſed in a ring, roundiſh, jointed; joints knotty, dichotomous, ſlightly hairy. Leaves at the knots oppoſite, on ſhort petioles, obovate, the upper ones oblanceolate, naked. Flowers heaped at the ends of the branches, males mixed with hermaphrodites, the petals of a beautiful roſe-colour. Capſules ſmooth.—Native of the Eaſt-Indies, in driving ſand. Communicated by König [f].]

PROPAGATION AND CULTURE.

1—25. The plants of the two firſt diviſions of this vaſt genus are in general known by the name of *Euphorbium*. (The others were moſtly known among authors, before Linneus, by the name of Tithymalus, or Spurge.) Theſe plants are preſerved in many curious gardens, more for the oddneſs of their ſtructure, than any real beauty; but being ſo extremely different in their form, from almoſt any plants of European production, many curious perſons have been induced to preſerve the ſeveral ſorts in their gardens.

They are all of them full of a milky acrid juice, which flows out on their being wounded in any part; this juice will bliſter the fleſh, if it happen to lie upon any tender part for a ſhort time, and will burn linen almoſt as bad as aqua fortis, therefore the plants ſhould be handled with great caution; nor ſhould the ends of their branches be ever bruiſed or injured; for if they are, it frequently occaſions their rotting down to the next joint, and ſometimes will deſtroy the whole plant, if thoſe injured branches are not cut off in time; ſo that whenever the branches appear to have been injured, the ſooner they are cut from the plants, the leſs danger there will be of their ſuffering from it; nor ſhould any of the branches be cut between the joints, for the ſame reaſon.

Moſt of theſe plants were firſt brought to Europe by the Dutch, who have been very curious to introduce great numbers of plants from India, and alſo from the Cape of Good Hope: from the latter a very great variety of curious plants have been of late years brought to Europe, many of which produce very elegant flowers, and are the greateſt ornaments of the conſervatory in the winter and ſpring ſeaſons. Theſe have been brought over in ſeeds, but the different ſorts of Euphorbia came over moſt of them in plants or cuttings; for theſe may be eaſily tranſported to any diſtance, if either of them are put up in boxes, with any ſoft dry package, to prevent their being bruiſed, or their ſpines from wounding each other, and kept from moiſture and cold; with this care they may be kept ſix months out of the ground, and if carefully planted will take root, and thrive as well as if they had been newly taken from the old plants, or out of the ground but a ſhort time; which is a much more expeditious method of obtaining the plants than from ſeeds, when they can be procured.

The greateſt part of theſe ſucculent plants grow naturally upon barren rocky places, or in dry ſandy ſoils, where few other plants will thrive; therefore they ſhould never be planted in rich or loamy earth here, nor ſuffered to receive much wet, which will cauſe them to rot. The beſt mixture of earth for theſe plants is about a fourth part of ſcreened lime-rubbiſh, a fourth part of ſea-ſand, and half of light freſh earth from a common; theſe ſhould be mixed well together, and frequently turned over before the mixture is uſed, that the parts may be incorporated, and the compoſt ſweetened by being expoſed to the air. If this mixture is prepared a year before it is wanted, it will be the better, that it may have the benefit of the winter's froſt and the ſummer's heat to mellow it; and the oftener it is turned over, and the ſmaller the heaps are in which it is laid, the air will penetrate it better, and render it more fit for uſe.

Theſe ſorts are eaſily propagated by cuttings, which ſhould be taken from the old plants in june; theſe muſt be cut at a joint, otherwiſe they will rot. When theſe cuttings are taken off, the milky juice of the old plants will flow out in plenty; therefore there ſhould be ſome dry earth or ſand applied upon the wounded part, which will harden and ſtop the ſap; and the wounded part of the cuttings ſhould alſo be rubbed in ſand, or dry earth, for the ſame purpoſe; then the cuttings ſhould be laid in a dry part of the ſtove for ten days or a fortnight; and ſome of thoſe whoſe branches are large and very ſucculent, may lie three weeks or more before they are planted, that their wounds may be healed and hardened, otherwiſe they will rot. When the cuttings are planted, they ſhould be each put into a ſmall halfpenny pot, laying ſtones or rubbiſh in the bottom, and filling the pots with the mixture before directed; then plunge the pots into a moderate hot-bed, and if the weather is very hot, the glaſſes of the hot-bed ſhould be ſhaded in the middle of the day, and the cuttings ſhould be gently watered once or twice a week, according as the earth may dry: in about ſix weeks or two months the cuttings will have put out roots, ſo if the bed is not very warm, the plants may continue there, provided they have free air admitted to them every day, otherwiſe it will be better to remove them into the ſtove, where they may be hardened before the winter; for if they are too much drawn in ſummer, they are very apt to decay in winter, unleſs they are very carefully managed. During the ſummer ſeaſon, theſe plants ſhould be gently watered two or three times a week, according to the warmth of the ſeaſon; but in winter they muſt not be watered oftener than once a week, and it ſhould be given more ſparingly at that ſeaſon, eſpecially if the ſtove is not warm: the firſt ſort will require more warmth in the winter than any of the other, as alſo leſs water at that ſeaſon. This, if well managed, will grow ſeven or eight feet high; but the plants muſt conſtantly remain in the ſtove, giving them a large ſhare of air in warm weather, and in winter the ſtove ſhould be kept in a temperate degree of warmth.

The fourth ſort is at preſent the moſt rare in England; the plants which have been procured from Holland, have been moſt of them deſtroyed by placing them in ſtoves, where, by the heat, they have in one day turned black, and rotted immediately after. This ſort will thrive well if placed in a dry airy glaſs caſe with Ficoides, and other ſucculent plants in the winter, where they may have free air in mild weather, and be protected from froſt; in ſummer the plants may be expoſed in the open air, in a warm ſituation, but ſhould be ſcreened from much wet: with this treatment, the plants will thrive much better than when they are more tenderly nurſed.

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[d] Linn. Stokes in With. Woodw. Mſs. Krock.

[e] Retz.

[f] Ibid.

The fifth, eleventh, fourteenth ſorts, &c. are alſo pretty hardy, and will live in a good glaſs caſe in winter without fire, provided the froſt is kept entirely out; in ſummer they may be placed abroad in a warm ſituation: as theſe are very ſucculent plants, they ſhould not have too much wet; therefore, if the ſummer ſhould prove very moiſt, it will be very proper to place theſe plants under ſome ſhelter, where they may enjoy the free air, and be ſcreened from the rain, otherwiſe by receiving too much wet in ſummer they will rot in winter.

The eleventh ſort will require to be ſupported, otherwiſe the weight of the branches will draw them upon the pots; and, by training the ſtems up to ſtakes, they will grow four or five feet high, and a great number of ſide branches will be produced.

The twenty-fourth and twenty-fifth, with ſeveral in the third diviſion, (viz. 28, 30, 32, 33, 34, 35, 36, 46) are natives of the Eaſt or Weſt-Indies; and being annual, the ſeeds muſt be ſown upon a hot-bed in the ſpring, and when the plants are fit to remove, they ſhould be planted ſeparately in ſmall pots filled with light earth, and plunged into the hot-bed again: they muſt afterwards be treated in the ſame manner as other tender annual plants from hot countries.

The fifty-fourth ſort, which is vulgarly called the Caper buſh, will become a weed in gardens where it is allowed to ſcatter its ſeeds, and when once introduced requires no care, but to keep the young plants clean from weeds: this is the caſe with moſt of the European ſorts; ſeveral of which are notorious weeds in gardens and corn fields.

The annual ſorts ſhould have their ſeeds ſown in the autumn; they will come up in the ſpring, and require no farther culture.

The perennial ſorts may be propagated either by ſowing the ſeeds, or parting the roots, or by cuttings.

57. may be increaſed by off-ſets from the main root; theſe may be taken off in autumn, and planted in a ſhady ſituation, where they will thrive better than in the full ſun.

58, 59, 78, 92, 95, May be propagated by cuttings during any of the ſummer months: they all require protection from froſt in winter.—[78 muſt be kept in the hot-houſe, and being ſo eminently beautiful, it is to be lamented that it is yet confined to the moſt choice collections; which is the more remarkable, as it not only may be increaſed by cuttings, but alſo grows readily from ſeeds, both ſent from Jamaica, and produced in England.]

The other perennials may be increaſed by parting the roots, or ſowing the ſeeds in autumn. They are moſt of them hardy enough to endure the greateſt cold of this country, eſpecially if they be planted in a dry ſoil.

90, 91, ſhould have a ſhady ſituation, and a moiſt ſoil.

93, 94, 95, being inhabitants of woods, muſt alſo have a ſhady ſituation. They will come up from ſcattered ſeeds, and may be increaſed by the roots.

70. ſhould have the roots confined in pots, for when planted in the full ground, they creep to a great diſtance.

96. may be propagated by ſeeds, or from cuttings, and will live abroad, if planted in a dry rubbiſhy ſoil and warm ſituation, otherwiſe the plants are frequently killed by ſevere froſt. The young plants raiſed from ſeeds are generally very fruitful; but the old ones, and thoſe raiſed from cuttings, are barren.

[EUPHORBIA. See *Cynanchum.*
Euphorbii arbor. See *Cactus.*
EUPHORBIUM. See *Euphorbia* & *Craſſula.*
EUPHORIA. See *Scytalia.*]

EUPHRASIA. (*From* ευφραινω; *the ſame with* ευφροσυνη, *lætitia, joy, exhilaration, delight.*)

Engl. *Eye-bright.* Fr. *Euphraiſe.*

[*Lin. gen. n.* 741. *Reich.* 799. *Schreb.* 998. *Tourn.* 78. *Juſſ.* 100. *Gærtn. t.* 54. *Odontitis Dill. gen.* 6.

Claſſ. 14. 2. Didynamia Angioſpermia.
Nat. order of *Perſonatæ.*—*Pediculares.* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, cylindric, four-cleft, unequal, permanent.

COR. one-petalled, ringent. *Tube* length of the calyx. *Lip ſuperior* concave, emarginate; *lip inferior* expanding, three-parted: *diviſions* equal, obtuſe.

STAM. *Filaments* four, filiform, inclined under the upper lip. *Anthers* two-lobed; of which the inferior are ſharpened into a little ſpine on the lower lobe.

PIST. *Germ* ovate. *Style* filiform, of the ſituation and figure of the ſtamens. *Stigma* obtuſe, entire.

PER. *Capſule* ovate-oblong, compreſſed, two-celled.

SEEDS numerous, very ſmall, roundiſh.

ESSENTIAL CHARACTER.

Cal. four-cleft, cylindric. *Capſ.* two-celled, ovate-oblong. *Lower anthers* have a little thorn at the baſe of one of the lobes.

SPECIES.

1. Euphraſia latifolia. *Broad-leaved Eye-bright.*
Lin. ſpec. 841. *ſyſt.* 549. *Reich.* 3. 108. *Sabb. hort.* 3. *t.* 7. *Sauv. monſp.* 139. *Magn. monſp.* 95. *t.* 94. *Segu. veron.* 1. 270. (Odontites). *Allion. pedem. n.* 212.
E. purpurea minor. *Bauh. prodr.* 111. *Raii hiſt.* 774.
E. pratenſis Italica latifolia. *Bauh. pin.* 234. *Mor. hiſt.* 3. 430. *ſ.* 11. *t.* 24. *f.* 8. *Raii hiſt.* 773.
E. tertia latifolia pratenſis. *Column. ecphr. t.* 200. *f.* 2.
E. purpurea latifolia. *Park.* 1329. 5.
Leaves tooth-palmate, flowers in a kind of head.

2. Euphraſia officinalis. *Common Eye-bright.*
Lin. ſpec. 841. *Reich.* 3. 108. *fl. lapp.* 247. *ſuec. n.* 543. *mat. med.* 155. *Gærtn. fruct.* 1. 257. *Hudſ. angl.* 269. *With.* 635. *Curt. lond.* 5. 50. *Lightf. ſcot.* 323. *Relh. cant. n.* 454. *Hall. helv. n.* 303. *Scop. carn. n.* 753. *Neck. gallob.* 263. *Pollich. pal. n.* 581. *Allion. pedem. n.* 213. *Krock. ſileſ. n.* 969. *Sabb. hort.* 3. *t.* 9. *Blackw. t.* 427. *D'Aſſo aragon. n.* 552. *Villars dauph.* 2. 409. *Woodv. med. bot.* 2. *t.* 220.
Euphraſia. *Camer. epit.* 767. *Tabern.* 362. *Lob. ic.* 1. 491. 1. *Dod.* 54. 3. *Fuchſ.* 247. *Ger.* 537. 1. *emac.* 663. *Bauh. hiſt.* 3. 432. 3. *Raii hiſt.* 771. *ſyn.* *284. *Riv. mon. t.* 90. *f.* 1.
E. officinarum. *Bauh. pin.* 233. *Mor.* 11. 24. 1.
E. vulgaris. *Park. theat.* 1329. 1.
Leaves ovate, marked with lines, ſharply toothed.

3. Euphraſia tricuſpidata.
Lin. ſpec. 841. *ſyſt.* 550. *Reich.* 3. 109. *Allion. pedem. n.* 214. *Pluk. alm. t.* 177. *f.* 1. *Zanon. hiſt.* 110. *t.* 76.
Leaves linear, three-toothed.

4. Euphraſia Odontites. *Red Eye-bright.*
Lin. ſpec. 841. *Reich.* 3. 109. *hort. cliff.* 146. *fl. ſuec. n.* 544. *Gærtn. fruct.* 1. 258. *With.* 636. *Curt. lond.* 1. 44. *Lightf.* 324. *Relh. n.* 455. *Fl. ruſt. t.* 43. *Scop. carn. n.* 754. *Neck. gallob.* 264. *Pollich. pal. n.* 582. *Leers herborn. n.* 476. *Krock. ſileſ. n.* 970. *Fl. dan. t.* 625. *Villars dauph.* 2. 411.
Bartſia Odontitis. *Hudſ. angl.* 268.
Odontites bracteis ſerratis hirſutis. *Hall. helv. n.* 304.
Euphraſia pratenſis rubra. *Bauh. pin.* 234. *Mor.* 11. 24. 10. *Raii hiſt.* 772. *ſyn.* *284.—major. *Park.* 1329. 3.

E. altera. *Dod. pempt.* 55. *Lob. ic.* 1. 496. 2. *Riv. mon. t.* 90. *f.* 2.
E. parva purpurea. *Bauh. hiſt.* 3. 433.
Cratæogonon Euphroſine. *Ger.* 85. *emac.* 91. 3.
β. E. ſylveſtris major purpurea latifolia. *Column. ecphr.* 1. 201. *t.* 202. *f.* 1.
Leaves linear, all ſerrate.

5. Euphraſia lutea. *Yellow Eye-bright.*
Lin. ſpec. 842. *Reich.* 3. 109. *Scop. carn. n.* 755. *Pollich pal. n.* 583. *Jacqu. auſtr.* 4. *t.* 398. *Allion. pedem. n.* 216. *Krock. ſileſ. n.* 971. *Villars dauph.* 2. 411.
E. Coris. *Crantz. auſtr.* 298.
E. pratenſis lutea. *Bauh. pin.* 234. *Mor.* 11. 24. 16. *Raii hiſt.* 773.—major. *Park. theat.* 1329. 6.
E. lutea montana anguſtifolia major altera. *Column. ecphr.* 1. 204. *t.* 203.
Odontites bracteis glabris integerrimis. *Hall. helv. n.* 305.
O. fl. luteo. *Rivin. mon. t.* 91.
Coris monſpeſſulana lutea. *Bauh. hiſt.* 3. 433.
Leaves linear, ſerrate, the upper ones quite entire.

6. Euphraſia linifolia. *Flax-leaved Eye-bright.*
Lin. ſpec. 842. *ſyſt.* 550. *Reich.* 3. 110. *Ger. prov.* 285. 1. *Sauv. monſp.* 138. *Villars dauph.* 2. 411. *Bauh. pin.* 234. 2. *Column. ecphr.* 2. 68. *t.* 69.
Coris monſpeſſulana lutea. *Bauh. hiſt.* 3. 433. *ſec. Gerard.*
Leaves linear, all quite entire; calyxes ſmooth.

7. Euphraſia viſcoſa. *Clammy Eye-bright.*
Lin. ſyſt. 550. *Reich.* 3. 110. *mant.* 86. *Ger. prov.* 285. 2. *Gouan. illuſtr.* 37. *Allion. pedem. n.* 217. *Villars dauph.* 2. 411.
Odontites fol. viſcidis, rariter ſerratis. *Hall. helv. n.* 306.
Pedicularis annua lutea tenuifolia viſcoſa, pomum redolens. *Garid. aix.* 351. *t.* 78.
Leaves linear, calyxes glutinous-hiſpid.

8. Euphraſia cuneata. *Wedge-leaved Eye-bright.*
Forſt. fl. auſtr. n. 234.
Leaves ſomewhat wedge-ſhaped, gaſhed.

9. Euphraſia longiflora. *Long-flowered Eye-bright.*
Cavan. hiſp. 45. *n.* 68. *t.* 62. *Vahl. ſymb.* 3. 78. *Lamarck encycl.* 2. 398. *Barrel. ic.* 1204.
Pubeſcent-viſcid, leaves linear, quite entire, tube of the corolla filiform three times as long as the calyx.

DESCRIPTIONS, &c.

1. Root annual. Stem a hand's breadth high, or leſs, ſquare, reddiſh, ſlightly hairy, ſimple, or dividing at bottom into two ſmall branches, not more. Leaves few, thick, hairy, almoſt round, in pairs, very deeply notched, the lower ones having only about three, but the upper ones five or ſix notches. Flowers axillary, and in a ſpike at the end, coming out in pairs. Corolla purple (ſometimes white[a].) Bractes palmate, ſubhirſute[b].

About Montpellier. Frequent in the hilly paſtures of Italy, ſpreading a purple carpet in ſome places. In Montferrat, the county of Nice, and near Turin: Verona: on Monte Teſtacceo near Rome. In Apulia. In Caſtille, particularly near the Eſcurial.

2. Root annual. Stem from two to four inches high, or more, upright, round, hoary, purple, for the moſt part branched, in oppoſite pairs. Leaves oppoſite, ſeſſile, obtuſe, convex above, concave beneath, finely ciliate about the edge, ſlightly hirſute on each ſide, above ſomewhat gloſſy. Flowers from the axils of the leaves, on ſhort peduncles, oppoſite, forming a ſpike or raceme at the tops of the branches and ſtem. Calyx angular, pubeſcent; ſegments lanceolate, acuminate, ciliate, nearly equal, dark purple at the ends, and with a few dark purple globular glands ſtrewed on the outſide. Corolla, tube rather crooked, a little hairy, white, ſtained with yellow at the mouth: border blueiſh white, with purple ſtreaks; upper lip ſubovate, bifid, the ſegments ending in three teeth, pubeſcent, blunt, upright, white, with three purple lines on each ſide; lower lip larger, all the ſegments emarginate, the middle ſegment largeſt, and having a yellow blotch; the lateral ones marked with three purple lines; Filaments purpliſh, not prominent beyond the upper lip: anthers purple, or brown, bearded underneath; or having a few white hairs on the lower part where they open. Germ bearded, or a little hairy at the top: ſtyle pubeſcent on the upper part: ſtigma fringed, with very minute glands round the edge. Capſule four-cornered at bottom, compreſſed above; ſlightly notched at the end, a little hairy towards the top, and marked with black dots. Seeds oblong or ovate[c], ſmall, four or ſix in each cell, with a white edge, ſtreaked longitudinally with white linear ſtreaks; the interſtices pale ferruginous[d].

Common on heaths and other dry paſtures, eſpecially on a chalky ſoil; flowering from july to ſeptember. It varies much in ſize, and in the colour of the corolla, which varies to quite white and yellow; it is more or leſs branching, and ſometimes wholly unbranched.

It ſeems to have been unnoticed by the ancients. The Arabians mention it under the name of *Adbil.* Matthæus Sylvaticus, a phyſician of Mantua, who lived about the year 1320, recommended this plant in diſorders of the eyes[e]. It is ſtill in uſe, particularly as an ingredient in Britiſh herb tobacco: and Mr. Lightfoot informs us, that the highlanders in Scotland make an infuſion of it in milk, and anoint the patient's eyes with a feather dipped in it. It is, however, neglected by the faculty; and even thought by ſome to be injurious, at leaſt in inflammations of the eyes. It is a weak aſtringent: but there ſeems to be no foundation for the old notion of its being uſeful in diſorders of the eyes.

3. Leaves linear, with one tooth on each ſide. Corolla like the foregoing[f]. Annual. Native of Italy.

4. Root annual. The whole plant commonly browniſh red. Stem upright, ſtiff, very much branched, from ſix inches to a foot or more in height, hiſpid, obtuſely four-cornered: branches oppoſite. Leaves oppoſite, ſeſſile, linear-lanceolate, turning down, thinly toothed, ſlightly hiſpid, veins few, and hirſute underneath. Bractes lanceolate, nearly upright, purpliſh. Flowers in long, leafy ſpikes, pointing one way, nodding a little at top; in pairs or ſingle, on ſhort peduncles. Calyx hairy on the outſide: the teeth equal and ſharp. Corolla duſky red or purple (ſometimes varying to white), hairy: very different in form from the foregoing, the upper lip being compreſſed, and ſcarcely emarginate, the three lobes of the lower lip ſhorter than the upper, equal, truncate, crenulate: all the lobes of the anthers are thorny at the tip, and bearded at the baſe; at the back where the filament is inſerted, are ſeveral ſmall club-ſhaped threads or appendages. Germ hairy, ſurrounded and ſheathed at the baſe by a ſkinny membrane: ſtyle before the flower opens bent in under the upper lip, afterwards longer than the corolla, moſt hairy towards the bottom. Seeds ovate, very white, with a membranaceous margin on one ſide, elegantly latticed, with longitudinal ridges, and ſimilar tranſverſe ſtreaks[g].

Common both in corn-fields and paſtures; eſpecially where it is moiſt: flowering from july to ſeptember.

According to Linneus, moſt cattle will eat it. With us it appears to be untouched in paſtures. Whatever may be the caſe while it is young, certainly when it is in full vigour, cattle, ſo far from eating it, do not ſeem fond of the graſs even at the diſtance of ſome inches from the plant.

5. This reſembles the foregoing, but is different in having yellow flowers, the upper lip bearded or villoſe within and without, and emarginate; the lower lip concave, trifid; with the ſegments equal. The leaves narrower, ſcarcely linear, hiſpid, hanging

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[a] Bauh. prodr.

[b] Linn.

[c] Curtis, Withering, Hudſon, Lightfoot.

[d] Gærtner.

[e] D'Aſſo.

[f] Linn. ſyſt.

[g] Curtis, Withering, Leers, Gærtner.

down, the lower ones toothletted, the upper ones entire, like thoſe of flax. Stem one, ſeldom more, rough, hard, woody, upright, wand-like, duſky red. Style yellow; ſtigma ſimple; both permanent. Anthers beardleſs. Capſule ſmooth and green at bottom; at top villoſe, blackiſh red. Seeds brown, oblong[h].

According to Gerard (prov. 286. 4.) it differs from the foregoing, in the ſtem being lower, leſs divaricate, and branched; the leaves broader, and more ſcabrous; the flowers yellow, appearing in ſummer.

Native of Switzerland, Savoy, Auſtria, Friuli, Sileſia, the Palatinate, Piedmont, Tuſcany, and the South of France.

6. This is a little ſtiff, narrower, finer, but frequently higher than the common ſort. The leaves are entire. The flowers yellow[i]. Native of France and Italy.

7. This differs from the fifth in having the leaves linear-lanceolate, not ſtrictly linear; the calyxes villoſe and viſcid, not ſmooth; the corollas ſhut, and not ſhorter than the ſtamens. It is alſo to be diſtinguiſhed from E. linifolia[k].

The ſtem, according to Villars, is more firm and leſs branched; the leaves are a little wider than thoſe of the preceding; the calyx is loaded with yellow, viſcid, odoriferous glands; the flowers are yellow.

Gouan obſerves, that it is only three inches high and ſimple, or a foot high and branched, ſmooth or villoſe. All the leaves are broader at the baſe, thence gradually attenuated, and rough with hairs, moſt frequently quite entire, but ſometimes toothed; the lower ones are oppoſite, the reſt alternate, whence the branches themſelves are ſeldom oppoſite. Flowers on a very ſhort peduncle, alternate, each within a ſingle bracte.

Native of Provence, Dauphine, Switzerland, Savoy, Piedmont, and the County of Nice.

8. Native of New Zealand[l].

9. Root annual. Stem upright, ſtiff, round, ſlender, a ſpan high, ſimple, or having two or four oppoſite branches at top, ſhorter than the ſtem; towards the bottom it is leafleſs, and pubeſcent-viſcid, as the whole plant is. Leaves ſeſſile, oppoſite, an inch long, leſs and leſs towards the top of the plant, thickiſh, bluntiſh. Flowers at the top of the ſtem and branches, ſeſſile, alternate, directed the ſame way, yellow, an inch long. Calycine ſegments linear, obtuſe. Upper lip of the corolla oblong, erect: lower longer, flat, three-lobed. Filaments the length of the corolla: anthers villoſe, bifid, the ſegments divaricate, mucronate. Capſule half the length of the calyx, reſembling that of the common ſort. It is diſtinguiſhed by the length of the corolla, with a filiform tube twice or three times as long as the calyx[m].

According to Cavanilles, the ſtem is a foot high, of a dark red colour; the branches decuſſated and four-cornered. Leaves longer than the internodes, as it were imbricate, ſtudded with very minute glutinous globules. Flowers axillary, in ſpikes. Calyx cut half way. Tube of the corolla half an inch long; lower lip broader, with rounded ſegments. Filaments ſhort, faſtened to the upper part of the tube, within the upper lip: anthers ovate, twin, two-awned at the baſe, and perforated. Style red, the length of the corolla: ſtigma club-ſhaped. Seeds longitudinally ſtreaked.

Native of Spain. Found there by Barrelier; by Barnades in 1756; by Buens near Eſpexa, by Cavanilles near Rivas, and by Vahl in Arragon. It flowers there in ſeptember.

PROPAGATION AND CULTURE.

Theſe are all annual plants, to be propagated only from ſeeds, ſowed ſoon after they are ripe, or in the ſpring, in the borders of the garden. The ſecond ſort will not grow in a garden, unleſs it has graſs or ſome other herbs to protect it. This and the fourth are common weeds. The other ſorts are natives of the ſouthern countries of Europe, and are not without difficulty preſerved in gardens. The herb-women ſupply the markets plentifully with the ſecond ſorts from the paſtures.

EUPHRASIA. See *Bartſia, Juſtitia, Mimulus, Rhinanthus, Ruellia, Schwalbea.*

Euphraſiæ affinis. See *Juſtitia* & *Torenia.*

EURYA. (*From* ευρυς *latus, broad.*)

Lin. gen. Schreb. n. 820. *Thunb. jap.* 11. *nov. gen.* 67. *Juſſ.* 432.

Claſſ. 11. 1. Dodecandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved; *leaflets* ovate, concave, obtuſe, ſmooth; ſurrounded at the baſe with a two-leaved ſimilar calycle, one-third only of the ſize of the calyx.

COR. *Petals* five, roundiſh-ovate, concave, the ſize of the calyx. *Nectary*, dots or a purple rim, at the baſe of the filaments.

STAM. *Filaments* thirteen, very ſhort, ſo as to be ſcarcely any. *Anthers* upright, four-ſided, almoſt the length of the corolla.

PIST. *Germ* ſuperior, convex, ſmooth. *Style* ſubulate, ſhorter than the anthers. *Stigmas* three, reflex.

PER. *Capſule* globular, with the ſtyle permanent, ſharp, ſmooth, five-celled, five-valved.

SEEDS ſomewhat three-cornered, dotted (very many, 10, 20. *Kæmpf.*)

OBS. *The flowers ſeem very frequently to be dioecous.*

ESSENTIAL CHARACTER.

Cal. five-leaved, calycled. *Cor.* five-petalled. *Stam.* thirteen. *Capſ.* five-celled.

SPECIES.

1. Eurya japonica.

Lin. ſyſt. 444. *Thunb. jap.* 191. *t.* 25.

Fiſakaki. *Kæmpf. amœn.* 5. 778.

DESCRIPTION, *&c.*

All parts of the plant are ſmooth. Stem ſhrubby. Branches and twigs alternate, lax, from upright bent in, aſh-coloured. Leaves on the twigs alternate, frequent, petioled, elliptic or oblong, drawn to a point at both ends, ſerrate, a little turned back at the edge, entire at the baſe, very ſmooth, thickiſh, ever-green, in two rows, upright, with an emarginate point, nerved, the upper ſurface green, but underneath yellowiſh, an inch or more in length. Petioles decurrent, ſemicylindric, grooved above, ſmooth, a line in length. Flowers axillary, in pairs, peduncled, drooping, ſeldom either ſingle or in threes. Peduncles filiform, one-flowered, ſcarcely longer than the petioles. It flowers in ſeptember and october. Native of Japan[*].

EURYANDRA. (*From* ευρυς *wide, and* ανηρ *male; the filaments or male organ of the plant being dilated, eſpecially at the tip.*)

Lin. gen. Schreb. n. 926. *Forſt. gen. t.* 44. *Juſſ.* 280.

Claſſ. 13. 3. Polyandria Trigynia.

Nat. order of *Coadunatæ.—Magnoliæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved: *leaflets* roundiſh, concave; the two outer ſmaller.

COR. *Petals* three, roundiſh, concave, longer than the calyx.

STAM. *Filaments* very many, capillary, very much dilated at the tip. *Anthers* twin, with the cells disjoined.

PIST. *Germs* three, ovate. *Styles* three, very ſhort. *Stigmas* two, ſlightly divided.

PER. *Follicles* three, ovate, divaricate, opening longitudinally on the inner ſide.

SEEDS ſome.

ESSENTIAL CHARACTER.

Cal. five-leaved. *Cor.* three-petalled. *Filam.* much dilated at the tip, with twin disjoined anthers. *Follicles* three.

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[h] Krocker.

[i] Villars.

[k] Linn. mant.

[l] Forſter.

[m] Vahl.

[*] Thunberg.

SPECIES.

1. Euryandra ſcandens.

Forſt. gen. 82.

It is a climbing plant; a native of New Caledonia *.

EXACUM, (*of Pliny*, Εξακον *of Dioſcorides. Derivation unknown.*)

Lin. gen. n. 141. *Reich.* 147. *Schreb.* 185. *Juſſ.* 142. *Gærtn. t.* 114.

Claſſ. 4. 1. Tetrandria Monogynia.

Nat. order of *Rotaceæ.—Gentianæ* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* four-leaved: *leaflets* ovate, obtuſe, from erect-ſpreading, permanent.

Cor. one-petalled, permanent: *tube* globoſe, length of the calyx: *border* four-parted: *diviſions* roundiſh, ſpreading.

Stam. *Filaments* four, filiform, ſitting on the tube; length of the border. *Anthers* roundiſh.

Pist. *Germ* roundiſh, filling the tube. *Style* filiform, upright, length of the border. *Stigma* headed.

Per. *Capſule* roundiſh, compreſſed, two-furrowed, two-celled, length of the calyx.

Seeds numerous, receptacle filling up the capſule.

ESSENTIAL CHARACTER.

Cal. four-leaved. *Cor.* ſalver-ſhaped, with an inflated tube. *Capſ.* two-furrowed, two-celled, many-ſeeded, burſting at the top.

SPECIES.

1. Exacum albens.

Lin. ſyſt. 155. *ſuppl.* 123. *Burm. afr.* 207. *t.* 74. *f.* 4. (Centaurium).

Leaves ſubdecurrent; ſtamens protruded.

2. Exacum pedunculatum.

Lin. ſpec. 163. *Reich* 1. 318. *Vahl ſymb.* 3. 15. *Pluk. mant. t.* 343. *f.* 3. (Centaurium).

Flowers four-cleft terminating, calycine leaflets ovate, leaves lanceolate three-nerved undotted.

3. Exacum aureum.

Lin. ſyſt. 155. *ſuppl.* 123. *Pluk. phyt. t.* 275. *f.* 3. (Centaurium).

Leaves ſeſſile, ſtamens protruded.

4. Exacum ſeſſile.

Lin. ſpec. 163. *Reich.* 1. 318. *fl. zeyl. n.* 61. *amoen.* 1. 391.

Flowers four-cleft lateral and terminating, capſules nodding, leaves heart-ſhaped.

5. Exacum cordatum.

Lin. ſyſt. 155. *ſuppl.* 124.

E. grandiflorum. *Gærtn. fruct.* 2. 158?

Flowers five-cleft, calycine leaflets heart-ſhaped, ſtriated.

6. Exacum guianenſe.

Vahl ſymb. 3. 16. *Aubl. guian.* 68. *t.* 26. *f.* 1.

Corollas four-cleft, calyxes membranaceous-keeled even, leaves lanceolate.

7. Exacum ſpicatum.

Vahl ſymb. 3. 17. *Aubl. guian.* 72. *t.* 27. (Coutubea).

Flowers ſpiked in whorls of threes, leaves lanceolate, ſtem ſimple.

8. Exacum ramoſum.

Vahl ſymb. 3. 17.

Coutubea ramoſa. *Aubl. guian.* 74. *t.* 28.

Flowers ſubſpiked oppoſite, leaves lanceolate, ſtem branched.

9. Exacum punctatum.

Lin. ſyſt. 155. *ſuppl.* 124.

Leaves on very ſhort petioles oblong three-nerved dotted, ſtamens protruded.

10. Exacum viſcoſum.

Smith ic. rar. 18.

Gentiana viſcoſa. *Ait. hort. kew.* 1. 321.

Leaves oblong nerved embracing, flowers five-cleft, bractes heart-ſhaped, perfoliate, longer than the calyx.

DESCRIPTIONS, &c.

This genus differs from Gentiana, according to the obſervation of Vahl, in little elſe beſides the number of ſtamens. Dr. Smith however remarks, that it differs from Gentiana in not having a cloven ſtyle; from Swertia in the want of honey-bearing pores; from Chlora in not having a four-cleft ſtigma, as well as in the number of the parts being widely different; from Liſianthus in not having its ſtigma formed of two flat plates; and from Chironia in its ſtraight, not ſpirally twiſted anthers. Probably many plants referred by Linneus to the laſt genus may belong to this.—The eſſential characters of the genus Exacum are, 1. a ſalver-ſhaped corolla; 2. a ſimple ſtyle, with a capitate ſtigma, ſlightly cloven; 3. ſtraight anthers, burſting longitudinally on their inſide [a].

Although theſe plants are removed from the fifth claſs to the fourth, yet ſome of the ſpecies have five parts in the fructification.

The flowers are axillary, or dichotomouſly corymbed and terminating, one-flowered in the diviſions [b].

1. Root annual. Stem a hand's breadth high; dichotomous, herbaceous, four-ſided, ſmooth, faſtigiate. Leaves heart-ſhaped, ſomewhat ſtem-claſping, oleraceous, ſmooth, decurrent at the edge. Corolla ſalver-ſhaped, white; tube cylindric, longer than the calyx; border the length of the tube. Filaments very ſhort. Anthers oblong. Stigmas two, thickiſh. Capſule ſuperior, cylindric. It has the appearance of Gentiana Centaurium.

Native of the Cape of Good Hope; where it was obſerved by Sparrmann [c].

2. Root annual. Stem upright, a palm in height, four-cornered with acute angles, branched, very ſmooth, as is the whole plant: branches few, ſimple, oppoſite, ſhorter than the ſtem. Leaves oppoſite, ſeſſile, an inch long, ſharp at both ends, quite entire, even. Peduncles from the top of the ſtem and branches, ſolitary, one-flowered, ſhort. Calyx four-parted, four-cornered; the parts ovate, acuminate, membranaceous at the edge. Corolla ſubcampanulate, violet-coloured, larger than in the other ſorts, permanent: tube the length of the calyx: ſegments of the border lanceolate, obtuſe. Anthers linear, a little ſhorter than the border. Style the length of the corolla: ſtigma thickened. Capſule globular, even, the ſize of black Pepper.—It has the habit of Chironia trinervia; but differs in ſize, in having a four-cleft corolla, and four ſtamens. It differs widely from E. albens, with which the younger Linneus has joined it, in his ſupplement [d].

Native of the Eaſt Indies.

3. Root annual. Stem a hand's breadth high, dichotomous, ſlightly four-cornered, ſmooth, brachiate. Leaves oppoſite, heart-ſhaped, the upper and lower lanceolate. Peduncles from the diviſions, one-flowered, the length of the flower. Calyx five-leaved. Corolla yellow, ſalver-ſhaped, four-cleft; ſegments lanceolate, ſharp. Filaments briſtle-form; anthers oblong. Germ ovate: ſtyle the length of the ſtamens; ſtigma thickiſh. Capſule cylindric, obtuſe, half-two-celled, bivalve. It has the appearance of Gentiana Centaurium.

Native of the Cape of Good Hope [e].

4. Stem erect, a ſpan high, four-cornered, even, ſimple, dichotomous at top. Leaves oppoſite, ovate, ſeſſile, quite entire. Flowers from the diviſions of the ſtem, ſolitary, ſeſſile, larger than the leaves.

Native of the Eaſt Indies [f].

5. Plant like *Chironia trinervia*; but the flower blue. *Root* annual. *Stem* herbaceous, dichotomous, a ſhort ſpan in height. *Leaves* ſeſſile, cordate, veinleſs, ſmooth, ſharp. *Flowers* axillary at the forks, on one-flowered, ſhort peduncles. *Calyx* five-leaved, five-cornered: leaflets half-cordate, membranaceous with a boat-ſhaped keel, oblique, ſtreaked. *Corolla* yellow, ſalver-ſhaped: tube cylindric, longer than the calyx; border five-parted, obovate. *Filaments* ſhort, in the throat of the corolla: *anthers* oblong. *Style* the length of the ſtamens: *ſtigma*

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* Forſter.

[a] Smith ic. rar. [b] Juſſieu gen. [c] Linn. ſuppl. [d] Vahl. [e] Linn. ſupul. [f] Linn. zeyl.

thickiſh, oblong, cloven. *Capſule* oblong.—This has alſo the appearance of Gentiana Centaurium.

Native of the Cape[g].

6. The plant is often ſcarcely a finger's height, with a ſtem either quite ſimple or very little branched, and quite ſmooth, upright and ſharply four-cornered. Leaves oppoſite, attenuated, the lower ones ſhorter and ſharp. Peduncles terminating or from the upper axils, ſolitary, one-flowered, very ſhort, angular. Calyx reſembling that of Gentiana exacoides, four-leaved, four-cornered, with the angles prominent and membranaceous: leaflets ovate, much attenuated, without oblique ſtreaks ſuch as thoſe in E. ſeſſile.

Native of Cayenne.

7. Stem herbaceous, two feet high, erect, quite ſimple except that ſometimes there are two flowering branches from the laſt axils, obſcurely four-cornered, without decurrent lines, ſmooth as is alſo the whole plant, very ſmooth. Leaves oppoſite, ſeſſile, remote, two inches and more in length, very even, ſimply and obſcurely veined, attenuated, quite entire. Spike terminating, erect, pyramidal, almoſt a ſpan long, with abundance of flowers. Bracte awl-ſhaped, very narrow, at the baſe of each calyx; which is tubular, deeply four-cleft; the clefts lanceolate, much attenuated, the ſame length with the tube of the corolla. Corolla twice the length of the calyx, with a cylindrical tube: border before it is unfolded four-cornered, attenuated, rolled up ſpirally at the top; diviſions lanceolate, the length of the tube. Filaments fixed to the middle of the tube, the length of the corolla, dilated at the baſe, with the margins ſubconverging at top. Anthers ſagittate. Germ ſuperior, oblong, acute. Style the length of the ſtamens. Stigma bilamellate. Capſule oblong, one-celled, two-valved. The flowers have the very ſame habit with the other ſpecies, nor do they ſeem to have any character different from this genus, (except in having the ſtigma formed of two flat plates, as in Liſianthus.) The lower part of the ſtamens is falſely repreſented as diſtinct from the filaments in Aublet's figure. There is no nectary, except we regard the arch formed by the upper converging margins of the filament as ſuch.

Native of Cayenne.

8. The whole plant is ſmooth. Stem erect, ſlightly four-cornered by four very ſlender decurrent lines: branches oppoſite, ſimple. Leaves ſeſſile, oppoſite, an inch long and more, narrower and ſhorter than in the preceding, attenuated to both ends, quite entire, obſcurely veined underneath: the floral leaves narrower, the lower ones longer than the calyx, gradually decreaſing towards the top of the plant, the uppermoſt ſmall ſcarcely equal to the pedicel. Flowers diſtant, on very ſhort pedicels, with two briſtle-ſhaped, appreſſed bractes at the baſe of the calyx; which is one-leafed, oblong, four-cleft; the clefts lanceolate, attenuated, membranaceous at the edge. Segments of the corolla ovate, acute.

Native of Guiana[h].

9. This is larger than the other ſpecies. Leaves as in Hypericum, glandular, dotted. Corolla blueiſh, Stamens yellow.

Native of the Eaſt Indies, where it was obſerved by König[i].

10. Root perennial. Stem ſomewhat ſhrubby, erect, roundiſh: branches oppoſite, erect, ſlightly quadrangular, green, leafy, many-flowered. Leaves oppoſite, acute, entire, with three or five nerves, reticulated with veins, green on both ſides, ſmooth, dilated into a heart-like ſhape at the baſe. Panicles terminating, erect, ſubdivided in a three-fold order, much branched, many-flowered. Pedicels roundiſh, ſlender, ſingle-flowered. Bractes two at each diviſion of the panicle as well as under each flower, formed like the leaves, but ſmaller, nerved, permanent. Flowers of an elegant golden colour, inodorous, ſlightly drooping, the ſize of thoſe of Chlora perfoliata. Calyx one-third the length of the bractes, bell-ſhaped, deeply five-cleft, viſcid; ſegments erect, blunt, ſomewhat membranous at the edge, ſmooth. Tube of the corolla twice as long as the calyx, tranſparent, highly viſcid, ſwelling at the baſe, and becoming ovate where it is filled by the increaſing germ, contracted at the orifice; ſegments ſpreading, the length of the tube, obovate, obtuſe, paler beneath. Stamens five, projecting, half as long as the border: filaments inſerted into the orifice of the tube, leaning towards the upper ſide of the flower, equal, whitiſh, ſlightly incurved at the tip. Anthers oblong, incumbent, cloven at the baſe, burſting by two longitudinal openings on the inſide, permanent, never becoming ſpirally twiſted, pale yellow. Germ oval, with two furrows, green, ſmooth, half as long as the tube. Style ſcarcely ſo long as the ſtamens, declining, round, whitiſh, curved upwards at the end. Stigma capitated, ſlightly cloven[k].

Found by Mr. Francis Maſſon in the Canary iſlands, and introduced in 1781[l].

PROPAGATION AND CULTURE.

See Gentiana.

Exacum filiforme. See *Gentiana filiformis.*

EXCOECARIA. (*From* Excoeco, *to deprive of ſight.*)

Lin. gen. n. 1102. *Reich.* 1205. *Schreb.* 1498. *Rumph. Juſſ.* 390. *Gærtn. t.* 108.

Claſſ. 22. 3. Dioecia Triandria.

Nat. order of *Tricoccæ. Euphorbiæ* Juſſ.

GENERIC CHARACTER.

* *Male.*

Cal. *Ament* cylindric, covered with floſcules.

Cor. none.

Stam. *Filaments* three, filiform. *Anthers* roundiſh.

* *Female.*

Cal. *Ament* as in the male.

Cor. none.

Pist. *Germ* roundiſh, ſlightly three-ſided. *Styles* three. *Stigmas* ſimple.

Per. *Berry* (*Capſule*) tricoccous, ſmooth, diviſions marked out by a furrow.

Seeds ſolitary ſmooth.

ESSENTIAL CHARACTER.

Ament naked. *Cal.* and *Cor.* none. *Styles* three. *Capſ.* tricoccous.

SPECIES.

1. Excoecaria Agallocha.
   Lin. ſpec. 1451. *ſyſt.* 882. *Reich.* 4. 238. *Gærtn. fruct.* 2. 126.
   Arbor excoecans. *Rumph. amb.* 2. 237. *t.* 79, 80.
2. Excoecaria cochinchinenſis.
   Lour. cochinch. 612.
   Leaves two-coloured ſhining, ſcales of the ament many-flowered.

DESCRIPTIONS, &c.

1. Capſule ſmall, the ſize of a Juniper berry, ſubglobular, three-grooved, ſmooth, black, three-celled, of a papery ſubſtance, not divided within into three diſtinct grains, but merely opening, when preſſed, by three valves. Seeds one in each cell, ſubglobular, acuminate at top, convex on one ſide, very bluntly angular on the other. Rumphius deſcribes the capſules of the ſize of the Caper, rufeſcent when ripe, and burſting elaſtically; the ſeeds hard, and variegated like thoſe of Ricinus[m].

Native of Amboina and Tongatabu.

2. This is an arboreous ſhrub, eight feet high; with the ſtem and branches irregular, ſpreading, reclining. Leaves lanceolate, ſlightly ſerrate, petioled, ſome oppoſite others ſcattered, the upper ſurface dark-green, the lower very red, both ſhining. Scales of the ament imbricate, ſubterminating. The female flowers have three, long, awl-ſhaped, reflex ſtigmas. Capſule three-lobed, ſomewhat fleſhy, red, ſmall, three-celled, three-valved. Seeds ovate, ſmooth and even.

It poſſeſſes an aſtringent agglutinating quality. The whole plant abounds in a glutinous milky juice, which has not the reputation of deſtroying the ſight, nor is the Agallochum, even of a baſtard ſort found in it.

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[g] Linn. ſuppl.

[h] Vahl.

[i] Linn. ſuppl.

[k] Smith.

[l] Hort. kew.

[m] Gærtner.

Native both of China and Cochinchina, where it is cultivated for the beauty of its red leaves [n].

EXOACANTHA. (*From* εξακανθουμαι, *ſpinis horreo.* Οξυακανθα *or* Οξυακανθος *is the name of a tree in Dioſcorides.*)

Billardiere ic. ſyr. 1. 10. *t.* 2.

Claſſ. 5. 2. Pentandria Digynia.

Nat. order of *Umbellatæ* or *Umbelliferæ.*

GENERIC CHARACTER.

Cal. *Umbel univerſal* manifold, ſpreading, the inner rays gradually ſmaller, the inmoſt very ſhort. *Partial* manifold.

Involucre univerſal with rays uſually twelve, channelled, ſpiny at the end. *Partial* halved, with the middle ray very long, ſimilar to the rays of the involucre.

Perianth proper ſcarcely obſervable.

Cor. *univerſal* uniform.

Proper five-petalled. *Petals* inflex-heart-ſhaped, equal.

Stam. *Filaments* five, capillary, longer than the corolla. *Anthers* roundiſh.

Pist. *Germ* inferior, ovate. *Styles* two, ſhorter, ſtraight. *Stigmas* two, ſimple.

Per. *Fruit* ſubovate, ſtriated, bipartile.

Seeds two, ovate, convex and ſtriated on one ſide, flat on the other.

Obs. *Allied to* Echinophora, *but with uncalycled flowers, all hermaphrodite, equal petals, and naked ſeeds.*

ESSENTIAL CHARACTER.

Invol. ſpiny. *Involucels* halved with unequal rays. *Flowers* all hermaphrodite, with equal inflex-heart-ſhaped petals. *Seeds* ovate, ſtriated.

SPECIES.

1. Exoacantha heterophylla.

Billard. ſyr. 10. *t.* 2.

Leaves pinnate, root-leaflets ovate toothed gaſhed, ſtem-leaves lanceolate acute.

DESCRIPTION, *&c.*

Root ſimple, thickiſh, biennial. Stem two feet high or more, ſtriated, ſubflexuoſe, ſmooth. Leaves ſmooth. Stem-leaves uſually entire, with the middle leaflet very long. The two umbels have about forty rays; thoſe of the umbellule nearly equal. Leaflets of the involucel from nine to eleven, unequal: the central ones with ſhort briſtle-ſhaped rays: the circumference with three middle rays, ſometimes five, channelled, ſpiny at the tip. Petals white. Anthers yellowiſh. Fruit ten-ſtreaked.

Found by Billardiere near Nazareth [o].

Eyebright. See *Euphraſia.*

⁎ *The following articles, having by an overſight been omitted in their proper place, are inſerted here.*

ERODIUM. (Ερωδιος, *is the name of the Crane in Ariſtotle, whence this genus is ſo called on account of the long beak to the fruit.*)

L'Herit. geran. Ait. hort. kew. 2. 414.

Gerania myrrhina. *Linn. Gærtn. t.* 79.

Claſſ. 16. 2. Monadelphia Pentandria.

Nat. order of *Gruinales. Gerania* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* five-leaved: *leaflets* ovate, acute, concave, permanent.

Cor. *Petals* five, obcordate or ovate, ſpreading, large. *Nectary,* five ſcales alternate with the filaments; and melliferous glands placed at the baſe of the ſtamens.

Stam. *Filaments* five, awl-ſhaped, connected at the baſe with the ſcales into the ſhape of a pitcher, but ſpreading at top, ſhorter than the corolla. *Anthers* oblong, verſatile.

Pist. *Germ* five-cornered, beaked. *Style* awl-ſhaped, longer than the ſtamens, permanent. *Stigmas* five, reflex.

Per. *Capſule* five-grained, beaked, the cells opening inwards, each having a long tail fixed to it, which becomes ſpiral, and is hairy or bearded on the inſide.

Seeds ſolitary (ſeldom two together,) ovate-oblong.

ESSENTIAL CHARACTER.

Cal. five-leaved. *Cor.* five-petalled. *Nect.* five ſcales, alternate with the filaments, and glands at the baſe of the ſtamens. *Fruit* five-grained, with a ſpiral beak, bearded on the inſide.

SPECIES.

* *Leaves compound or pinnatifid.*

1. Erodium abſynthoides. *Wormwood-leaved Crane's-bill.*

L'Herit. ger. n. 1.

G. orientale moſchatum abſynthii folio. *Tournef. cor.* 20.

Cauleſcent, peduncles four-flowered or thereabouts, leaves interruptedly bipinnate laciniate, ſegments linear.

2. Erodium chryſanthum. *Golden-flowered Crane's-b.*

L'Herit. ger. n. 2.

Almoſt ſtemleſs, peduncles four-flowered, leaves decompoundedly pinnate laciniate ſilky.

3. Erodium trichomanifolium. *Maidenhair-leaved Crane's-bill.*

L'Herit. ger. n. 3.

Stemleſs, ſcapes leafleſs four-flowered, leaves bipinnatifid hirſute.

4. Erodium pulverulentum. *Hoary-leaved Crane's-b.*

L'Herit. geran. n. 4.

Cauleſcent, peduncles many-flowered, leaves decompoundedly laciniate mealy hoary.

5. Erodium craſſifolium. *Upright Crane's-bill.*

L'Herit. geran. n. 5. *Ait. hort. kew.* 2. 415.

G. pulverulentum. *Cavan. diſſ.* 5. 396. *t.* 135. *f.* 1.

Umbels many-flowered, leaves pinnatifid-laciniate thick, ſegments linear.

6. Erodium foetidum. *Stinking Crane's-bill.*

L'Herit. ger. n. 6.

G. foetidum. *Park. theat.* 709. *Lob. illuſtr.* 134. *Mor. hiſt.* 517. *ſ.* 5. *t.* 14. *f.* 7.

G. petræum. *Gouan illuſtr.* 45. *t.* 21. *f.* 1. *Cavan. diſſ.* 4. *n.* 315. *t.* 96. *f.* 2. *Magn. bot.* 109. *t.* 8. *Tournef. inſt.* 269.

Almoſt ſtemleſs, ſcapes radical many-flowered, leaves interruptedly bipinnatifid, petals roundiſh.

7. Erodium macrademum.

L'Herit. ger. n. 7. *t.* 1.

G. glanduloſum. *Cavan. diſſ.* 5. *n.* 395. *t.* 125. *f.* 2.

Subcauleſcent, ſcapes radical many-flowered, leaves interruptedly bipinnatifid, petals ovate.

8. Erodium ſupracanum. *Silky-leaved Crane's-bill.*

L'Herit. ger. n. 8. *t.* 2.

G. rupeſtre. *Cavan. diſſ.* 4. *n.* 316. *t.* 90. *f.* 1.

Almoſt ſtemleſs, ſcapes radical two-flowered or thereabouts, leaves interruptedly bipinnatifid thickiſh ſilky-hoary on the upper ſurface.

9. Erodium petroſelinum. *Parſley-leaved Crane's-b.*

L'Herit. ger. n. 9.

G. bipinnatum. *Cavan. diſſ.* 5. *n.* 399. *t.* 126. *f.* 3.

G. numidicum. *Poir. barb.* 2. 201.

Peduncles two-flowered, leaves pinnate, leaflets pinnatifid, ſegments linear.

10. Erodium alpinum. *Alpine Crane's-bill.*

L'Herit. ger. n. 10. *t.* 3.]

G. alpinum. *Burm. ger.* 30. *Mill. dict. n.* 12. *Cavan. diſſ.* 4. *n.* 323. *t.* 96. *f.* 1. *Bocc. muſ.* 93. *t.* 82. *Tournef. inſt.* 269.

Peduncles many-flowered, leaves interruptedly pinnatifid-laciniate.

11. [Erodium romanum. *Roman Crane's-bill.*

L'Herit. geran. n. 11. *Ait. hort. kew.* 414.]

Geranium romanum. *Lin. ſpec.* 951. *ſyſt.* 615. *Reich.* 3. 317. *Burm. ger.* 30. *Mill. dict. n.* 41.

G. acaule. *Lin. ſyſt. ed.* 10. *p.* 1143.

G. myrrhinum tenuifolium, amplo flore purpureo. *Barrel. ic.* 1245.

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[n] Loureiro.

[o] Billardiere.

Stemleſs, ſcapes radical many-flowered, leaves pinnate, leaflets pinnatifid.

[12. Erodium cicutarium. *Hemlock-leaved Crane's-b.*
L'Herit. geran. n. 12. *Ait. hort. kew.* 2. 414.

Geranium cicutarium. *Lin. ſpec.* 951. *Reich.* 3. 317. *hort. cliff.* 344. 10. *fl. ſuec. n.* 625. *Burm. ger.* 33. *Cavan. diſſ.* 4. *n.* 318. *t.* 93. *f.* 1. *Gouan illuſtr.* 46. *Hudſ. angl.* 300. *Wither. arr.* 722. *Curt. lond.* 1. *t.* 51. *Lightf. ſcot.* 366. *Relh. cant. n.* 497. *Hall. helv. n.* 944. *Scop. carn. n.* 853. *Pollich pal. n.* 646. *Leers herbörn. n.* 533. *Neck. gallob.* 290. *Krock. ſileſ. n.* 1106. *Villars dauph.* 3. 367. *Fl. dan. t.* 986.

β. *Rivin. pent. t.* 114. (G. robertianum). *Raii ſyn.* 358. *Dill. giſſ.* 173. & *app.* 69. *With.* 724.

G. cicutæ folio minus & ſupinum. *Bauh. pin.* 319. *Dill. giſſ.* 48. — inodorum. *Ger.* 800. *f.* 3; 4. *emac.* 945. 3. *Raii ſyn.* 357. *hiſt.* 1057. 8. *Mor. hiſt.* 2. 512. *ſ.* 5. *t.* 15. *f.* 9. *Pet. brit. t.* 65. *f.* 3.

G. ſeptimum ſ. gruinum. *Dod. pempt.* 64. *Lob. ic.* 659. 1.

G. moſchatum, folio ad myrrhidem accedente, minus. *Bauh. hiſt.* 3. 479.

G. chærophyllum. *Cavan. diſſ.* 4. *n.* 319. *t.* 95. *f.* 1. & G. præcox, *diſſ.* 5. *n.* 398. *t.* 126. *f.* 1.

Peduncles many-flowered, leaves pinnate, leaflets ſeſſile pinnatifid.

13. Erodium moſchatum. *Muſk Crane's-bill.*
L'Herit. geran. n. 13. *Ait. hort. kew.* 2. 414.]

Geranium moſchatum. *Lin. ſpec.* 951. *Reich.* 3. 318. *mat. med.* 165. *Burm. ger.* 29. *Mill. dict. n.* 17. *Gærtn. fruct.* 383. *Hudſ. angl.* 300. *Wither. arr.* 725. *Hall. helv. n.* 945. *Scop. carn. n.* 854. *Jacqu. hort.* 1. 22. *t.* 55. *Blackw. t.* 150. *Rivin. pent.* 112. *Ger.* 796. *emac.* 941. *Park. theat.* 709. *f.* 1. *Raii hiſt.* 1057. 10. *ſyn.* 358. *Petiv. brit. t.* 65. *f.* 2. *Mor. ſ.* 5. *t.* 15. *f.* 10.

G. cicutæ folio moſchatum. *Bauh. pin.* 319.—ad myrridem accedente majus. *Bauh. hiſt.* 3. 479.

G. primum. *Fuchſ. hiſt.* 204.

Peduncles many-flowered, leaves pinnate, leaflets ſubpetioled unequally gaſhed.

[14. Erodium tordylioides.
L'Herit. ger. n. 14.

Peduncles many-flowered, leaves bipinnatifid unequally ſerrate, the outmoſt lobes confluent.

15. Erodium gruinum. *Broad-leaved annual Crane's-bill.*
L'Herit. geran. n. 15. *Ait. hort. kew.* 2. 415.]

Geranium gruinum. *Lin. ſpec.* 952. *Reich.* 3. 320. *hort. cliff.* 498. *n.* 25. *Burm. ger.* 32. *Mill. dict. n.* 18.

G. creticum annuum hæmatodes. *Lob. ic.* 662. *Mor. hiſt. ſ.* 5. *t.* 15. *f.* 12.

G. latifolium longiſſima acu. *Bauh. pin.* 319.

Peduncles many-flowered, leaves ternate crenate-toothed, the outmoſt pinnatifid-lobed.

16. [Erodium ciconium. *Long-beaked Crane's-bill.*
L'Herit. n. 16. *Ait. hort. kew.* 2. 415.]

α. Geranium ciconium. *Lin. ſpec.* 952. *Reich.* 3. 320. *amœn.* 4. 282. *Burm. ger.* 28. *Mill. dict. n.* 19. *Jacqu. hort.* 1. *t.* 18. *Cavan. diſſ.* 4. 322. *t.* 95. *f.* 2.

G. cicutæ folio acu longiſſima. *Bauh. pin.* 319. *prodr.* 138. *Garid. gallopr.* 207. *t.* 40.

[β. G. Botrys. *Cavan. diſſ.* 218. *n.* 304. *t.* 90. *f.* 2. *Bocc. muſ.* 145. *t.* 109. *ind.* 9. *Hairy Crane's-bill.*

17. Erodum lacerum.
L'Herit. ger. n. 17.

G. laciniatum. *Cavan. diſſ.* 4. *n.* 321. *t.* 113. *f.* 3.

G. fol. alceæ, &c. *Boerh. ind. alt.* 266. *Rand. act. angl.* 1725. *vol.* 33. *p.* 307. *Mart. dec. t.* 16.

Peduncles many-flowered, leaves doubly-pinnatifid, ſegments very remote linear quite entire.

18. Erodium diphyllum.
L'Herit. ger. n. 18.

G. procumbens althææ folio. *Raii hiſt.* 1056. *Cup. cathol.* 85. *ſuppl.* 32.

G. creticum humifuſum, fol. ſubrotundis laciniatis, acu longiſſima. *Tournef. cor.* 19.

Peduncles many-flowered, involucres two-leaved roundiſh, lower leaves three-lobed, upper pinnatifid laciniate gaſhed.

19. Erodium muticum.
L'Herit. ger. n. 19.

Peduncles many-flowered, leaves ternatifid gaſhed toothed, calyxes awnleſs.

20. Erodium hymenodes.
L'Herit. ger. n. 20. *t.* 4.

G. trifolium. *Cavan. diſſ.* 4. 314. *t.* 97. *f.* 3.

Peduncles many-flowered, leaves ternate or ternatifid, ſegments roundiſh lobed.

21. Erodium incarnatum. *Fleſh-coloured Crane's-bill.*
L'Herit. ger. n. 21. *t.* 5. *Ait. hort. kew.* 2. 415. *Curt. magaz.* 261.

G. incarnatum. *Linn. ſuppl.* 306. *Cavan. diſſ.* 4. *n.* 313. *t.* 91. *f.* 2.

Peduncles few-flowered, leaves three-parted or ternate trifid rugged, ſtem ſomewhat ſhrubby.

** *Leaves lobed, or undivided.*

22. Erodium malacoides. *Mallow-leaved Crane's-bill.*
L'Herit. ger. n. 22. *Ait. hort. kew.* 2. 415.]

α. G. malacoides. *Lin. ſpec.* 592. *Reich.* 3. 318. *Burm. ger.* 34. *Mill. dict. n.* 45. *Cavan. diſſ.* 4. *n.* 307. *t.* 91. *f.* 1.

G. fol. althææ. *Bauh. pin.* 318. *Mor. hiſt. ſ.* 5. *t.* 15. *f.* 7. *Riv. pent. t.* 111. *Lob. ic.* 662.

G. ſextum. *Matth. hiſt.* 859.

[β. Geranium chium. *Lin. ſpec.* 951. *Cavan. diſſ.* 4. *n.* 310. *t.* 92. *f.* 1. *Tournef. cor.* 20.

G. murcicum. *Cavan. diſſ.* 5. *n.* 397. *t.* 126. *f.* 1. *Various-leaved Crane's-bill.*

Peduncles many-flowered, leaves heart-ſhaped three-lobed, lobes lobed obtuſe obſoletely-toothed.

23. Erodium populifolium.
L'Herit. ger. n. 23.

Peduncles many-flowered, leaves heart-ſhaped ſublobed obtuſe toothed, ſtamens hirſute.

24. Erodium nervuloſum.
L'Herit. ger. n. 24.

G. ſupinum, &c. *Bocc. muſ.* 2. *t.* 128. *ind.* 9.

G. procumbens althææ folio. *Raii hiſt.* 1056?

Peduncles many-flowered, leaves heart-ſhaped almoſt undivided toothed thick nerved.

25. Erodium glaucophyllum. *Glaucous Crane's-bill.*
L'Herit. ger. n. 25. *Ait. hort. kew.* 2. 416.]

G. glaucophyllum. *Lin. ſpec.* 952. *Reich.* 3. 319. *Mill. dict. n.* 46. *Dill. elth.* 150. *t.* 124. *f.* 150.

G. glaucum. *Burm. ger.* 62. *f.* 62.

Peduncles many-flowered, leaves oblong obſoletely crenate glaucous, beaks feathered.

[26. Erodium guttatum.
L'Herit. ger. n. 26. *Shaw afr. f.* 260.

Peduncles three-flowered, leaves heart-ſhaped obſoletely lobed tooth-ſerrate aſh-coloured, the centre of a different colour.

27. Erodium maritimum. *Sea Crane's-bill.*
L'Herit. ger. n. 29.

G. maritimum. *Lin. ſpec.* 951. *Reich.* 3. 319. *Hudſ. angl.* 301. *Wither. arr.* 725. *Neck. gallob.* 290. *Raii ſyn.* 357. *Pluk. phyt. t.* 31. *f.* 4. *Mor. hiſt. ſ.* 5. *t.* 35. *f.* 10. *row.* 3. *Petiv. brit. t.* 65. *f.* 1.

Peduncles three-flowered or thereabouts, leaves heart-ſhaped gaſhed crenate rugged, ſtems depreſſed.

28. Erodium chamædryoides. *Dwarf Crane's-bill.*
L'Herit. ger. n. 31. *t.* 6. *Ait. hort. kew.* 2. 416.

G. chamædryoides. *Cavan. diſſ.* 4. 197. *n.* 272. *t.* 76. *f.* 2.

G. parvulum. *Scop. inſubr.* 1. 8. *t.* 3.

G. Reichardi. *Murr. comm. gott.* 1780. *p.* 11. *t.* 3. *Curt. magaz.* 18.

G. æſtivum minimum, &c. *Bocc. muſ.* 160. *t.* 128.

Almoſt ſtemleſs, peduncles one-flowered, leaves heart-ſhaped obtuſe crenate.

DESCRIPTIONS, *&c.*

The genus Geranium was firſt ſeparated into three genera by Monſieur L'Heritier. Of theſe this of Erodium is one, Pelargonium is a ſecond, and the third retains the old name of Geranium. The diviſion is convenient on account of the prodigious number of ſpecies, but they muſt ſtill be conſidered as making only one natural genus.

1. This ſeems to differ from the next ſpecies in being cauleſcent, and in having the ſegments of the leaves linear and ſubvilloſe, not oblong and ſilky, as in that. Found in Armenia by Tournefort, and on mount Olympus by John Sibthorp, M. D.

2. This is very diſtinguiſhable by its yellow flowers. Found on mount Parnaſſus by John Sibthorp, M. D.

3. It may be doubted whether this be any thing more than a variety of the preceding. It differs however in having the flowers fleſh-coloured marked with lines, the leaves ſmaller and leſs cut, the ſcapes leafleſs and radical; whereas E. chryſanthum becomes branched when in flower. Found on mount Libanus by Billardiere.

4. The plant is wholly covered with frequent ſhort villoſe hairs, whence it has the appearance of being duſty. It is certainly allied to the firſt and ſecond ſpecies, from which it differs in its duſty habit, in having the leaves decompoundedly laciniate not interruptedly bipinnate, the flowers more numerous in the umbel, and the fruits only one-third of the length. Found by Louiche Desfontaines in the kingdom of Tunis.

5. In appearance this reſembles Pelargonium myrrhifolium. It differs from the three next, in having thick leaves, pinnatifid not interruptedly pinnate, bractes larger, and roundiſh not lanceolate, the herb cauleſcent, and the root more ſlender not thick[a].

Found in the iſland of Cyprus by John Sibthorp, M. D. and introduced here in 1788. It flowers in april and may[b].

6. All the leaves are heaped about the root; they are hoary with hairs, the whole forming a triangle; pinnas commonly three or four pairs, the outmoſt ſmaller: pinnules pinnatifid, with the leaflets acute, bifid, trifid or entire; between theſe are leaflets which are entire. Petioles twice or three times the length of the leaves, hoary with ſhining hairs. Scape ſcarcely three inches high, round, hiſpid with pellucid hairs, bearing from one to ſix flowers. Pedicels equal, half an inch long, pubeſcent. Calyxes large, ſtriated, very hirſute; leaflets blunt, membranaceous at the edge, ending in a ſhort awn. Corolla large, blue-purple or red. Seeds oblong, with the beaks only double the length of the calyxes[c].

Lobel reports it to be abominably fetid. L'Heritier ſays it is ſingular in having a very ſtrong nauſeous ſmell like ſome of the claſs Syngeneſia; and according to Gouan, it has a ſtrong ſmell, but neither nauſeous nor muſky.

Native of the country about Montpellier. It ſeems to have been cultivated here in the time of Parkinſon.

7. This is allied to the preceding. The herb is entirely the ſame. The leaves, which are very much alike, are more finely laciniated and more ſlender in this; they are ſubcaneſcent in E. foetidum, not paler, as in this. E. macrademum has alſo a turpentine or muſky ſmell. Petals roundiſh equal concolor purpliſh fleſh-coloured, marked with deeper lines, with villoſe claws in that; in this they are ovate, nearly equal, the two upper ones ſcarcely larger but marked with dark violet-coloured veins, and the claws are naked. Filaments erect in that, reclining after flowering time in this. Glands very large globular broader than long in E. macrademum; ſubbilobed in E. foetidum.

Native of Spain.

8. This is very nearly allied to the two preceding and to E. romanum. In the laſt the plant is larger and ſubſtrigoſe, the leaves ſimply not interruptedly pinnate, and the leaflets gaſh-pinnatifid: in E. foetidum and macrademum the plant is hirſute, the leaves interruptedly bipinnate, the leaflets pinnatifid-laciniate: in this the habit of the plant is hoary and ſilky, on account of the upper ſurface of the leaves being ſo, the peduncles are few-flowered, and the leaves interruptedly bipinnatifid.

Found in Montſerrat in Catalonia by Brouſſonet, Sibthorp and Pourret.

9. This has the habit of the three laſt, from which however it differs in having pinnatifid leaves, not interruptedly ſo, and elongated ſtems.

Found on the ſandy coaſts of Barbary by Poiret[d].]

10. Root perennial, running very deep into the ground. Lower leaves ſmooth and on very long footſtalks. Stems a foot and half high, with leaves of the ſame form, but ſmaller and oppoſite. Flowers purple, many together on very long peduncles. [The calyx is awned: the petals are about twice as large, and entire.

Native of Italy[e].]

The ſeeds were ſent to Mr. Miller by Micheli.—It flowers here in june, but the ſeeds do not ripen in England.

11. This has a pretty thick tuberous root. Stems irregular, branching, diffuſed, ſomewhat woody, and having ſwelling joints; at each of theſe is one leaf, oppoſite to which comes out the peduncle: the peduncles on the lower part of the ſtem are very long and naked, but thoſe which terminate the branches are ſhorter, and have one or two ſmall leaves at their baſe; the flowers are in ſmall bunches, and continue in ſucceſſion moſt part of the ſummer. [L'Heritier doubts whether it be ſpecifically diſtinct from E. cicutarium.

Native of Italy, about Rome, on the Pyrenees, alſo of Provence.—It was cultivated in the botanic garden at Chelſea in 1724[f].

12. Root annual. Stems ſeveral, thickiſh, round, hirſute, procumbent and branched. Pinnas of the leaves ſlightly hairy; pinnules ſharply indented. Stipules at the baſe of the leaves membranaceous, whitiſh, acutely ovate, the uppermoſt entire, the lowermoſt generally divided into two. Peduncles axillary, alternate, hirſute, the length of the leaves. Flowers in an umbel, from three to ſix, of a roſe-colour. Calycine leaflets ovate, ſtriated, hirſute, ending in a fine point. Petals ſubovate, flat, nearly equal, hairy at bottom, ſomewhat longer than the calyx. Anthers deep purple. Nectareous glands brown. Germ villoſe: ſtyle awl-ſhaped, grooved: ſtigmas purple. Seeds brown: aril hirſute: awn long, hairy[g].

This ſpecies varies extremely, from nearly ſmooth to very hairy, and from very large and branched, with a many-flowered umbel, to ſmall and nearly ſimple, with few flowers[h].

β. Geranium pimpinellæ folio of Dillenius is a remarkable variety; the petals irregular, the two upper ſhorter, rounder, and marked with a greeniſh ſpot at the baſe[i].

The wings of the leaves have deeper winged clefts, and the pinnules are nearly linear, rarely jagged. Sometimes only one petal is ſpotted, ſometimes three or four, nay even all five; the ſpotted ones are always broad and ſhort, and in the laſt caſe the corolla became regular[k].

The common ſort is found all over Europe, in Africa, Aſia, North America, and the iſland of Madeira. The laſt-mentioned variety has been found in England near Hackney, and in ſeveral parts of Suffolk.

13. This is very like the preceding, but has an ambroſial or muſky ſcent; the whole plant is covered with hairs, which are glutinous, particularly thoſe of the calyx. All the parts are larger; the ſtem is ſwollen and crooked at the joints. The wings are fewer in the leaves, ovate, ſometimes only ſerrate or jagged, rarely pinnatifid. Peduncles thickly ſet with fine white hairs, ending in pellucid globules, with from four to ten flowers, forming a roundiſh head. Corolla red or purple[l]. Annual.

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[a] L'Heritier. [b] Hort. kew. [c] Gouan.

[d] L'Heritier. [e] Ibid. [f] Hort. kew. [g] Curtis. [h] Woodw. Mſs. [i] L'Heritier. [k] Woodw. Mſs. [l] Ibid. and With.

Native of England, France, Switzerland, the Cape of Good Hope, Syria, Barbary, Peru. With us about Batterſea, Streatham, &c. near London, near Briſtol, Stourbridge; in Weſtmoreland and Yorkſhire.

14. This ſeems to differ from the preceding in having a perennial root, and bipinnate leaves; but it is perhaps no more than a variety.

Found on rocks near Algiers by Desfontaines[m].]

15. This is an annual plant with very broad leaves, cut on their ſides regularly and crenate. Flowers on long axillary peduncles. Petals entire and blue. Beaks of the fruit remarkably large. [The ſtem is quite ſmooth, whereas in the next ſpecies it is rough with hairs or ſtrigoſe.

Native of Spain, Sicily, Candia, Cyprus, Syria[n]. Cultivated in 1596 by Gerarde[o].]

16. This alſo is an annual plant, which has ſeveral proſtrate ſtems near a foot long. Peduncles axillary, three inches long. Flowers pale blue. Beaks of the fruit very long, but by no means ſo long or large as thoſe of the preceding.

[Native of the South of Europe, Barbary, Syria, Cyprus, Madeira.—Cultivated in the botanic garden at Chelſea in 1724[p].

β. In this variety the whole plant is rough with hairs. It is a native of Spain, Portugal and Italy, on ſandy coaſts.

17. Stem grooved, branched, more than a foot high. Leaves oppoſite, longer than the petioles, divided almoſt to the petiole, into three pinnated ſegments; the pinnules linear with a point. Stipules ſcarioſe, broadiſh. Peduncles alternately axillary, longer than the leaf. Involucre ſcarioſe, multifid: rays ſix or more, half an inch long. Calyx ovate, ten-ſtreaked; leaflets ovate, awned. Corolla a little larger, very pale blue, with equal petals. Fruit rufeſcent, with a beak two inches long[q].

Native of Portugal.

18. The involucre is compoſed of two oppoſite, membranaceous, largiſh bractes, that are very conſpicuous, and give it the ſignificant trivial name.

Native of Portugal, Gibraltar, Algiers, Tunis, Candia, and Cyprus. Annual[r].

19. Calyxes without any awns. Leaves a little reſembling thoſe of A. Ceterach.—Found by Desfontaines in the kingdom of Tunis[s].

20. The ſtem is ſcaly at the baſe with membranaceous ſtipules, larger than in any other ſpecies.—Found by Desfontaines on rocks in Barbary[t].

21. This has the habit of Potentilla, with a ſlender, ſmooth, hard ſtem, inclining to ſhrubbineſs. The leaves are on very long petioles, heart-ſhaped, roundiſh, undivided, ſmall. Stipules lanceolate, very ſharp. Flowers red, fleſh-coloured, or ſcarlet with a paler diſk[u].

Native of the Cape of Good Hope. Introduced in 1787, by Maſſon[x].]

22. This is an annual plant, with the lower leaves heart-ſhaped and three-lobed. Branches inclining to the ground, and ſpreading a foot and half each way. The peduncles are placed on the ſide of theſe, and ſuſtain many bright-red flowers. The fruits have long beaks.

[Native of the South of Europe, Madeira, Barbary, Syria, the iſlands of the Archipelago and in Peru. Cultivated in 1596, by Gerarde[y].

β. The variety is native of the iſland of Chio.

23. This has the habit of the preceding; from which however it ſeems to differ in its ſtipulation, and in the hirſuteneſs of the filaments, which are ſmooth in malacoides and chium.—Found in Barbary by Poiret[z].

24. Monſ. L'Heritier doubts whether an older plant of this might not prove to be the ſame with E. diphyllum or lacerum.—Native of Sicily.]

25. This is an annual plant, [with leaves very like thoſe of E. malacoides, but ſmooth. Stem extremely ſimple, very ſhort. Peduncles from three to five-flowered. Corolla purple or pale blue, with a dark trifid line at the baſe[a]. It is eaſily known by the gray or glaucous colour of the leaves, and the very long feathered beaks to the fruit.

Native of Egypt[b]. Cultivated here in 1732, by James Sherard, M. D.[c]

26. This is very nearly allied to the preceding, but the herb is ſilky and hoary, not naked and glaucous, as in that. The leaves approach more to the heart ſhape, whereas in glaucophyllum they are oblong. The calyxes have alſo longer awns. The flowers are violet-coloured with a very dark violet diſk, and are extremely ſweet-ſcented.

Found by Shaw and Desfontaines in Barbary[d].

27. Stems branched, lying cloſe to the ground. Root-leaves on long petioles, ſpreading in a circle on the ground, hairy, variouſly cut and jagged, ſometimes nearly lobed: ſtem-leaves ſimilar. Peduncles ſhorter than the leaves. Flowers one to three, pale red, ſmall. Beaks of the fruit very ſmall, not exceeding half an inch in length[e].

Native of England and Holland, on the coaſt, Norfolk and Cornwall. Alſo on ſandy commons in Worceſterſhire.

28. Leaves radical, on very long petioles, numerous, orbiculate-heart-ſhaped, ſhining, much ſhorter than the petioles. Scapes a little longer than the petioles, with oppoſite bractes. Petals white, quite entire, oblong, with villoſe claws, between which are green fleſhy obcordate glands[f].

Native of Minorca and Corſica.—It has been known many years to the nurſery-men by the name G. Reichardi, in compliment to a French gentleman, who firſt diſcovered it in the iſland of Minorca[g].

PROPAGATION AND CULTURE.

See GERANIUM.

EROTEUM. (*So named by Swartz, I preſume from* Ερως.)

Lin. gen. Schreb. n. 1757. 2. *p.* 807. *Swartz prodr.* 85.

Claſſ. 13. 1. Polyandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved; *leaflets* ovate, concave, incumbent, permanent.

COR. *Petals* five, ovate-roundiſh, concave, entire, ſpreading.

STAM. *Filaments* numerous (thirty), ſhorter than the petals, erect, filiform, placed on the receptacle. *Anthers* roundiſh, minute.

PIST. *Germ* ovate, pubeſcent, ſuperior. *Style* erect, generally longer than the ſtamens, awl-ſhaped, trifid at the tip, permanent. *Stigmas* obtuſe, ſimple, reflex.

PER. *Berry* roundiſh, juiceleſs, acuminate with the permanent ſtyle, ſmooth, three-celled.

SEEDS in threes or fours, oblong, compreſſed a little.

OBS. *It has the infloreſcence flower and habit of Thea, but the fruit is of a different kind.*

ESSENTIAL CHARACTER.

Cal. five-leaved. *Cor.* five-petalled. *Style* trifid. *Berry* juiceleſs, three-celled, many-ſeeded.

SPECIES.

1. Eroteum thæoides.
   Swartz prodr. 85.
   Leaves ovate-lanceolate ſerrate-toothed, flowers axillary ſolitary.
2. Eroteum undulatum.
   Swartz prodr. 85. *Vahl ſymb.* 2. 61.
   Leaves elliptic-lanceolate acuminate ſerrate, flowers crowded axillary.

DESCRIPTIONS, &c.

1. Native of Jamaica[h].

2. Branches flexuoſe at top, hairy-tomentoſe, eſpecially towards the tip. Leaves alternate, two or three inches long, coriaceous, broad lanceolate, acute at both ends, ſmooth, paler underneath, thicker at the edge; the younger ones nerved and hairy underneath. Petioles very ſhort. Peduncles four or

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[m] L'Heritier.
[n] Ibid.
[o] Hort. kew.
[p] Ibid.
[q] Cavanilles.
[r] L'Heritier.
[s] Ibid.
[t] Ibid.
[u] Ibid. and Cavan.
[x] Hort. kew.
[y] Ibid.
[z] L'Heritier.

[a] Linn.
[b] L'Heritier.
[c] Hort. kew.
[d] L'Herit.
[e] Wood. Mſs.
[f] Cavanilles.
[g] Curtis.
[h] Swartz.

five, but ſometimes ſolitary, one-flowered, the ſame length with the petioles. Calycine leaflets ovate, very finely ciliate, obtuſe.

It varies with ſmooth branches[l].

Native of Jamaica, St. Chriſtopher's, Montſerrat, Guadaloupe, *&c.*[k]

Eruca. See *Arabis, Braſſica, Bunias, Cheiranthus, Eryſimum, Sinapis, Siſymbrium.*

Erucago. See *Bunias* and *Reſeda.*

Erucastrum. See *Braſſica.*]

ERVUM, (*of Pliny*; *from the greek* Οροϐος, *changing* β *into* υ, *as from* βια, *vis, from* βιω, *vivo, from* βοσκω *veſcor.*)

Lin. gen. n. 874. *Reich.* 948. *Schreb.* 1188. *Gærtn. t.* 151. *Tourn.* 221. *Juſſ.* 360. Lens. *Tourn.* 210.

Claſſ. 17. 4. Diadelphia Decandria.

Nat. order of *Papilionaceæ* or *Leguminoſæ.*

GENERIC CHARACTER.

Cal. *Perianth* five-parted, length of the corolla: *diviſions* linear, acuminate, nearly equal.

Cor. Papilionaceous.

Standard flat, ſlightly reflex, roundiſh, larger.

Wings obtuſe, ſhorter by half than the ſtandard.

Keel ſhorter than the wings, acuminate.

Stam. *Filaments* diadelphous (ſimple and nine-cleft) riſing. *Anthers* ſimple.

Pist. *Germ* oblong. *Style* ſimple, riſing. *Stigma* obtuſe, beardleſs.

Per. *Legume* oblong, obtuſe, columnar, knotty with the protuberant ſeeds.

Seeds four, uſually roundiſh.

Obs. *This genus differs from Vicia in the ſtigma alone.*

Ervum, Tourn. *has an oblong toruloſe legume with globular ſeeds.*—Lens, T. *has an ovate compreſſed legume with orbiculate ſeeds convex on both ſides. In* Vicia, T. *it is oblong with roundiſh ſeeds.* Juſſ. E. tetraſpermum *has the ſtigma bearded, when viewed through a microſcope. The calyx has five unequal teeth.* With.

ESSENTIAL CHARACTER.

Calyx five-parted, the length of the corolla.

SPECIES.

1. Ervum Lens. *Flat-ſeeded Tare* or *Common Lentil.*

Lin. ſpec. 1039. *Reich.* 3. 476. *mat. med.* 172. *hort. upſ.* 224. *cliff.* 370. (Cicer.) *Scop. carn. n.* 900. *Leers herb. n.* 587. *Krock. ſileſ. n.* 1178.

Lens. *Fuchſ.* 899. *Dod. pempt.* 526. *Hall. helv. n.* 421. *Riv. tetr. t.* 35. *Bauh. hiſt.* 2. 317. *Raii hiſt.* 904.

L. minor. *Ger.* 1049. 2. *emac.* 1224. 2.

L. major vel minor. *Park. theat.* 1068. *Mor. hiſt.* 2. *ſ.* 2. *t.* 3. *f.* 9, 10.

L. vulgaris. *Bauh. pin.* 346.

β. L. major. *Bauh. hiſt.* 2. 317. *Bauh. pin.* 346. *Ger.* 1049. 1. *emac.* 1224. 1. *Raii hiſt.* 904. *Riv. tetr. t.* 35.

About two flowers on a peduncle, ſeeds compreſſed convex.

2. Ervum tetraſpermum. *Smooth Tare.*

Lin. ſpec. 1039. *Reich.* 3. 476. *fl. ſuec. n.* 655. *Hudſ. angl.* 320. *With.* 780. *Curtis lond.* 1. 55. *abr. t.* 15. *Lightf.* 397. *Relb. cant. n.* 528. *Scop. carn. n.* 902. *Pollich pal. n.* 689. *Neck. gallob.* 308. *Leers herborn. n.* 588. *Krock. ſileſ. n.* 1179. *Fl. dan. t.* 95.

Vicia gemella. *Crantz. auſtr.* 389. *Hall. helv. n.* 923.

V. ſegetum ſingularibus ſiliquis glabris. *Bauh. pin.* 345.

V. minor. ſeg., cum ſil. paucis glabris. *Mor. hiſt.* 2. 64. *ſ.* 2. *t.* 4. *f.* 16.

V. ſ. Craccæ minimæ ſpecies cum ſiliquis glabris. *Bauh. hiſt.* 2. 315. 2. *Raii hiſt.* 902.

Cracca minor cum ſil. gemellis. *Riv. tetr.* 53.

C. min. ſil. ſingularibus, floſculis cæruleſcentibus. *Hoffm. fl. Altorff. Raii ſyn.* 322.

About two flowers on a peduncle, ſeeds globular four in a legume.

3. Ervum hirſutum. *Hairy Tare.*

Lin. ſpec. 1039. *Reich.* 3. 477. *fl. ſucc. n.* 655. *Hudſ. angl.* 321. *With.* 781. *Curt. lond.* 1. 54. *abr. t.* 16. *Lightf.* 398. *Relb. cant. n.* 529. *Crantz. auſtr.* 403. *Scop. carn. n.* 901. *Pollich pal. n.* 690. *Leers herborn. n.* 589. *Fl. dan. t.* 639. *Krock. ſileſ n.* 1180. *Neck. gallob.* 308. *Lin. hort. cliff.* 370. (Cicer). *Hall. helv. n.* 422. (Vicia).

Vicia ſegetum cum ſiliquis plurimis hirſutis. *Bauh. pin.* 345. *Raii hiſt.* 902. *Mor. f.* 15.

V. parva ſ. Cracca minor cum multis ſil. hirſ. *Bauh. hiſt.* 2. 315. 1.

V. ſylveſtris ſ. Cr. minima. *Ger. emac.* 1228. 5?

Cracca minor. *Tabern. ic.* 507. *Riv. tetr. t.* 53. *Raii ſyn.* 322.

Arachus ſ. Cr. min. *Park. theat.* 1070.

Peduncles many-flowered, ſeeds globular two in a legume.

[4. Ervum ſolonienſe. *Spring Tare.*

Lin. ſpec. 1040. *Reich.* 3. 477. *amœn.* 4. 327.

Vicia pratenſis verna ſ. præcox Solonienſis, ſem. hexaedro. *Mor. blæs.* 321. *hiſt.* 2. 63. *t.* 4. *f.* 14. *Raii hiſt.* 902.

V. minima præcox pariſienſium. *Tourn. inſt.* 397. *fl. par.*

About two flowers on a peduncle awned, petioles acuminate, leaflets obtuſe.]

5. Ervum monanthos. *One-flowered Tare* or *Lentil.*

Lin. ſpec. 1040. *Reich.* 3. 478. *hort. upſ.* 219. (Vicia). *Leers herborn. n.* 950. *Herm. lugdb.* 360. (Lens monanthos).

Peduncles one-flowered.

6. Ervum Ervilia. *Officinal Tare.*

Lin. ſpec. 1040. *Reich.* 3. 478. *hort. upſ.* 224. *mat. med.* 173. *hort. cliff.* 370. *Hall. helv. n.* 420. *Sauv. monſp.* 237. *Leers herb. n.* 591. *Riv. tetr. t.* 6. *Blackw. t.* 208. *f.* 3. *Gærtn. fruct.* 2. 328.

Orobus ſiliquis articulatis, ſemine majore. *Bauh. pin.* 346.

Lens minor. *Camer. epit.* 211.

O. ſ. Ervum multis. *Bauh. hiſt.* 2. 321. *Raii hiſt.* 915.

O. receptus herbar. *Ger.* 1051. *emac.* 1225. *Mor. t.* 6. *f.* 1.

O. vulgaris herbariorum. *Park. theat.*

Ervum. *Camer. epit.* 215. *Rivin. tetr. t.* 61.

Germs naked and plaited, leaves unequally pinnate.

DESCRIPTIONS, &c.

1. The Lentil is an annual plant, and the leaſt of the pulſe kind which is cultivated. It riſes with weak ſtalks a foot and half high, having pinnate leaves at each joint, compoſed of ſeveral pairs of narrow leaflets, terminated by a tendril, which ſupports it by faſtening about ſome other plant. The flowers come out on ſhort peduncles from the ſides of the branches; they are ſmall, of a pale purple colour, and three or four together. Legumes ſhort and flat, containing two or three flat, round ſeeds, a little convex in the middle. The flowers appear in may, and the ſeeds ripen in july.

[Scopoli thus deſcribes it in its wild ſtate.—Stems many, ſimple, angular, a foot high. The upper leaves only terminate in a tendril: leaflets alternate, lanceolate, emarginate, protruding a ſhort dagger-point from the notch, the lower ſurface villoſe. Stipules entire, narrow. Peduncles villoſe, ſuſtaining from one to four flowers. Calyx villoſe. Standard of the corolla not emarginate. Sheath (or lower part of the filament) four-valved; the lateral valves have four ſtamens on each, the upper and lower one only. Germ peduncled. Legume has from one to three ſeeds.—Spontaneous in the corn fields of France and Germany, the paſtures of Carniola, and the vineyards of the Valais.]

The common Lentil is cultivated either as fodder for cattle, or for the ſeeds which are uſed in ſoups. Theſe are commonly eaten by the poorer ſort in ſome iſlands of the Archipelago, and other warm countries,

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[l] Vahl.

[k] Swartz.

countries. The contempt however in which they are held is apparent from the proverbial expreſſions, *Dives factus jam deſiit gaudere lente*; and *mira de lente*.

[The cultivation of this pulſe does not ſeem to have been of very long ſtanding in England: for Gerarde ſays, ‘ theſe pulſes (great and little Lentils) do grow in my garden (1596); and it is reported unto me by thoſe of good credit, that about Watford in Middleſex (Hertfordſhire) and other places of England, the huſbandmen do ſow them for their cattle, even as others do Tares.’—And Parkinſon (in 1640) only ſays, that ‘ they are ſown in ſome countries in our land, eſpecially the ſmaller ſort—but the greater doth very hardly come to maturity with us, if the ſeaſon be not kindly and dry.’

2. Root annual. Stems in open places ſlender, weak and much branched; but among corn ſupporting themſelves by tendrils to a foot or more in height: two-edged and inclined to four-cornered. Stipules in pairs; the lower ſemiſagittate, the upper entire, or nearly ſo. Leaves pinnate; leaflets about five pairs (three to five *C.*), linear-lanceolate, approaching to linear; ſometimes lanceolate, and tapering to a point: moſtly inclined to alternate, terminated by a tendril, which is frequently ſimple. Flowers on ſlender capillary peduncles, as often ſingle as in pairs: calyx ſomewhat hairy; the lower ſegments longeſt. Standard of the corolla ſlightly emarginate, the border ſtreaked with purple; wings white and converging; keel obtuſe. Corolla (according to Linneus) violet, often blood-coloured. Legumes perfectly ſmoooth, inclining to cylindric, and containing four ſeeds, nearly globular, browniſh mottled with black. According to Scopoli there are ſometimes five ſeeds in a legume: and Mr. Woodward has remarked a variety near Cambridge, in which the legumes contain five, ſix or ſeven ſeeds, very rarely four. The ſtem was low and extremely branched. Theſe differences could not proceed from luxuriance of ſoil, as the ſpot where it grew was a remarkably dry gravel.

This ſpecies is eaſily diſtinguiſhed from the next, for in that the pods are hairy and contain only two ſeeds; in this they are ſmooth and contain four; in that the flowers grow in a kind of cluſter, in this ſeldom more than two grow together. It is exceedingly fertile, one plant, caſually pulled up, having two hundred and twenty pods on it. It is found in moſt corn-fields, clinging to the corn, and if the ſeaſon favours its growth, ſometimes quite overcoming it.

3. Annual. Stems weak, much branched, climbing, quadrangular, ſtreaked, from one to two feet high. Lower ſtipules with two, three, or four awl-ſhaped teeth; the upper ones awl-ſhaped and entire. Leaflets moſtly linear, ſometimes lanceolate, eight to twelve pairs, ſomewhat alternate, terminated by a branched tendril. Peduncles axillary, ſhorter and not ſo ſlender as in the foregoing, bearing two, three or four flowers on very ſhort hairy pedicels; when two, ſeparate: if three, two together; if four, in pairs*. Calyx hairy, ſegments longer and more acute than in the foregoing. Legumes hairy, always containing two ſeeds.

Eaſily diſtinguiſhed from the foregoing; the leaves not being pointed as in that, but truncate; the ſtipules divided into many more ſegments; the flowers, and conſequently the legumes growing in a kind of cluſter, being rough, and containing two ſeeds. It grows among corn, and is more deſtructive to it, being ſtronger and more prolific. In wet ſeaſons whole crops are overpowered by this plant. All ſorts of cattle eat it. Theſe two are called *Tine-Tare*, that with *ſmooth pods*, and this with *rough pods*.

They are common in the eaſtern countries, the preceding in Japan, and this in Cochinchina.

4. Flower ſmall, reddiſh. Legumes ſlender, an inch in length, with three or four minute hexaedral ſeeds in each. It is diſtinguiſhed by its earlineſs, the tenuity of its parts, and the ſhape of its ſeeds. It appears at the cloſe of winter in neglected paſtures in France. Linneus thinks that it is allied to *Lathyrus angulatus*.

Cultivated in Chelſea garden in 1739. It flowers in april and may.

5. Larger than Lentil, climbing by means of bifid or trifid tendrils. Petioles horizontal. Leaflets ſixteen to eighteen, linear retuſe with a point. Stipules two, alternately larger, different in form: one very ſhort, lanceolate, the other oppoſite, five times larger, petioled pedate-multifid; the ſegments briſtle-form, very long, patulous. Peduncle one-flowered. Calyx three times ſhorter than the corolla, with the toothlets nearly equal. Standard compreſſed, whitiſh with violet veins. Legume large, ſomewhat nodding, containing two or three ſeeds, the ſize of Peas, compreſſed, with an obtuſe margin. It is annual; and according to Linneus, the leaflets convolute.

Native of Ruſſia and the county of Nice. Near Herborn in Germany among Lentils. It flowers from may to july. Cultivated in 1731, by Mr. Miller.]

6. This is an annual plant, riſing with angular weak ſtalks a foot and half high, having at each joint one pinnate leaf, compoſed of fourteen or fifteen pairs of leaflets, very like thoſe of the Vetch, but narrower. The flowers come out from the ſides of the ſtalk, on peduncles an inch long, each ſuſtaining two pale-coloured flowers, which are ſucceeded by ſhort pods a little compreſſed, each containing three or four round ſeeds; the pods ſwell at the place where each ſeed is lodged. [Erect, not climbing. Stipules ovate, toothed. Leaflets eighteen to twenty-four, linear-oblong, retuſe with a point. Petiole drawn out at the end into a dagger-point, inſtead of a tendril. Peduncles two or three-flowered. Calyx only half the length of the corolla, with toothlets nearly equal, the two upper ones decuſſated. Standard ſlightly emarginate with a point. Germ linear, ſtraight, waved and plaited after flowering time. Legumes pendulous, jointed and knotted, containing three or four ſeeds, which are ſomewhat angular.

Native of France, Italy, and the Levant; alſo found in Germany and Switzerland, among Lentils. It flowers in june. Ray ſays it is common about Montpellier and Geneva.—Cultivated by Gerarde in 1597.]

The ſeeds ground to flour are ſometimes uſed in medicine abroad; and the green herb is employed for feeding cattle in ſome countries, but the plant is not worth cultivating for that purpoſe in England.

PROPAGATION AND CULTURE.

1. The ſeeds of Lentils are commonly ſown in march, where the land is dry, but in moiſt ground april is the beſt time. The uſual quantity of ſeed allowed to an acre is from a buſhel and half to two buſhels. If theſe are ſown in drills in the ſame manner as Peas, they will ſucceed better than when they are ſown broad-caſt: the drills ſhould be a foot and half aſunder, to allow room for the hoe to clean the ground between them; for if weeds be permitted to grow, they will overtop and ſtarve the Lentils. The ſeeds will ripen in july, when the plants ſhould be cut and dried, and the ſeeds afterwards threſhed out for uſe.

There is another ſort (or rather variety) which is cultivated by the name of French Lentil. It is the Lens major of Caſpar Bauhin, and is much better worth cultivating than the other. This pulſe is frequently called *Tills* in ſome parts of England.

2, 3. Theſe are ſmall annual Tares which grow wild among Wheat and Rie in many parts of England, and are not admitted into gardens. They may be eaſily deſtroyed in the fields if they are cut up when they begin to flower.

4, 5, 6. May be cultivated in the ſame manner as common Lentils.

ERVUM ORIENTALE. See *Sophora*.

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* Three to five, Withering; three to eight Curtis; four to ſix, Leers.

F.

FAba. See *Vicia.*
Faba dulcis. See *Caſſia.*
Faba marina. See *Mimoſa.*]
Fabago. See *Zygophyllum.*
[Fabricia. See *Melaleuca.*
Fagago. See *Zygophyllum.*]

FAGARA. (*From* φαγω, *to eat.*)
Lin. gen. n. 150. *Reich.* 157. *Schreb.* 196. *Brown. t.* 5. *f.* 1. *Gærtn. t.* 68. *Juſſ.* 374.
Claſſ. 4. 1. Tetrandria Monogynia.
Nat. order of *Dumoſæ.*—*Terebintaceæ,* Juſſieu.

GENERIC CHARACTER.

Cal. *Perianth* four-cleft, very ſmall: *leaflets* concave, permanent.
Cor. *Petals* four, oblongiſh, concave, ſpreading.
Stam. *Filaments* four, (three to eight) longer than the corolla. *Anthers* ovate.
Pist. *Germ* ovate. *Style* filiform, length of the corolla. *Stigma* two-lobed, obtuſiſh, (four-cleft in F. Euodia.)
Per. *Capſule* globular, one-celled, (or two-celled, *G.*) two-valved.
Seed ſingle, round, bright.

ESSENTIAL CHARACTER.

Cal. four-cleft. *Cor.* four-petalled. *Capſ.* two-valved, with one ſeed.

SPECIES.

[1. Fagara Euodia. *Sweet-ſcented Fagara.*
Lin. ſyſt. 160. *ſuppl.* 125. *Forſt. fl. auſtr. n.* 54.
Euodia hortenſis. *Forſt. gen. n.* 7.
Leaves ſimple lanceolate elongated oppoſite, racemes branched axillary ſolitary.

2. Fagara trifoliata. *Three-leaved Fagara.*
Swartz prodr. 33.
Leaves ternate, leaflets obovate ſubemarginate entire ſhining dotted underneath.]

3. Fagara Pterota. *Lentiſcus-leaved Fagara,* or *Baſtard Ironwood.*
Lin. ſpec. 172. *ſyſt.* 160. *Reich.* 1. 333. *amœn.* 5. 393. *mat. med.* 52. *Lin. ſpec. ed.* 1. 389. (Schinus). *Brown. jam.* 146. *t.* 5. *f.* 1. (Pterota). *Sloan. jam.* 2. 25. *t.* 162. *f.* 1. *Raii dendr.* 86. *n.* 30. (Lauro affinis).
Leaflets emarginate.

[4. Fagara Piperita. *Aſh-leaved Fagara.*
Lin. ſpec. 172. *Reich.* 333. *Gærtn. fruct.* 334. *Thunb. jap.* 64. *Kæmpf. amœn.* 5. 892. *f.* 893. *Lour. cochinch.* 80.
Leaflets crenate.

5. Fagara horrida.
Thunb. in Linn. tranſ. 2. 329. *fl. jap.* 350. *n.* 3.
Leaves pinnate, pinnas ovate crenate, ſpines of the branches armed with ſpinules.]

6. Fagara Tragodes. *Prickly-leaved Fagara.*
Lin. ſpec. 172. *Reich.* 334. *Jacqu. amer.* 21. *t.* 14. *pict.* 16. *t.* 19.
Schinus tragodes. *Lin. ſpec. ed.* 1. 369.—Schinoides. *hort. cliff.* 489.
Rhus obſoniorum, &c. *Pluk. alm. t.* 107. *f.* 4?
Joints of the pinnas prickly underneath.

[7. Fagara emarginata.
Swartz prodr. 33. *Sloan. jam.* 2. 24. *n.* 13. *t.* 168. *f.* 4. (Lauro affinis). *Raii dendr.* 88.
Leaves pinnate, leaflets ovate emarginate veined, racemes terminating compound, flowers three-ſtamened.

8. Fagara ſpinoſa.
Swartz prodr. 33.
Leaves pinnate ſeſſile ovate acuminate, both they and the branches ſpiny underneath, flowers three-ſtamened.

9. Fagara acuminata.
Swartz prodr. 33.
Leaves pinnate, leaflets entire elliptic acuminate ſhining coriaceous, flowers in cymes three-ſtamened.

10. Fagara octandra.
Lin. ſyſt. 160. *mant.* 40. *Reich.* 334. *Plenck, ic. t.* 65.
Elaphrium tomentoſum. *Jacqu. amer.* 105. *t.* 71. *f.* 1—3.
Leaflets tomentoſe.

DESCRIPTIONS, *&c.*

Theſe are ſmall trees or rather ſhrubs, ſome prickly, others not. The leaves are alternate, ſimple or ternate, more frequently unequally pinnate with the common petiole edged; they are thin and have pellucid dots. The flowers are faſcicled or ſubracemed from the axils. The fruit is one-capſuled in the Linnean ſpecies; in the others two-capſuled, but in their habit very like the former; in *F. pentandra* of Aublet from three to five-capſuled, five-petalled, with three bractes under a five-toothed calyx; in *F. Euodia* four-capſuled, with all the parts of fructification in fours; in *F. octandra* one-capſuled, two-valved, containing one ſeed; this has four petals, eight ſtamens, one ſtyle, and a ſimple ſtigma. It abounds in a balſam, as in Burſera, eſpecially in the fruit. Doubtful whether this be of the ſame genus, though the leaves be conformable[a].

1. Forſter made a new genus of this ſpecies, under the title of *Euodia*, from its fine ſmell. But it has no diſtinct marks, except that the ſtigma is four-cleft, whereas in Fagara it is two-cleft; and that it has four capſules, whereas Fagara has but one[b].

Native of the Friendly Iſles, and the New Hebrides[c].

2. This is a native of the iſland of Dominique[d].

3. A ſhrub with wrinkled branches. Leaves alternate, pinnate, with three pairs of leaflets, and the common petiole margined and jointed. Leaflets obovate, quite entire, emarginate, ſmooth. Spikes axillary, ſeſſile, in pairs[e].

According to Browne, it riſes by a branched and ſomewhat prickly ſtalk frequently to the height of eight or ten feet; the wood is very hard, and the branches are abundantly furniſhed with little leaves and ſmall white flowers that riſe on double ſpikes from the axils of the ribs. This ſhrub is very common in the lower lands of Jamaica.] Dr. Houſtoun found it at Campeachy.

Mr. Miller ſays it riſes upwards of twenty feet high, and that from the dried ſpecimens which he received he is convinced there are ſome of the trees which bear male flowers.

[It has a goatiſh ſmell[f]. Mr. Miller cultivated it in 1768. It flowers in auguſt and ſeptember[g].

4. Stem ſhrubby, ſcarcely a fathom in height. Branches round, prickly, purple. Prickles ſcattered, horizontal. Leaves many, from the ends of the twigs, unequally pinnate, with about ſix pairs of leaflets; theſe are alternate and oppoſite, ſubſeſſile, ovate, emarginate, ſmooth, half an inch in length. Flowers among the leaves, terminating, panicled, ſmall, white. Capſule wrinkled, one-celled, containing one ſmooth, black ſeed[h].

According to Loureiro, the leaves have only two or three pairs of leaflets, which are acuminate, ſhining, odoriferous, and ſpiny at the back; the flowers have red mixed with the white, and are in racemes on long peduncles.

Gærtner deſcribes the capſule as ſmall, almoſt globular, ſimple or double, coriaceous, ſcabrous on the outſide with callous dots; having within a folded elaſtic plate the conſiſtence of paper, either one or two-celled, and two-valved. It has one globular ſeed in each cell fixed to the gaping ſuture in the middle; ſlightly acuminate and compreſſed at top, and having a ſmall navel on the inſide in the middle, almoſt of a bony conſiſtence. In the Japoneſe fruit the capſules are uſually ſimple, but in thoſe from China they are more frequently double.

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[a] Juſſieu. [b] Linn. ſuppl. [c] Forſter. [d] Swartz.
[e] Linn. amoen. [f] Linn. ſyſt. [g] Hort. kew.
[h] Thunberg.

Loureiro ſays that the capſule is four-lobed, and four-celled, and that the ſeeds are peduncled, protruded, black and ſhining.

The bark, leaves and fruit, being aromatic, are frequently uſed in ſoups, inſtead of ſpice. The bruiſed leaves made into a cataplaſm with meal of rice are laid upon the parts afflicted with rheumatiſm, and on buboes[i].

The root, which is woody, with a corky, yellow bark, and a ſharp ſubaromatic flavour, is warm, diaphoretic and emmenagogue, and is much eſteemed in intermittent fever, rheumatiſm, *&c.*[k]

Native of China, Cochinchina, and Japan. Introduced in 1773, by Sir James Cockburn, Bart. It flowers in ſeptember[l].

5. This is a ſmall upright tree, ſmooth in all its parts. Branches alternate, ſtriated, flexuoſe, upright, from aſh-coloured purpliſh, elongated, almoſt ſimple. Spines ſcattered, rigid, purpliſh, ſpreading, an inch long, armed with alternate, ſpreading, ſmaller ſpinules. Leaves from the buds ſeveral, pinnate: pinnas oppoſite, ſubſeſſile, in many pairs (about ſeven), obtuſe, very finely notched.

Native of Japan, where it is called *Sai katſi*[m].

6. A ſhrub branching, almoſt erect, five feet in height. Prickles in pairs, ſubulate, recurved, ſtrong, ſubaxillary, brown, ſhining; there is one ſimilar, but ſmaller, on the back of each joint of the leaves. Theſe are alternate, ſeſſile, pinnate-jointed: leaflets oblong, attenuated at the baſe, obtuſe, quite entire, ſhining, ſeſſile: joints uſually ſix, in every reſpect ſimilar to the leaflets. Flowers ſmall, axillary, aggregate.

Native of Domingo; flowering in february[n].

7. The trunk of this tree is the ſize of the human leg, ſometimes beſet with many ſhort prickles. It riſes twenty feet high, and its branches are inclined towards the ground. The wood is white, ſolid and odoriferous, with a pretty large pith. Leaves at the ends of the branches, conſiſting of two, three or more pairs of leaflets, without any odd one, oppoſite, at half an inch diſtance, ſmooth, dark green, an inch long, and three quarters of an inch broad in the middle. Flowers white, ſmall, like thoſe of Elder, three-petalled. Fruit round, the ſize of black Pepper. Seed black, ſmelling ſomewhat like Bay berries. The ſmoke of the wood in burning is odoriferous, and probably was the fine ſcent which Columbus found near the ſouth ſhore of Cuba, on his diſcovery of that iſland.

Native of Jamaica and other iſlands of the Weſt Indies[o].

8, 9. Natives of Jamaica[p].

10. An inelegant tree, frequently more than twenty feet in height, abounding in a balſamic glutinous juice, much like that of Burſeria in its qualities. The wood is very white and light. The natives of ſome of the Weſt India iſlands make ſaddles with it of one piece, they have no pad, and only a ſheepſkin thrown over them, when they ride. Branches thick, few, long, irregular. Leaves pinnate, tomentoſe on both ſides, winged, deciduous, coming out from the ends of the ſmaller branches with the flowers, or a little after them: leaflets on each ſide four, beſides the odd one, ovate, obtuſe, crenate, veined, ſcarcely an inch in length. Racemes many, ſimple, an inch or an inch and half long. Flowers very ſmall, with white calyxes, and yellowiſh corollas: moſt of them have a very ſmall germ immerſed in the receptacle, with a double obtuſe ſtigma, and no ſtyle; theſe I have obſerved to be abortive. Fruits green, the ſize of Peas; when broken, the valves diſtil drops of balſam. Seed blackiſh in the naked, whitiſh in the covered part; but the pulp, with which it is cloſely ſurrounded, is ſcarlet.

Native of Curaçao and the adjacent iſlands, flowering in july and auguſt.—Jacquin, from whom the above is taken, named it Elaphrium, from the lightneſs of the wood (ελαφρια).

PROPAGATION AND CULTURE.

Theſe are tender plants, and muſt be kept conſtantly in the bark ſtove. They may be increaſed by ſeeds, and alſo by cuttings properly managed.

[FAGARA. See *Zanthoxylum.*)

FAGONIA. (*So named by Tournefort, in honour of Monſ. Fagon, Archiater to Louis XIV. and a great patron of botany.*)

Lin. gen. n. 531. *Reich.* 579. *Schreb.* 731. *Tournef. t.* 141. *Juſſ.* 296. *Gærtn. t.* 113.

Claſſ. 10. 1. Decandria Monogynia.

Nat. order of *Gruinales.—Rutaceæ,* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved: *leaflets* lanceolate, erect, patulous, very ſmall, deciduous.

COR. *Petals* five, heart-ſhaped, ſpreading: *claws* long, ſlender, inſerted into the calyx.

STAM. *Filaments* ten, ſubulate, erect, longer than the calyx. *Anthers* roundiſh.

PIST. *Germ* five-cornered, ſuperior. *Style* awl-ſhaped. *Stigma* ſimple.

PER. *Capſule* round-acuminate, (five-cornered, *G.*) five-celled, five-lobed, ten-valved, the cells compreſſed.

SEEDS ſolitary, roundiſh, (ovate, *G.*)

ESSENTIAL CHARACTER.

Cal. five-leaved. *Pet.* five, cordate. *Capſ.* five-celled, ten-valved, with one ſeed in each cell.

SPECIES.

1. Fagonia cretica. *Cretan Fagonia.*

Lin. ſpec. 553. *ſyſt.* 401. *Reich.* 2. 276. *mant.* 380. *Gærtn.* 2. 153. *Curtis magaz. t.* 241.

F. erecta. *Mill. dict. n.* 1.

Trifolium ſpinoſum creticum. *Bauh. pin.* 330. *prodr.* 142. *Cluſ. hiſt.* 2. 242. *Ger. emac.* 1217. *f.* 3. *Park. theat.* 1113. 3. *Raii hiſt.* 1037.— aculeatum cret. *Bauh. hiſt.* 2. 388. *f.* 389. 1.

Thorny; leaflets lanceolate, flat, even.

2. Fagonia arabica. *Arabian Fagonia.*

Lin. ſpec. 553. *Reich.* 2. 277. *Shaw. afr.* 229. *Forſk. ægypt.* 88.

Thorny; leaflets linear, convex.

3. Fagonia hiſpanica. *Spaniſh Fagonia,* or *F. without ſpines.*

Lin. ſpec. 553. *Reich.* 2. 276. *Tournef. inſt.* 265.

Without thorns.

DESCRIPTIONS, *&c.*

[Theſe are herbaceous plants with a woody baſe. The leaves are either ſimple or ternate; the ſtipules in the two firſt ſpecies become thorns. The flowers are ſolitary and axillary[a].]

1. This is a low plant, ſpreading its branches cloſe to the ground, a foot or more every way.

[Stem four-parted, ſpreading, a foot high, channelled on the upper ſide, knotted and knee-jointed, (five-cornered, dichotomous, *ſyſt.*) Leaves oppoſite, petioled, ternate. Petioles ſubmarginate, the length of the leaflets; which are equal, ſeſſile, linear-lanceolate, mucronate, quite entire, (ſomewhat fleſhy, *ſyſt.*) Stipules four, awl-ſhaped, ſpreading, becoming ſpines, ſhort, bowed back. Peduncles lateral, axillary, ſolitary, one-flowered, alternate, erect, the length of the petiole, from the ſame axil with the branchlet. Petals violet-coloured or blue, ſpreading between the ſinuſes of the calyx with the very claws ſtanding out above it. Capſule nodding, ovate-pyramidal, with the five corners compreſſed and ſubciliate[b]; the cells compreſſed boat-ſhaped, opening at the keel. Receptacle columnar, five-cornered-ſubulate, placed in the axis of the fruit; the valves and ſetaceous umbilical chords are inſerted into this, a little above the baſe. Seeds ovate, narrowing upwards; at bottom, where the umbilical chord is inſerted, ſlightly emarginate; ſo compreſſed as to be almoſt like a leaf, ferruginous-brown, with very minute hollow dots[c].

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[i] Thunberg.
[k] Loureiro.
[l] Hort. kew.
[m] Thunberg.
[n] Jacquin.
[o] Sloane.
[p] Swartz.

[a] Juſſieu.
[b] Linn. mant.
[c] Gærtner.

It has the ſtructure of the herb as in *Tribulus*, the flower of *Malpighia*, and is allied to *Zygophyllum*.]

Native of the iſland of Candia. It flowers in july and auguſt, but unleſs the ſeaſon proves warm, the ſeeds do not ripen in England.

[Cultivated in 1739, by Mr. Miller[d].]

2. This is a low plant with a ſhrubby ſtalk, from which come out ſeveral weak branches armed with long thorns; the leaves are thick, narrow, and convex on their under ſide; the flowers come out as in the firſt ſort. [Petals not inſerted into the calyx, nor cordate, but inſerted into the receptacle; violet-coloured, oblong, emarginate. Leaflets linear, acute, flat, thickiſh, ſomewhat villoſe. Spines verticilled, in fours, longer than the leaves. Filaments not appendicled at the baſe[e].] It was diſcovered by Dr. Shaw in Arabia.

3. This differs from the firſt in being ſmooth, the branches having no thorns; it will alſo live two years, whereas that is annual. It is a native of Spain.

PROPAGATION AND CULTURE.

Sow the ſeeds upon a warm border of freſh light earth in autumn, where they are deſigned to remain, for they do not bear tranſplanting well; in froſty weather ſhelter the plants with mats, or ſome other covering; thin them out to the diſtance of ten inches or a foot, and keep them clean from weeds. Or rather ſow them in pots, and place them under a frame in winter; the following ſpring ſhake them out of the pots, and plant them in a warm border: thus they will flower early, and ripe ſeeds may be obtained.

The ſecond and third ſorts ſeldom flower the firſt year: theſe, therefore, muſt be ſheltered like the firſt for two winters.

FAGOPYRUM. See *Polygonum*.

FAGOTRITICO SIMILIS & FAGOTRITICUM. See *Polygonum*.

[FAGRÆA. (*So named by Chevalier Thunberg, in honour of Jonas Theodor Fagræus, M. D.*)

Lin. gen. Schreb. n. 276. *Thunb. nov. gen.* 34. *nov. act. holm. Juſſ.* 150.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Contortæ.—Apocineæ.* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, bell-ſhaped, five-parted: *diviſions* obtuſe, incumbent, membranaceous at the end.

COR. one-petalled, funnel-ſhaped. *Tube* round, gradually widening to the top, long. *Border* twiſted, five-parted: *diviſions* oblong, oblique, obtuſe, entire, patulous.

STAM. *Filaments* five, filiform, equal, inſerted into the tube, ſhorter than the corolla: *Anthers* ovate, twin, vertical, convex outwards, four-furrowed, flat on the inner ſide, eaſily bipartile.

PIST. *Germ* ſuperior. *Style* filiform, the length of the corolla. *Stigma* peltate, orbiculate, flat.

PER. *Berry* ovate, fleſhy, covered with an epidermis, two-celled.

SEEDS orbiculate, ſmooth.

ESSENTIAL CHARACTER.

Cal. bell-ſhaped. *Cor.* funnel-ſhaped. *Berry* two-celled, fleſhy. *Seeds* globular. *Stigma* peltate.

SPECIES.

1. Fagræa zeylanica.

Lin. ſyſt. 198. *Thunb. nov. gen.* 35. *act. holm.* 1782. *p.* 132, *t.* 4.

DESCRIPTION, &c.

Stem becoming ſhrubby, erect, ſomewhat four-cornered, a finger in thickneſs, and two feet high. Leaves faſtigiately oppoſite, petioled, frequent, obovate-oblong, very obtuſe, entire, coriaceous, a hand broad, and a ſpan long. Petioles ſemicolumnar, an inch in length. Flowers terminating, ſubumbelled, peduncled. The umbel has about three flowers. Peduncles one-flowered, bracted, half an inch in length. Bractes oppoſite, ovate, obtuſe.—Native of Ceylon, where it flowers in december and january[f].]

FAGUS. (*From φαγω to eat. The fruit of this tree having been the common food of mankind in the early ages.*)

Lin. gen. n. 1072. *Reich.* 1170. *Schreb.* 1448. *Gærtn. t.* 37. *Juſſ.* 409. *Tournef.* 351. Caſtanea. *Tourn.* 352. *Mill. dict. & fig.* 84.

Claſſ. 21. 8. Monoecia Polyandria.

Nat. order of *Amentaceæ.—Juliferæ.* Raii & Halleri.

GENERIC CHARACTER.

* *Male flowers* fixed to a common amentaceous receptacle.

CAL. *Perianth* one-leafed, bell-ſhaped, five-cleft. (four, five or ſix-cleft. *Haller.* ſubſexfid. *G.*)

COR. none.

STAM. *Filaments* many, the length of the calyx, ſetaceous. *Anthers* oblong.

* *Female flowers* in a bud of the ſame plant.

CAL. *Perianth* one-leafed, four-toothed, erect, acute.

COR. none.

PIST. *Germ* covered with the calyx. *Styles* three, ſubulate (one trifid. *G.*) *Stigmas* ſimple, reflex.

PER. *Capſule* (which was the calyx) roundiſh, very large, covered with ſoft ſpines, one-celled, two to four-valved.

SEEDS. *Nuts* one or two, ovate, three-cornered, three-valved, acuminate.

OBS. *In the* Beech (ſpec. 3.) *the male flowers are in a ball.* (*Stamens eight. H.*) *In Cheſtnut* (*one, two*), *they are in a cylinder.* (*Stamens five to eighteen or twenty. Styles four to ſix or ſeven.*)

ESSENTIAL CHARACTER.

MALE. *Cal.* five-cleft, bell-ſhaped. *Cor.* none. *Stam.* twelve.

FEM. *Cal.* four-toothed. *Cor.* none. *Styles* three. *Capſ.* (which was the calyx) muricate, four-valved. *Seeds* two.

SPECIES.

1. Fagus Caſtanea. *Common Cheſtnut-tree.*

Lin. ſpec. 1416. *Reich.* 4. 166. *hort. cliff.* 447. *upſ.* 287. *mat. med.* 203. *Hudſ. angl.* 422. *With.* 1086. *Gron. virg.* 150. *Hunt. evel. ſilva.* 159—153. *Allion. pedem. n.* 1987. *Pallas roſs.* 2. 5. *Lour. cochinch.* 571. *Villars dauph.* 3. 796.

Caſtanea ſativa. *Mill. dict. n.* 1. *fig. t.* 84. *Scop. carn. n.* 1187. *Hall. helv. n.* 1623. *Blackw. t.* 330.

Caſtanea. *Cam. epit.* 118. *Ger.* 1253. 1. *emac.* 1442. 1. *Raii ſyn.* 440.—ſylveſtris & ſativa. *Bauh. pin.* 418. *Bauh. hiſt.* 1. 121. *Raii hiſt.* 1382.—vulgaris. *Park. theat.* 1400. 1.

Leaves lanceolate, with acuminate ſerratures, naked underneath.

2. Fagus pumila. *Dwarf Cheſtnut-tree,* or *Chinquapine.*

Lin. ſpec. 1416. *Reich.* 4. 167. *Gron. virg.* 150.

Caſtanea pumila. *Mill. dict. n.* 2. *Pluk. alm. t.* 156. *f.* 2. *Cateſb. car.* 1. *t.* 9. *Duham. arb.* 3.

Leaves lanceolate-ovate, acutely ſerrate, tomentoſe underneath, aments filiform, knotty.

3. Fagus ſylvatica. *The common Beech-tree.*

Lin. ſpec. 1416. *Reich.* 4. 167. *hort. cliff.* 447. *fl. ſuec. n.* 871. *mat. med.* 203. *Hudſ. angl.* 422. *With.* 1087. *Lightf. ſcot.* 584. *Hunt. evel. ſilva p.* 136—131. *Hall. helv. n.* 1622. *Pollich pal. n.* 910. *Neck. gallob.* 391. *Willich. obſ.* 5. *Allion. pedem. n.* 1988. *Gærtn. fruct.* 182. *Pallas roſs.* 2. 5. *Villars dauph.* 3. 796.

Caſtanea Fagus. *Scop. carn. n.* 1188.

Fagus. *Bauh. pin.* 419. *Camer. epit.* 112. *Matth.* 205. *Dod.* 832. *Ger.* 1255. *emac.* 1444. *Park. theat.* 1403. *Bauh. hiſt.* 1. 118. *Raii hiſt.* 1381. *ſyn.* 439.

[β. F. purpurea, foliis atrorubentibus. *Purple-leaved Beech-tree. Du Roi hort. harbec.* 1. 268.

Leaves ovate, obſcurely ſerrate.

4. Fagus ferruginea. *American Beech-tree.*

Ait. hort. kew. 3. 362.

F. americana latifolia. *Du Roi hort. harbecc.* 1. 269.

Leaves ovate-oblong, remotely and acutely ſerrate, acuminate, tomentoſe underneath.

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[d] Hort. kew.

[e] Forſk.

[f] Thunberg.

5. Fagus cochinchinenſis.
Lour. cochinch. 571.
Leaves ovate, crowded: capſules three-celled, three-valved.

DESCRIPTIONS, *&c.*

1. The Cheſtnut-tree had its name Caſtanea from a town of the name of Καστανις, in Theſſaly, about which this tree grew in great abundance. Theophraſtus calls it Διος βαλανος, and the nuts καρυα Ευβοικα, and Διος βαλανον. The Greeks alſo called them Αμοτα and Λοπιμα. It has the ſame appellation in all the European languages. In German *Caſtanienbaum*; in Swediſh and Daniſh *Caſtanietræe*; in French *Châtaignier*; in Italian *Caſtagno*; in Spaniſh *Caſtano*; in Portugueze *Caſtanheiro*. In Ruſſian it is *Keſchtan*.]

This tree will grow to a very great ſize, and ſpread its branches finely on every ſide where it has room; but planted cloſely, will ſhoot up ſtraight to a great height. The leaves are large, of a lucid green; [they end in a long very taper point, and the ſerratures terminate in a kind of tender prickle [a]; they are about four or five inches long, and two wide, ſomewhat wrinkled, having ſeveral tranſverſe veins, prominent on the under ſurface, and proceeding from a ſtrong midrib. The aments or catkins of male flowers are pendulous at the ends of the branches, very long, and reſemble thoſe of the walnut [b]. They have a ſtrong ſpermatic ſmell; the flowers are collected in remote little balls, and are ſeſſile. The proportion of male flowers to the females is prodigious. The ſtamens are about nine in number; (five to eighteen. *H.*) In the female flowers the number of ſtyles varies from four to ſeven, but ſix is the moſt common. The calyx becomes an echinate capſule of four valves, of a ſilky ſmoothneſs on the inſide; and containing two nuts, ſometimes three, or only one [c].

The Cheſtnut, in maturity and perfection, ſays Mr. Gilpin, is a noble tree, and grows not unlike the oak. Its ramification is more ſtraggling, but it is eaſy, and its foliage looſe. This is the tree which graces the landſcapes of Salvator Roſa, who painted in the mountains of Calabria, where it flouriſhes.

The Cheſtnut has long been naturalized to the ſouthern countries of Europe. It is ſaid that Tiberius Cæſar firſt brought it from Sardis in Lydia to Italy, whence it was propagated into France, and ſo among us [d]. It is indigenous in many parts of Aſia, in China, Cochinchina, Japan, &c.

The Cheſtnut abounds now in the mountainous parts of Italy, in the South of France, in Switzerland, in the Valais, and many parts of the Alps towards Italy, in Corſica and Sicily, where it grows half way up mount Etna; alſo in Carniola, ſome parts of Germany, &c.]

With us in England, ſays Miller, it was formerly in greater plenty than at preſent, as may be proved by the old buildings in London, which were for the moſt part of this timber; and there are remains of old decayed Cheſtnuts in the woods and chaces not far diſtant from London, particularly Enfield chace. [I doubt very much, however, whether the timber ſuppoſed by Mr. Miller, and by architects in general to be Cheſtnut in our old buildings, be any thing more than Oak of a different grain, and inferior quality.

Mr. Evelyn makes little doubt but that the Cheſtnut is a free-born of this iſland. Dr. Ducarel is of the ſame opinion, and among the ancient records to which he appeals, produces a deed of gift from Henry II. to Flexley abbey, of the tithe of all his Cheſtnuts in the foreſt of Dean. The Hon. Daines Barrington on the contrary (*Philoſ. tranſ. vol.* 61.) thinks that it is not a native. It certainly is not in the woods north of Trent, and though it has been long in the ſouthern parts, yet there is no appearance of its being indigenous [e].

This tree ſeems to be very long lived, and grows to a very great ſize. The famous *Caſtagno de Cento Cavalli* on mount Etna, as meaſured by Mr. Brydone in 1770, is 204 feet in circumference; ſome, however, have doubted whether this be really one tree. Brydone ſays, it had the appearance of five diſtinct trees, but that he was aſſured the ſpace was once filled with ſolid timber, and that there was no bark on the inſide. Kircher, about a century before Brydone, affirms that an entire flock of ſheep might be commodiouſly incloſed within it, as in a fold. *Il Caſtagno del Galea*, of which there is no doubt, meaſured then ſeventy-ſix feet round, at two feet from the ground. But theſe trees grow on a deep rich ſoil, formed from the aſhes of the volcano.

There are ſome fine Cheſtnuts on the banks of the river Tamer in Cornwall, at an old houſe belonging to the Edgecumbe family: and at Beechworth caſtle in Surrey there are not fewer than ſeventy or eighty trees meaſuring from twelve to eighteen or twenty feet in girt.

At Wimley near Hitchin Priory in Hertfordſhire, a Cheſtnut in 1789 girted ſomewhat more than fourteen yards at five feet above the ground; its trunk was hollow, and in part open, but its vegetation was vigorous [f].

In the park adjoining to the garden at Great Canford in Dorſetſhire are four large Cheſtnut trees, one of them meaſuring thirty-ſeven feet round, ſtill bearing fruit plentifully, though much ſhivered and decayed by age [g].

There was an old decayed tree at Fraiting in Eſſex, whoſe very ſtump yielded thirty ſizeable loads of logs. And another in Glouceſterſhire containing within its bowels a pretty wainſcotted room, enlightened with windows, and furniſhed with ſeats, &c [h]. Ben Jonſon, in his poem on Penſhurſt, makes mention of a Cheſtnut planted at the birth of Sir Philip Sidney.

In Ireland there are or have been many fine Cheſtnuts; as an avenue at Dunganſtown, the eſtate of William Hoey, Eſq., cut down in 1793; one of theſe meaſured fourteen feet three inches, another fifteen feet, and a third ſixteen feet ſix inches round; the length of one was twenty-four feet, and another thirty-ſix.

The moſt remarkable of theſe trees in England is that at Tortworth, the ſeat of Lord Ducie in Glouceſterſhire. Even in the year 1150, ſays Bradley, it was ſtiled the great or old Cheſtnut tree of Tortworth; it fixes the boundary of the manor, and is probably 1000 years old at leaſt. It girted fifty-one feet at ſix feet above the ground, about the year 1720: it divided at the crown into three limbs, one of which then meaſured twenty-eight feet and a half in girt, five feet above the crown. The ſoil in which the tree grows is a ſoft clay ſomewhat loamy, and the ſituation on the N. W. ſide of a hill [i].

Lord Ducie has a beautiful painting of this ancient tree. I have, by the favour of his Lordſhip, an etching of it, made in the year 1772, under which is this inſcription—"The eaſt view of the "ancient Cheſtnut tree at Tortworth, in the County "of Glouceſter, which meaſures nineteen yards in "circumference, and is mentioned by Sir Robert "Atkyns in his hiſtory of that County, as a famous "tree in King John's time, and by Mr. Evelyn in "his Sylva, to have been ſo remarkable for its "magnitude, in the reign of King Stephen, as then "to be called the great Cheſtnut of Tortworth, "from which it may reaſonably be preſumed to "have been ſtanding before the conqueſt."—When this etching was made, it was barely included within the garden wall, which bore hard upon it; but the preſent Lord Ducie removed the incumbrance, and at the ſame time applied freſh earth to the roots, which ſeems to have enlivened it. So late as the year 1788 it produced great quantities of fruit, which though ſmall, were ſweet and well flavoured.

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[a] Woodw. Mſs.
[b] Ray.
[c] Haller, Scopoli, Ray.
[d] Evelyn.
[e] Evelyn's ſilva by Hunter.
[f] Gilpin's for. ſcen. 1. 59. & 141.
[g] Groſe's antiquities, ſuppl. vol. 1.
[h] M.S. Ord.
[i] Philoſ. account, p. 176. alſo Gent. mag. for 1766. p. 321. where is a figure of it.

Mr. Lyſons alſo has etched two views of this famous tree, from the S.W. and the N.W. He ſays that in 1791 it meaſured forty-four feet four inches round in the thickeſt part, which is much leſs than the dimenſion given by Bradley, and yet this is exceeded by that of Sir Robert Atkyns, who gives it nineteen yards. Sir Robert is of opinion that it was originally ſeveral trees; and Mr. Marſhall thinks it to be two trees grown together. Sir Robert Atkyns mentions the tradition of its having been growing in the reign of King John; and Mr. Peter Collinſon relying on the accounts of Evelyn and Bradley, ſuppoſed it to have been planted in the reign of King Egbert. But Mr. Lyſons ſays, that there does not ſeem to be any authority to ſhow at what period it became remarkable for its ſize, except a very vague tradition; and it could never have been a boundary of the manor, for it ſtands in the centre of it.]

The Cheſtnut is a tree which deſerves our care as much as any of the trees which are propagated in this country, either for uſe or beauty; being one of the beſt ſorts of timber, and affording a goodly ſhade. The leaves continue late in the autumn, turning then to a golden colour; nor are they ſo liable to be eaten by inſects as are thoſe of the Oak, which of late years have frequently happened to the latter, and has rendered them very unſightly great part of ſummer, which I have never obſerved to be the caſe with the Cheſtnut, which renders them more valuable for parks and plantations for ornament; and there is no better food for deer, and many other animals, than their nuts, which moſt of them prefer to acorns; but yet there ſhould not be many of theſe trees planted too near the habitation; becauſe, when they are in flower, they emit a very diſagreeable odour, which is very offenſive to moſt people.

[The ſhade alſo of the Cheſtnut, like that of the Aſh, is injurious to other plants; it ſhould therefore be planted in thickets, or in detached plantations[k]. Or if theſe trees be planted in large wilderneſs quarters next the walks, or in woods by the ſide of the ridings; and left untrimmed as they ought to be, they will feather to the bottom, and hide the naked and crooked ſtems of other trees[l].

To recommend the reſtoration of this noble and uſeful tree, which has unaccountably been in a manner loſt among us, we muſt obſerve, that it] may be cultivated in England ſo as to afford an equal profit without any other ſort of timber tree; ſince the wood is equal in value to the beſt Oak, and for many purpoſes far exceeding it, particularly for caſks, for which it is much uſed in Italy; and for pipes to convey water under ground. In Italy it is planted as coppice-wood, to make ſtakes for their vines, which will continue ſeven years.

[It muſt therefore be very proper for ſtakes in eſpaliers and dead hedges, for hop-poles, hurdles, &c. It was formerly uſed for all the ſame purpoſes as Oak, in building, mill-work, and houſhold furniture. And lately ſome of it that was finely variegated has been ſucceſsfully employed in doors and balluſtrades of a ſtair-caſe; a colour being given them, by rubbing them over with alum water, then laying on with a bruſh a decoction of logwood chips, and laſtly a decoction of Brazil wood; they have been frequently taken for mahogany.

Some perſons aſſert that the timber of Cheſtnut is brittle, and decays at heart; whilſt, according to others, it will laſt longer than Oak, is not ſubject to cracks or flaws, and is never attacked by ſpiders or other inſects. Old Cheſtnut is very brittle, and apt to crack, and therefore ſhould never ſtand longer than whilſt it is in a growing ſtate. If cut when it ſquares only ſix inches, it will be as durable as Oak of ſix times its ſize and age; having very little ſap in proportion to other trees. The durability of it when expoſed to the weather is ſufficiently aſcertained, from its uſe for gate-poſts at Wellington in Somerſetſhire, of which the following is an account.—In or about the year 1763, ſome gate-poſts of Oak, and others of Cheſtnut were to be repaired; they had the appearance of being put in at the ſame time, but the latter were much more ſound, inſomuch that ſome of them were adjudged good enough to remain as gate-poſts, and are now to be ſeen there (1788). Such as were too ſmall were taken up, and ſet as poſts to fix rails to. At the ſame time ſome new poſts of Oak were put in, there not being enough of the old Cheſtnut poſts. Though theſe were old when put in, twenty-five years ago, they are now (1788) more ſound than the Oak poſts which were then new. One ſide of the Cheſtnut poſts was the outſide of the tree, but the timber is as ſound there as in any other part; which would not have been the caſe with Oak, the ſap of which, next the bark, ſoon decays. The Cheſtnut gate-poſts had been put down many years before 1745; they have therefore probably ſtood the weather above half a century[m].

Another account ſays, that the branch of a Cheſtnut about thirteen inches ſquare, which in the year 1726 was put down as a hanging poſt for a gate, and carried the gate fifty-two years, when taken up appeared perfectly ſound, and was put down for a clapping-poſt in another place.

In 1743 a large barn was built with ſome of this timber, and is now (1792) ſound in every part. About the ſame time ſeveral poſts and rails were put down, which after ſtanding thirty or forty years, generally appeared ſo ſound, as to admit of being ſet up in ſome other place.

In 1772 a fence was made of poſts and rails converted from young Oaks and Cheſtnuts of the ſame age and ſcantling. In 1791 this fence was removed, when the Cheſtnut poſts were found as ſound as when they were firſt put down; but thoſe of Oak were ſo much waſted juſt below the ſurface of the ground, that they could not be uſed again without a ſpur[n].

The nuts are the uſual, and in ſome places almoſt the only food of the common people in the Apennine mountains of Italy, in Savoy, and ſome parts of the South of France; not only boiled and roaſted, but alſo in puddings, cakes and bread. They are eſteemed to be a very flatulent diet, and hard of digeſtion; yet there are inſtances in Italy of men's living to ninety or a hundred years of age, who have fed wholly on Cheſtnuts. They are brought even to faſhionable tables in deſerts. Mr. Ray mentions that they are eaten in Italy with orange or lemon juice and ſugar; and that they are commonly ſold there about the ſtreets, roaſted on a portable furnace; whence we may conclude that this luxury was unknown at London in the laſt century. Theſe nuts are uſed for whitening linen cloth, and for making ſtarch; they are reputed excellent for feeding hogs. The leaves alſo make uſeful litter, and mixed with the dung of the cattle are a good manure[o].

The foregoing account will, I hope, have ſome tendency to encourage the growth of this noble though neglected tree. Mr. Peter Collinſon, who made no doubt of its being a native, aſſigned the great profit ariſing from Cheſtnuts when cut for hop-poles as the reaſon why it is ſo rare to ſee large trees in the woods[p]. Let us hope, however, to ſee it rear its head again as a timber tree among us. An arret of the council at Paris was publiſhed in may 1720, ordering that all the great roads in France ſhould be planted with Cheſtnut or other ſuch fruit or foreſt-trees as are ſuitable to the nature of the ground, at thirty feet diſtance from each other, and within ſix feet of the top of the ditch[q].

The principal plantations which have been made of late years in Great-Britain are in the northern parts of the iſland. The Earl of Fife has planted above 60,000 trees in the county of Murray. George Roſs, Eſq. 4000 in Cromarty. In England Mr. Windham's plantations at Felbrigg in Norfolk, made in 1676, are well known. Mr. Joſeph Mace has planted ſix acres ſeventeen perches, with above 3000 trees, at Aſhford in Biddenden, Kent. John Sneyd, Eſq. 8000 at Belmont in Staffordſhire from 1784 to 1786. Mr. Joſeph Cowliſhaw ſix acres in Carlton foreſt, with above 1800 of theſe trees, mixed with Larch, Aſh, &c. &c.[r]]

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[k] Boutcher.

[l] Evelyn's ſilva by Hunter.

[m] Tranſact. ſoc. arts for 1789. p. 10, &c.

[n] Ibid. for 1792. p. 30.

[o] Boutcher.

[p] Gent. magaz.

[q] M.S. Ord.

Varieties.

There are ſeveral varieties of the Cheſtnut, which have accidentally ariſen from ſeeds; but the difference is chiefly in the ſize of the fruit and leaves. There is, however, one with variegated leaves which is propagated in the nurſeries as a curioſity.

[The ſtriped Cheſtnut is among the moſt beautiful of the variegated trees, the blotches being of a rich ſhining gold colour, ſtrongly marked[s].

The dwarf branching Cheſtnut is no more than a variety of the common ſort.]

2. The Chinquapine or dwarf Virginian Cheſtnut ſeldom grows above twelve or fourteen feet high, but produces great plenty of nuts, which are, for the moſt part, ſingle in each capſule. This tree is very hardy, and will reſiſt the ſevereſt of our winters in the open ground, but is very apt to decay in ſummer; eſpecially in a dry ſoil. But although it delights in moiſture; yet if the wet continues long upon the ground in winter, it frequently deſtroys the trees. It is very common in the woods of America, but is rare in England, [though it was cultivated ſo long ſince as 1699, by the Dutcheſs of Beaufort[t].

3. The Beech had its latin name *Fagus* from the Greek φαγος, which in the Doric dialect is put for φηγος, from φηγω, *to eat*, either becauſe mankind lived on beech-maſt before the uſe of corn, or becauſe it was the food of the common people[u]. We are not to ſuppoſe that the *Fagus* of the Romans is the ſame with the φηγος of the Greeks, which is a ſpecies of oak[x]. It is, however, imagined by ſome that the *Fagus* of Cæſar, Virgil and Vitruvius is a ſpecies of Oak, and not the Beech[y]. Our Beech is the Οξυα of the Greeks, and Belon informs us that it is ſtill called by that name on mount Athos.

The appellation is the ſame in all the northern languages, and in all the dialects of the Sclavonian. In German, *Buche*, *Buke*, or *Boke*; in Daniſh, *Bog*; in Swediſh, *Bok*; in Ruſſian, Poliſh, &c. *Buk*. The French *Hêtre* is from the German *Heſter*, which ſignifies a young Beech. In Italian it is *Faggio*, from the Latin. In Portugueze this is ſoftened into *Faya*; and in Spaniſh into *Haya*; but in ſome provinces it is *Fagos*.

This tree will grow to a very large ſize, lofty and ſpreading, the trunk ſtraight, and covered with a whitiſh bark. The leaves are ſmooth and gloſſy, waved on the edges rather than ſerrate, or ſlightly ſinuate-toothed, three inches and more in length, and two or upwards in breadth: the petioles reddiſh, ſlightly grooved above, four or five lines in length, pubeſcent, as is alſo the midrib of the leaf. Stipules reddiſh-brown, ſhining, lanceolate, conſpicuous. It retains the old leaves through the winter. The male catkins come out in bunches from the ends of the ſmall branches; they are roundiſh, obtuſe, half an inch long, and almoſt as broad; on peduncles from half an inch to fourteen lines in length, pendulous, round, and pubeſcent. Calyx cut half way into ſix ſharp, villoſe, yellowiſh ſegments. Stamens uncertain (4, 6, 8, 9, 11, 12.), from the bottom of the calyx. The female aments come out from the ſame place, a little above the others; they are erect, and on round, whitiſh, villoſe peduncles, four lines or upwards in length: the common involucre has two flowers, is four-cleft, and covered with ſoft ſpines; calyx ſuperior, ſix-leaved, tomentoſe: germ three-celled, with two rudiments of ſeeds in each cell; ſtyles three (or one three-cleft. *G.*); ſtigmas awl-ſhaped, and ſlightly hooked, yellowiſh and ſmooth; at the top of the germ there are alſo ſix whitiſh villoſe ſegments, ſhorter than the ſtyles. The fruit is compoſed of two nuts joined at the baſe, covered with an almoſt globular four-valved involucre, with ſoft ſpines on the outſide, but within very ſmooth and ſilky: the nuts when ripe are one-celled and triangular; and contain one or two angular ſeeds[z].

The Beech is native of the greater part of Europe, and the ſouthern provinces of the vaſt Ruſſian empire; but it is not fond of very high or cold ſituations, nor is it found in the northern provinces of Sweden. Mr. Lightfoot doubts whether it be indigenous in Scotland; and Mr. Marſhall thinks it is not a native of the northern counties in England; it proſpers in a chalky and rocky ſoil, but not in light lands. It thrives prodigiouſly in ſheltered bottoms, and of all expoſures moſt diſlikes the weſt. In ſome parts of Hertfordſhire, where the ſoil is a ſtrong clay full of flints, this tree grows to a great ſize, and is extremely beautiful.

Mr. Arthur Young (Travels in France, p. 7.) ſpeaks of a Beech at Chantilly, as the fineſt he ever ſaw; ſtraight as an arrow, and not leſs than eighty or ninety feet high; forty feet to the firſt branch, and four yards in diameter at five feet from the ground.

In Ireland ſeveral fine Beeches are mentioned, though it is not ſuppoſed to be a native of the iſland. As at Tiny-Park, the ſeat of Sir Skeffington Smyth, Bart. three noble trees together, the ſmalleſt fourteen feet round, the next fifteen feet ſix inches at the butt, and fourteen feet eight inches at ſeven feet from the ground, the third is ſixteen feet three inches round, and continues nearly of the ſame girt for thirty-ſix feet.

Cæſar's aſſertion that the *Fagus* was not in Britain when he viſited the iſland, can hardly be got over but by ſuppoſing that his *Fagus* is not the *Beech*.

Beech, ſays the late Mr. White, is one of the moſt grand and lovely of all the foreſt trees, whether we conſider its ſtately trunk, its ſmooth ſilvery rind, its gloſſy foliage, or graceful ſpreading pendulous boughs. No tree, ſays another, is more beautiful when ſtanding ſingly in parks or ornamental grounds, as it throws out its branches very regularly, and feathers almoſt to the ground. In woods or groves it grows clear of branches to a great height[a].

Mr. Gilpin is not inclined to rank the Beech much higher in picturesque beauty than in utility. Its trunk, he allows, is often highly picturesque, being ſtudded with bold knobs and projections, and having ſometimes a ſort of irregular fluting, which is very characteriſtic. The bark, too, wears often a pleaſant hue; it is naturally of a dingy olive, but is overſpread, in patches, with a variety of moſſes and lichens: its ſmoothneſs alſo contraſts agreeably with theſe rougher appendages. This is all the merit Mr. Gilpin allows to the Beech: for we rarely ſee it well ramified; and in full leaf it has the appearance of an overgrown buſh. Virgil, indeed, was right in chooſing the Beech for its ſhade, for no tree forms ſo complete a roof, but its buſhineſs gives it a great heavineſs. The Beech is moſt pleaſing in its juvenile ſtate. A light airy young tree, with its ſpiry branches hanging in eaſy forms, is often beautiful. Some of the fineſt oppoſitions of tint in the autumn ariſe from the union of this tree with the oak[b].]

The Beech is very well adapted to form lofty hedges, to ſurround plantations or large wilderneſs quarters, or for ſcreens where there is not room for trees to extend their branches naturally. Although the timber of this tree is not ſo valuable as that of many others, yet as it grows very faſt in chalky or ſtony ground of little value, with a clear ſmooth bark, and ſtraight trunk; as it will thrive on ſuch ſoils and in ſuch ſituations as better trees will ſcarcely grow in; and as it will reſiſt winds on the declivities of hills better than moſt other trees; the planting of it ſhould be encouraged, eſpecially as it affords an agreeable ſhade, and the leaves both make a fine appearance in ſummer, and continue green as long in autumn as any of the deciduous trees; when they turn brown or orange, and frequently hold on all the winter. In parks, therefore, and other plantations for pleaſure, this tree deſerves to be cultivated among thoſe of the firſt claſs, eſpecially where the ſoil is adapted to it.

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[r] Tranſact. ſoc. arts.
[s] Boutcher.
[t] Hort. kew.
[u] Voſſius.
[x] Ray.
[y] Gent. magaz. vol. 54. 656.
[z] Pollich, Haller, Gærtner.
[a] Woodw. in With.
[b] Foreſt ſcenery, 43, &c.

[But though the wood of the Beech be brittle, and decays ſoon in the air, yet it will endure long under water, and ſerves for a great variety of uſes, as will appear from the following account. It is of great uſe to turners for making trenchers, diſhes, trays, buckets, &c.; to the joiner for ſtools, bedſteads, and other furniture; to the wheeler and mill-wright. It makes ſhovels and ſpade-graffs for the huſbandman, and is uſeful to the bellows-maker. Floats for fiſher's nets, inſtead of corks, are made of its bark. It is good for fuel, billet, bavin and coals, though one of the leaſt laſting; and its very ſhavings are good for fining of wine. If the timber lie altogether under water, 'tis little inferior to Elm. Baſkets for ſtrawberries, &c. are made of the bark. Of the thin lamina or ſcale of the wood, ſcabbards for ſwords, band-boxes, hat-caſes, &c. The leaves are uſed abroad, on account of their elaſtic quality, inſtead of ſtraw for the *paillaſſe* to lay under their mattraſſes.—To this enumeration of uſes by Mr. Evelyn, we may add many others.—It is now in much uſe among the cabinet-makers for chairs, both plain and painted, for bedſteads, with the poſts frequently ſtained the colour of mahogany. It is uſed in the country for rafters in building. Much of it is cut out into quarters and planks for various purpoſes; and barn-floors are frequently laid with it. The mill-wright uſes it for cogs, &c. and the wheel-wright for ſpokes and fellies. It goes to the dock-yards for wedges, and may be uſed in ſhip's bottoms from the keel to the floor-heads; and to the coal-mines under the name of Newcaſtle railing. Being of an even grain, and without knots, it makes beautiful benches and railing for public rooms, and many ſorts of inſide work in houſes. It is formed into gun-ſtocks, tool-handles, mallets, carpenters planes, &c. heel-pieces, and pegs for heels, and is uſed for the ſounding boards of harpſichords, &c. by the muſical-inſtrument makers. It is cut into pipe-ſtaves for dry goods, eſpecially by the ſoap-caſk coopers, for whoſe uſe a conſiderable quantity is imported in ballaſt from Bremen and Dantzick, in ſlabs and clapboards about five feet in length. It is ſaid that theſe coopers conſume from twenty to thirty thouſand of theſe clapboards yearly, except in time of war, when the importation is ſtopped. It is excellent fuel, and in burning affords a large quantity of pot-aſh. Much of it is ſent to the Metropolis under the name of London billet, for the uſe of the bakers, glaſshouſes, &c. The ſtack-wood, which is made up of the branches, is burnt chiefly into charcoal. The nuts, or maſt, as they are commonly called, fatten ſwine, but the fat is not firm; and they are greedily devoured by mice, ſquirrels and birds; they are ſaid to occaſion giddineſs and head-ach; but when dried and powdered to make wholeſome bread: roaſted, they are ſometimes ſubſtituted for coffee: the poor people in Sileſia uſe the expreſſed oil inſtead of butter. At the beginning of this century Aaron Hill had a project for paying off the national debt with the oil of Beech-nuts! But they ſeem to yield little oil in northern countries; in Sweden, Linneus informs us, ſcarcely any can be expreſſed from them.

If the ſoil be tolerably good, Beech will become fit to be felled in twenty-five years. The woods are then drawn, as it is called; that is, the trees fit for fire-wood or billet, poles, timber, &c. are taken down, and no crooked trees are ſuffered to remain. Formerly it was the cuſtom to leave the old ſtools to produce new trees, but as theſe ſeldom grow well and handſome, now during the winter the old ſtools are grubbed up, and the plants which ſpring ſpontaneouſly from the maſt are encouraged to ſupply the places of the trees which are taken down. Once in ſix or ſeven years this operation of drawing the woods may be repeated; and thus there is a conſtant and regular ſucceſſion of trees fit to cut. The price which fire-wood or billet fetches in Buckinghamſhire is near 4d. the foot ſolid meaſure. The poles and better ſtuff for gun-ſtocks, wedges, &c. ſell for 5d. the foot. The largeſt trees for Mill-wrights, &c. ſell at 6d. or 7d. the foot. Stackwood is 15s. or 16s. the load: and faggots 15s. or 16s. the hundred.

Whatever may have been the caſe with reſpect to our iſland in Cæſar's time, the Beech is now no uncommon tree in many conſiderable tracts of it, particularly on that great ridge of chalk hills which runs from Dorſetſhire, through Wiltſhire, Hampſhire, Surrey, Suſſex and Kent, branching out into Berkſhire, Buckinghamſhire, and Hertfordſhire. On the declivities of the Cotſwold and Stroudwater hills of Glouceſterſhire, and on the bleak banks of the Wye, in the counties of Hereford and Monmouth. It is indeed to be found in almoſt every county of England.

Some plantations of it have been lately made by the Earl of Fife, in the county of Murray, where his Lordſhip has planted near two hundred thouſand of theſe trees. George Roſs, Eſq. has alſo ſet 13,000 of them in Cromarty. In England, John Sneyd, Eſq. has planted above 14,000 at Belmont in Staffordſhire between the years 1784 and 1786. And the Biſhop of Llandaff 2000 at Ambleſide in the year 1788.]

Varieties.

There are ſome planters who ſuppoſe that there are two ſpecies of this tree, the Mountain Beech, and the wild Beech; the firſt of which has a whiter wood than the ſecond; but this difference ariſes only from the ſoil. There are alſo ſeeds of a Beech brought from North America by the name of broad-leaved Beech; but the plants raiſed from them proved to be the common ſort.

[There are two varieties in the nurſeries, one with yellow, and the other with white ſtripes. In Germany they have another variety with dark red leaves, which is called the *Purple Beech*. There are alſo ſome trees in our woods with a rougher bark, which the woodmen call *Hay Beech*.

4. Native of North America, and introduced in 1766 by Meſſrs. Kennedy and Lee[c].

5. This is a ſmall tree about five feet high, with branches aſcending a little. Leaves obſcurely ſerrate, ſmooth, petioled. Male flowers in terminating aments, with a five-cleft calyx and corolla, and twelve ſtamens. Female flowers below on the ſame branch, with a five-cleft calyx, and no corolla. Capſule muricated, three-celled, three-valved, one-ſeeded. The ſeeds are of the ſame form and colour with the common ſort, but very ſmall. The corolla of the male flowers, being very thin and membranaceous, may be conſidered as a nectary. It is doubtful whether this be ſpecifically different from the common Beech. Native of Cochinchina[d].]

PROPAGATION AND CULTURE.

CHESTNUT.

This tree is propagated by planting the nuts in february, in beds of freſh undunged earth. The beſt nuts for ſowing, are ſuch as are brought from Portugal and Spain, and are commonly ſold in winter for eating, provided they are not kiln-dried, which is generally the caſe of moſt of thoſe brought from abroad, which is done to prevent their ſprouting or ſhooting in their paſſage; therefore, if they cannot be procured freſh from the tree, it will be much better to uſe thoſe of the growth of England, which are full as good to ſow for timber or beauty as any of the foreign nuts, though their fruit is much ſmaller: theſe ſhould be preſerved until the ſeaſon for ſowing, which is the beginning of march, in ſand, where mice or other vermin cannot come to them, otherwiſe they will ſoon deſtroy them: before you ſet them, it will be proper to put them into water to try their goodneſs, which is known by their weight; thoſe that ſwim upon the ſurface of the water ſhould be rejected as good for nothing; but ſuch as ſink to the bottom, you may be ſure are good.

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[c] Hort. kew.

[d] Loureiro.

In ſetting theſe ſeeds or nuts, the beſt way is, to make a drill with a hoe, as is commonly practiſed in ſetting Kidney Beans, about four inches deep, in which you ſhould place the nuts, at about four or ſix inches diſtance, with their eye uppermoſt; then draw the earth over them with a rake, and make a ſecond drill at about a foot diſtance from the former, proceeding as before, allowing three or four rows in a bed, with an alley between, three feet broad, for a conveniency of clearing the beds, &c. When you have finiſhed your plantation, you muſt be careful that it is not deſtroyed by mice, or other vermin; which is very often the caſe, if they are not prevented by traps, or other means.

In april theſe nuts will appear above ground; you muſt therefore obſerve to keep them clear from weeds, eſpecially while young: in theſe beds they may remain for two years, when you ſhould remove them into a nurſery, at a wider diſtance. The beſt ſeaſon for tranſplanting theſe trees, is either in october or at the end of february; but october is the beſt ſeaſon: the diſtance theſe ſhould have in the nurſery, is three feet row from row, and one foot or eighteen inches in the rows: you muſt be careful in tranſplanting theſe trees, to take them up without injuring their roots, nor ſhould they remain long out of the ground; but if they have a downright tap-root, it ſhould be cut off, eſpecially if they are intended to be removed again; this will occaſion their putting out lateral roots, and render them leſs ſubject to miſcarry when they are removed for good.

The time generally allowed them in this nurſery, is three or four years, according to their growth; but the younger they are tranſplanted, if deſigned for timber, the better they will ſucceed; during which time you ſhould be careful to keep them clear from weeds, obſerving alſo to prune off lateral branches, which would retard their upright growth; and where you find any that are diſpoſed to grow crooked, either by their upper bud being hurt, or from any other accident, you may the year after planting, in march, cut them down to the lowermoſt eye next the ſurface of the ground, which will cauſe them to make one ſtrong upright ſhoot, and may be afterwards trained into good ſtraight trees: but this ſhould not be practiſed, unleſs the plants have abſolutely loſt their leading ſhoot; for although the ſtems of the trees ſhould be very crooked, as is generally the caſe with them when young, yet when they are tranſplanted out, and have room to grow, as they increaſe in bulk, they will grow more upright, and their ſtems will become ſtraight, as I have frequently obſerved where there have been great plantations made of them.

But in doing this, you muſt be careful not to diſturb or break their roots, which, perhaps, might deſtroy them. Theſe trees require no other manure than their own leaves, which ſhould be ſuffered to rot upon the ground; and in the ſpring of the year, the ground ſhould have a ſlight digging, when theſe ſhould be buried between their roots, but not too cloſe to the trees, which might be injurious to their young fibres.

After having remained three or four years in the nurſery, they will be fit for tranſplanting, either in rows to grow for timber, or in quarters for wilderneſs plantations, avenues, clumps, or the orchard; but if you intend them for timber, it is by much the better method to ſow them in furrows, as is practiſed for Oaks, &c. and let them remain unremoved; for theſe trees are apt to have a downright tap-root, which, being hurt by tranſplanting, is often a check to their upright growth, and cauſes them to ſhoot out into lateral branches, as is the caſe with the Oak, Walnut, &c.

But where the fruit of them is more ſought after, then it is certainly the better way to tranſplant them; for as tranſplanting is a check to the luxuriant growth of trees, ſo it is a promoter of their fructification, as may be evinced by obſerving low ſhrubby Oaks, Walnuts, &c. which generally have a greater plenty of fruit than any of the larger and more vigorous trees; and the fruit of ſuch trees is much ſuperior in taſte, though the ſeeds of vigorous trees are vaſtly preferable for plantations of timber; for it is a conſtant obſervation, that, by ſaving ſeeds from dwarf trees or plants, from time to time, they may be rendered much lower in their growth than is their natural ſize; but where the fruit is moſt deſired, then they ſhould be taken from ſuch trees as produce the largeſt and ſweeteſt nuts, which are commonly found upon ſuch trees as ſpread the moſt, and have horizontal roots; for the weaker trees being leſs capable to furniſh a ſupply of nouriſhment, and having a greater quantity of fruit upon them, to which this muſt be diſtributed, together with their roots lying near the ſurface of the ground, by which means the juices are better prepared by ſun, air, &c. before it enters their veſſels, it is certain their juices are better digeſted, and their fruits better maturated, than thoſe can poſſibly be which grow upon ſtrong vigorous trees, which have long tap-roots running ſeveral feet deep into the earth, and conſequently take in vaſt quantities of crude unprepared juice, which is buoyed up to the extreme parts of the tree; and theſe ſeldom having many lateral branches to digeſt and prepare their juice, by perſpiring and throwing off the crude part before it enters the fruits.

And this, I dare ſay, univerſally holds good in all ſorts of fruit trees, and is often the occaſion of the good and bad qualities of the ſame ſorts of fruits growing on the ſame ſoil.

What has been related about grafting this tree into the Walnut, to promote its bearing, or render the fruit fairer; or inoculating Cherries into the Cheſtnut, for later fruit, is very whimſical and ſilly, ſince neither the Cheſtnut nor Walnut will receive its own kind any other way than by inoculating or inarching; and it is the latter only by which the Walnut can be propagated; nor was it ever known, that any two trees of a different genus would take upon each other ſo as to produce either a good tree or fruit: therefore we may juſtly explode all thoſe different graftings of various trees upon each other, ſo much talked of by the ancients; at leaſt we may ſuppoſe thoſe trees are not known by the ſame names now that they are mentioned by in their writings; for I have made many trials upon them, which, although performed with great care, and in different ſeaſons, yet ſcarcely one of them ſucceeded. But to return:

If you deſign a large plantation of theſe trees for timber, after having two or three times ploughed the ground, the better to deſtroy the roots of weeds, you ſhould make your furrows about ſix feet diſtance from each other, in which you ſhould lay the nuts about ten inches apart, covering them with earth about three inches deep; and when they come up, you muſt carefully clear them from weeds: the diſtance allowed between each row is for the uſe of the horſe-hoeing plough, which will diſpatch a great deal of this work in a ſhort time; but it ſhould be performed with great care, ſo as not to injure the young plants; therefore the middle of the ſpaces only ſhould be cleaned with this inſtrument, and a hand-hoe muſt be uſed to clean between the plants in the rows, and alſo on each ſide, where it will be unſafe for the plough to be drawn: and in hand-hoeing there muſt be great care taken not to cut the tender rind of the plants. If the following ſpring the ſpaces are carefully ſtirred with the plough, it will not only make the ground clean, but alſo looſen it, ſo as that the ſun and moiſture may more eaſily penetrate the ſame, which will greatly promote the growth of the plants; and the oftener theſe ploughings are repeated, the cleaner will be the ground, and the greater will be the progreſs of the plants, which cannot be kept too clean while they are young. When theſe have remained three or four years, (if the nuts ſucceed well) you will have many of theſe trees to remove, which ſhould be done at the ſeaſons before directed, leaving the trees about three feet diſtance in the rows; at which diſtance they may remain for three or four years more, when you ſhould remove every other tree to make room for the remaining, which will reduce the whole plantation to ſix feet ſquare, which will be diſtance enough for them to remain in until they are large enough for poles, when you may cut down every other of theſe trees, making choice of the leaſt promiſing, within a foot of the ground, in order to make ſtools for poles, which in eight or ten years time will be ſtrong enough to lop for hoops, hop-poles, &c. for which purpoſes they are preferable to moſt other trees; ſo that every tenth year here will be a freſh crop, which will pay the rent of the ground, and all other incumbent charges, and, at the ſame time, a full crop of growing timber left upon the ground: but as the large trees increaſe in bulk, their diſtance of twelve feet ſquare will be too ſmall; therefore when they have grown to a ſize for ſmall boards, you ſhould fell every other tree, which will reduce them to twenty-four feet ſquare, which is a proper diſtance for them to remain for good; this will give air to the underwood, which, by this time, would be too much overhung by the cloſeneſs of the large trees; by which means that will be greatly encouraged, and the ſmall timber felled will pay ſufficient intereſt for the money at firſt laid out in planting, &c. with the principal alſo: ſo that all the remaining trees are clear profit, for the underwood ſtill continuing, will pay the rent of the ground, and all other expences; and what a fine eſtate here will be for a ſucceeding generation, in about fourſcore years, I leave every one to judge.

[In making a plantation of Cheſtnut trees for the fruit, the ground ſhould have three or four plowings the preceding ſummer and winter; and if one good digging is added a little before planting, it will be a great improvement. Plant your trees in rows ſix feet diſtant every way, dig the ground annually, and when the branches begin to meet, take up every ſecond row, and every ſecond plant, which will leave all the trees at twelve feet diſtance, and the wood of the trees taken up will be very uſeful for many purpoſes. Having dug, or half trenched the land, if it is of a good quality, it may for ſome years be cultivated with potatoes, cabbages, turneps, &c. When the branches begin again to meet, they muſt be reduced as before, and left twenty-four feet aſunder; at which diſtance they may remain. The wood of this laſt felling will ſaw into ſmall boards, and being about twenty years old, muſt be rooted out, for the Cheſtnut ſhoots vigorouſly from ſtools. The remaining trees having produced fruit for ſeveral years, will now bear vaſt quantities, and make great returns of profit.

In raiſing Cheſtnut woods for timber, Mr. Boutcher adviſes for the firſt two years to take a line of beans between the drills: and at the end of two years, early in the ſpring, to remove every ſecond plant in the rows, which will leave them about two and a half feet aſunder, and at this diſtance let them remain three years. Then remove every ſecond row, and every ſecond tree in the remaining rows, which will leave them at the diſtance of eight feet by five. Theſe plants will be uſeful for ſtakes and poles. The ground may now be levelled and dug for any kitchen-garden crops. In february following cut them down, reſerving only the ſtraighteſt and moſt vigorous, at the diſtance of twenty-five or thirty feet. Dwarf crops may be taken between the rows for two years more, after which the trees will ſoon cover the ground.

Both he and Dr. Hunter prefer february to october for tranſplanting. Mr. Marſhall adviſes the nuts to be ſet by the dibble, ſix inches aſunder, in a quincunx order; becauſe drills ſerve as conductors to the field mouſe.

Mr. Hanbury contends for planting a Cheſtnut wood from the nurſery. He adviſes to plant out the trees when they are five feet high, becauſe they will not be ſo large as to require ſtaking, nor ſo ſmall as to be within the reach of hares, rabbets, &c. The diſtance to be two yards, which is far enough aſunder for poles: when they are big enough for this uſe, they ſhould be cut down, leaving a ſufficient number of the moſt thriving trees for timber: this will be in fourteen years: if they are cut within a foot of the ground, there will be ſtools for another crop in ten years more. If the plantation is large, the firſt fall of poles may be begun ſo early, and the latter deferred ſo late, that the year after the laſt fall the ſtools of the firſt cut poles ſhall have ſent forth others ready for a ſecond cutting. Thus the proprietor will enjoy the benefit of an annual ſale, and the country not be glutted with too great a quantity.

Mr. Hanbury prefers this method, becauſe when the tree is raiſed from the nuts, it is ſubject to a tap-root which ſtrikes beyond the reach of nouriſhment, and conſequently it grows ſlower; and becauſe while they are in the nurſery, a vaſt quantity will ſtand in a ſmall ſpace; whereas when they are raiſed from the nuts, the whole wood muſt be kept clear of weeds till the plants are grown of a ſufficient ſize to defend themſelves.

The Cheſtnut will thrive on almoſt all ſoils, and in all ſituations, if there be no ſtanding water; but beſt in a rich loamy land; it will ſucceed, however, very well on gravel, clay or ſand. All mixed ſoils ſuit it, as well as expoſed places, and the declivities of hills.]

In foreign countries, where the Cheſtnut is cultivated for the fruit, they graft cyons from trees bearing the largeſt and faireſt fruit, upon ſtocks raiſed from the nut. Theſe grafted trees are by the French called Marroniers, and are unfit for timber.

The varieties with ſtriped or blotched leaves are maintained by budding, and inarching upon common Cheſtnut ſtocks.

2. The nuts of the Chinquapine or dwarf Virginian Cheſtnut, ſhould be put up in ſand, in America, as ſoon as they are ripe, and ſent out immediately, otherwiſe they loſe their vegetating quality. When the nuts arrive, they ſhould be put into the ground as ſoon as poſſible, and if the winter ſhould prove ſevere, cover the ground with leaves, tan or peas-haulm, to prevent the froſt from penetrating to the nuts.

Beech.

The Beech-tree is propagated by ſowing the maſt, the ſeaſon for which is any time from october to february; only obſerving to ſecure the ſeeds from vermin when early ſowed: if this be carefully done, the ſooner they are ſown the better, after they are full ripe. [Since Beech-maſt, however, keeps very well, and it is greatly reliſhed by Field-Mice and other vermin, many planters prefer ſpring-ſowing; in which caſe the ſeeds ſhould be ſpread on a mat, in an airy place for a few days to dry, and then put up in bags.]

A ſmall ſpot of ground will be ſufficient for raiſing a great number of theſe trees from ſeed. They muſt be kept clean from weeds; and if they come up very thick, drawing the ſtrongeſt the autumn following: and thus if a ſeed-bed be huſbanded carefully, it will afford a three year's draught of young plants, which ſhould be planted in a nurſery; and, if deſigned for timber trees, at three feet diſtance row from row, and eighteen inches aſunder in the rows. But if they are deſigned for hedges, two feet row from row, and one foot in the rows will be ſufficient. In this nurſery they may remain two or three years; obſerving to clear them from weeds, and to dig up the ground between the rows, at leaſt once a year; but be careful not to cut or bruiſe the roots, and never to dig the ground in ſummer, when it is hot and dry.

The Beech will proſper on ſtony, barren ſoils; but then the nurſery for the young plants ought to be upon the ſame ſoil: for if they be raiſed in a good ſoil and a warm expoſure, and afterwards are tranſplanted into a bleak barren ſituation, they ſeldom thrive. See Nursery.

For hedges, the Beech may be kept in a regular figure, if ſheared twice a year, at leaſt when it ſhoots ſtrong: in which caſe, if the hedges are neglected but a ſeaſon or two, it will be difficult to reduce them again.

The varieties with ſtriped leaves may be continued by budding or grafting upon the common Beech: obſerving not to plant them in too good a ſoil, which will frequently cauſe the leaves to become plain.

[The above directions being in ſome reſpects imperfect, I have ſubjoined the following from Mr. Boutcher.

Being provided with maſt from the ſtraighteſt and freſheſt trees in ſeptember, as ſoon as the huſks are quite dry, mix them with ſand, and lay them under an old frame or other covering, to protect them from froſt and wet. The beginning of march ſow them in beds four feet wide, in ſhallow drills eighteen inches aſunder; covering them one inch deep: if the ſeaſon be dry, give them frequent but moderate waterings, from their appearance above ground till the middle of auguſt. In march, next ſeaſon, with a ſpade made very ſharp, undermine the roots, and cut them over between four and five inches under ground. The following autumn or ſpring, either raiſe the whole, or give them another cutting underground, when gently raiſing ſuch as are too thick, leave the remainder at proper diſtances, to ſtand another ſeaſon. Plant ſuch as you have raiſed, after ſmoothing the bruiſed and broken roots, and cutting away ſome of the ſmall hairy fibres, in lines two feet aſunder, and nine or ten inches in the line: here they may remain two, or if the land be poor, three years. Next autumn or ſpring, treat the reſt in like manner. Trim off only croſs ill-placed branches, and thoſe ſparingly. From this nurſery they muſt be removed to another, and planted in rows three feet and a half aſunder, and eighteen inches in the row: here they may remain three years; in poor land four; obſerving always to prune moderately at removal, and to leave abundance of ſmall branches.

Now theſe plants will be fit for common and extenſive plantations: but ſuch as are deſigned for removal when large trees, muſt again be tranſplanted in rows five feet aſunder, and two feet diſtance in the rows, to remain in good ground three, in poor four years. From this remove them again into rows eight feet aſunder, and ſix feet in the row, to remain four years. If required of a ſtill larger ſize, plant them ten feet aſunder every way.

Mr. Young informs us, in his Iriſh tour, that Mr. Mahon made a plantation of all ſorts of foreſt trees in his park, in order to ſee how far the deer would let them eſcape. They devoured every tree except the Beech, not one of which they touched, either leaf, branch, or bark. Many of his Beeches, not more than thirty years growth, were three or four feet in girt, and from thirty to forty feet high.

Fagus. See *Carpinus* and *Tetracera*.

Fair Maids of Kent. See *Ranunculus*.

Falcaria. See *Sium*.

Falcata. See *Medicago*.

FALKIA. (*So named by Thunberg in honour of Jo. Petr. Falck, Profeſſor at Peterſburgh.*)

Lin. gen. Schreb. n. 611. *Thunb. nov. gen.* 17. *Lin. ſuppl.* 30. *Juſſ.* 132.

Claſſ. 5. 2. Pentandria Digynia.

Nat. order of *Campanaceæ.—Borragineæ.* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, ſomewhat inflated, five-cornered, ſhorter by half than the corolla, five-parted: *angles* widened in the middle, compreſſed, ſtanding out; diviſions ovate, acute.

Cor. one-petalled, bell-ſhaped, crenate-ten-parted: *border* ſpreading.

Stam. *Filaments* five, filiform, inſerted into the tube of the corolla, erect, unequal, ſhorter than the corolla. *Anthers* ovate, compreſſed.

Pist. *Germs* four, ſuperior, ſmooth. *Styles* two, capillary, divaricate, the length of the corolla. *Stigmas* capitate, obtuſe, ſimple, (orbiculate, peltate.)

Per. none.

Seeds four, globular, arilled, at the bottom of the calyx.

Obs. *This genus is allied to* Convolvulus; *having the flower of the ſame ſtructure, but differing in the ſeed.*

ESSENTIAL CHARACTER.

Cal. bell-ſhaped, five-cleft. *Cor.* bell-ſhaped. *Stigmas* orbicular peltate. *Seeds* four, arilled.

SPECIES.

1. Falkia repens. *Creeping Falkia.*
Lin. ſyſt. 345. *ſuppl.* 211.

DESCRIPTION, &c.

Falkia reſembles Convolvulus in the herb and ſtructure of the flower; but it differs totally in the ſeed.—Native of the Cape of Good Hope; obſerved there by Thunberg[a], and Maſſon. Introduced in 1774. It is perennial, and flowers from may to auguſt[b].

PROPAGATION AND CULTURE.

This is generally increaſed by parting the roots, planting in loamy earth, and watering freely in ſummer.

Fan Palm. See *Chamærops* and *Thrinax*.

Farfara. See *Tuſſilago*.

Farsetia. See *Cheiranthus*.

Feather, Prince's. See *Amaranthus*.

Feathered Columbine. See *Thalictrum*.

Feather Grass. See *Stipa*.

Felfel Tauil. See *Cynanchum*.

Felwort. See *Gentiana*.

Female Fern. See *Pteris*.]

FENCES. In hotter climates than England, where they have not occaſion for walls to ripen their fruit, their gardens lie open, where they can have water fence and proſpects; or elſe they bound their gardens with groves, in which are fountains, walks, &c. which are much more pleaſing to the ſight than a dead wall: but in colder countries, and in England, we are obliged to have walls to ſhelter and ripen our fruit, although they take away much from the pleaſant proſpect of the garden.

Since therefore we are under a neceſſity to have walls to ſecure our gardens from the injury of winds, as well as for the conveniency of partitions or incloſures, and alſo to ripen our fruit, brick walls are accounted the warmeſt and beſt for this purpoſe: and theſe walls being built pannel-ways, with pillars at equal diſtances, will ſave a great deal of charge, becauſe the walls may be built thinner, than if they were built plain without theſe pannels, for then it would be neceſſary to build them thicker every where: and beſides, theſe pannels make the walls look the handſomer.

Stone walls are by ſome preferred to thoſe of brick, eſpecially thoſe of ſquare hewn ſtones; but where they are deſigned for fruit, they ſhould be faced with brick. Thoſe that are made of rough ſtones, though they are very dry and warm, yet, by reaſon of their unevenneſs, are inconvenient to nail up trees to, except pieces of timber be laid in them here and there to faſten a trellis to them.

But in large gardens it is better to have the proſpect open to the pleaſure-garden, which ſhould be ſurrounded with a foſſe, that from the garden the adjacent country may be viewed, but this muſt depend on the ſituation of the place; for if the proſpect from the garden is not good, it had better be ſhut out from the ſight by a wall, or any other fence, than to be open. As alſo, where a garden lies near a populous town, and the adjoining grounds are open to the inhabitants, if the garden is open, there will be no walking there in good weather, without being expoſed to the view of all paſſengers, which is very diſagreeable.

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[a] Linn. ſuppl.

[b] Hort. kew.

Where theſe foſſes are made round a garden which is ſituated in a park, they are extremely proper; becauſe hereby the proſpect of the park will be obtained in the garden, which renders theſe gardens much more agreeable than thoſe which are confined.

In the making theſe foſſes there have been many inventions; but, upon the whole, I have not ſeen any which are in all reſpects preferable to thoſe which have an upright wall next the garden; which (where the ſoil will admit of a deep trench) ſhould be ſix or ſeven feet high, ſo as to be above the reach of boys; and from the foot of this wall, the ground on the outſide ſhould riſe with a gradual eaſy ſlope to the diſtance of eighteen or twenty feet; and where it can be allowed, if it ſlopes much farther, it will be eaſier and leſs perceptible as a ditch to the eye, when viewed at a diſtance. But if the ground is naturally wet, ſo as not to admit of a deep foſſe, then, in order to make a fence againſt cattle, if the wall be four feet high, and ſlight poſts of three feet and a half high are placed juſt behind the wall, with a ſmall chain carried on from poſt to poſt, no cattle or deer will ever attempt to jump againſt it, therefore it will be a ſecure fence againſt them; and if theſe are painted of a dark lead colour, they will not be diſcerned at a diſtance: and at the ſame time the chain will ſecure perſons walking in the garden from tumbling over: and if another chain is carried through the poſts at one foot from the ground, it will more effectually prevent cattle from creeping under.

In ſuch places where there are no good proſpects to be obtained from a garden, it is common to make the incloſure of park-paling; which, if well performed, will laſt many years, and has a much better appearance than a wall: and this pale may be hid from the ſight within, by plantations of ſhrubs and Evergreens; or there may be a Quick hedge planted within the pale, which may be trained up, ſo as to be an excellent fence by the time the pales begin to decay.

There are ſome perſons who make ſtockade fences round their gardens to keep out cattle, &c. which, when well made, will anſwer the purpoſe of a fence; but theſe being very expenſive in the making, and not of very long duration, has occaſioned their not being more commonly in uſe.

As to fences round parks, they are generally of paling; which, if well made of winter-fallen Oak, will laſt many years; but a principal thing to be obſerved in making theſe pales, is not to make them too heavy; for when they are ſo, their own weight will cauſe them to decay; therefore the pale ſhould be cleft thin, and the rails ſhould be cut triangular, to prevent the wet lodging upon them; and the poſts ſhould be good, and not placed too far aſunder, burning that part of them which goes into the ground. If theſe things are obſerved, one of theſe pales will laſt, with a little care, upward of forty years very well. The common way of making theſe fences is, to have every other pale nine or ten inches above the intermediate ones; ſo that the fence may be ſix feet and a half high, which is enough for fallow deer; but where there are red deer, the fence ſhould be one foot higher, otherwiſe they will leap over.

Some incloſe their parks with brick walls; and in countries where ſtone is cheap, the walls are built with this material; ſome with, and others without mortar.

A kitchen-garden, if rightly contrived, will contain walling enough to afford a ſupply of ſuch fruits as require the aſſiſtance of a wall for any family; and this garden being ſituated on one ſide, and quite out of ſight of the houſe, may be ſurrounded with walls, which will ſcreen the kitchen-garden from the ſight of perſons in the pleaſure-garden; and being locked up, the fruit will be much better preſerved than it can be in the public garden: and the having too great a quantity of walling is often the occaſion that ſo many ſcandalous trees are frequently to be ſeen in large gardens, where there is not due care obſerved in their management.

And beſides, the borders of pleaſure-gardens are generally too narrow for the roots of fruit-trees, as will be ſhewn in its proper place, therefore it is in vain to plant them there.

The height of garden-walls ſhould be from ten to twelve feet, which is a moderate proportion; and if the ſoil be good, it may in time be well furniſhed with bearing wood in every part, eſpecially thoſe parts planted with Pears, notwithſtanding the branches being trained horizontally from the bottom of the walls.

I would recommend the White Thorn, the Holly, the Black Thorn and Crab, for outward fences to a good ground, but I do not approve of the intermixing them.

The White Thorn is the beſt quick to plant, becauſe it is the moſt common, and may be clipped ſo as to render it the cloſeſt and hardieſt fence of any other tree; and being very durable, is preferred to all others for outward fences, or for the diviſion of fields, where they are expoſed to cattle, &c.

The Black Thorn and Crab make very good fences, and are to be raiſed as the White Thorn; but if the kernels of Apples or Crabs be ſown, it is beſt to ſow the pommace with them, and they will come up the ſooner, *i. e.* the firſt year, if ſown in the autumn, ſoon after the fruit is ripe.

If Crab-ſtocks be planted while young, in the ſame manner as quick, they make excellent hedges ſoon, and ſo will ſome ſorts of Plums, I mean ſuch as have thorns.

The Black Thorn is not accounted ſo good for fences as the White Thorn, becauſe it is apt to run more into the ground, and is not certain as to the growing, eſpecially if the plants are not ſet very young; but then on the other hand, the buſhes are by much the better, and are alſo more laſting than the White Thorn, or any other, for dead hedges, or to mend gaps; nor are they ſubject to be cropt by cattle, as the others are. The richer the mould is, the better they will proſper, but yet they will grow on the ſame ſort of ſoil that the White Thorn does.

The Holly will make an excellent fence, and is preferable to all the reſt, but is a ſlow grower; but when once it does grow, it makes amends by its height, ſtrength, and thickneſs.

It is raiſed of young ſeedling plants or berries, as the White Thorn is, and the berries will lie as long in the ground before they come up. It delights moſt in ſtrong grounds, but will grow upon the drieſt gravel, amongſt rocks and ſtones.

French Furze will alſo do well upon dry ſandy banks, where few other plants will grow; but they muſt be kept very clean at the bottom, and cut thin, and never ſuffered to grow too high, nor ſhould they be cut in dry weather, or late in autumn, nor early in the ſpring; the doing either of which is ſubject to make it die in patches, which is irrecoverable; nor will it ever break out again from old wood, if cut cloſe in, after it has been ſuffered long to grow out.

Fences may likewiſe be made of Elder; if the ſoil be any thing good, you may put ſticks of Elder, or truncheons ten or twelve feet long, ſlopeways in your banks, ſo as to make a chequer-work; and they will make a fence for a garden the quickeſt of any thing, and be a good ſhelter. But theſe fences are improper for a fine garden, becauſe they ſhoot very irregular, and are ungovernable; as likewiſe the roots of theſe trees ſpread very far, and draw away all the heart of the ground, ſo as to ſtarve whatever plants grow near them: and add to this the ſcattering of the berries, which will fill the ground near them with young plants; which, if not timely weeded out, will get the better of whatever grows near them; therefore this ſort of fence is ſeldom planted, where a hedge of White Thorn can be had.

Elder planted on a bank, the ſide of which is waſhed with a river or ſtream, will make an extraordinary fence, and will preſerve the bank from being undermined by the water, becauſe it is continually ſending ſuckers from the roots and lower branches, which is of great advantage where the ſtream waſhes away the bank.

For middle fences in a garden, the Yew is the moſt tonſile, governable, and durable plant.

For ſurrounding wilderneſs quarters, Elm, Lime, Hornbeam and Beech, are very proper.

See more on this ſubject under Hedges.

Fennel. See *Anethum.*

Fennel-Flower. See *Nigella.*

[—— Giant. See *Ferula.*

——, Hog's. See *Peucedanum.*

Fenugreck. See *Trigonella.*

Fern. See *Filix.*

—— Female. See *Pteris.*

—— Flowering. See *Oſmunda.*

—— Male. See *Polypodium Filix mas.*

—— Mule. See *Hemionitis.*

—— Stone. See *Oſmunda criſpa.*]

—— Sweet. See *Scandix.*

FERRARIA. (*In honour of John Bapt. Ferrarius, a learned Jeſuit; by whom the firſt ſpecies was deſcribed and well figured in his Flora, ſ. de florum Cultura,* 1633.—*Heſperides, Amſt.* 1646.)

Lin. gen. n. 1018. *Reich.* 1104. *Schreb.* 1102. *Burmann. Juſſ.* 57.

Claſſ. 20. 2. Gynandria Trigynia.

Nat. order of *Enſatæ.*—*Irides* Juſſ.

GENERIC CHARACTER.

Cal. *Spathes* two, alternate, keeled, involute; each one-flowered.

Cor. *Petals* ſix, oblong, acuminate, revolute, curled and fringed: alternately ſmaller.

Stam. *Filaments* three, ſitting on the ſtyle. *Anthers* roundiſh, twin, rough-hairy.

Pist. *Germ* inferior, roundiſh, three-cornered, obtuſe. *Style* ſimple, erect. *Stigmas* three, bifid, cowled, fringed and curled.

Per. *Capſule* oblong, three-cornered, thicker at top, three-celled, three-valved.

Seeds numerous, roundiſh.

Obs. *This genus, according to Thunberg, ſhould be referred to* Moræa.

ESSENTIAL CHARACTER.

One-ſtyled. *Spathes* one-flowered. *Petals* ſix, waved and curled. *Stigmas* cowled. *Capſ.* three-celled, inferior.

SPECIES.

1. Ferraria undulata. *Cape Ferraria.* *Lin. ſpec.* 1353. *ſyſt.* 820. *Reich.* 4. 43. *Mill. fig.* 187. *t.* 280. *Curt. magaz.* 144. *Jacq. hort. t.* 63. *Barr. ic.* 1216. (Iris). *Rudb. elyſ.* 2. 49. *f.* 9. (Narciſſus). *Ferr. cult.* 168. *t.* 171. *Mor. hiſt.* 2. 344. *ſ.* 4. *t.* 4. *f.* 7. (Gladiolus). *Stem many-flowered.*

[2. Ferraria pavonia. *Mexican Ferraria.* *Lin. ſyſt.* 820. *ſuppl.* 407. *Mutis amer.* 1. *t.* 15. *Hern. mex.* 276. *Swert. flor.* 2. *t.* 31. *f.* 2. (Flos Tigris). *Scape one-flowered.*]

DESCRIPTIONS, &c.

1. Root tuberous, roundiſh, compreſſed, in ſhape like that of the Indian Corn-flag, but larger, in the centre of the upper ſide it has a hollow like a navel, whence comes out the ſtalk; the outer ſkin is of a light brown colour, the inſide is white. It lies inactive every other year, and ſometimes will remain two years without putting out either leaves or fibres. Stem a foot and half high, taper and about the thickneſs of a man's little finger. It has lanceolate leaves the whole length, placed alternately, and embracing: the lower leaves are from four to five inches long, and an inch and half broad towards their baſe, ending in obtuſe points; they are a little keel-ſhaped, and of a light-green colour. Flowers axillary, ſolitary, from the upper part of the ſtem, wrapped in a double ſheath, out of which the flower-bud riſes about an inch. The ſheath is compoſed of a double row of keel-ſhaped leaves; the inner row being ſhorter than the outer, and ſituated obliquely to it. The petals are of a pale ſky-blue on the inſide, and of a dirty white on the outſide. The anthers are ſituated below the diviſion of the filaments, and are terminated by ſmall ſilky hairs.

[This is one of the moſt ſingular and beautiful vegetable productions; and it is much to be regretted that its flowers are of very ſhort duration, opening in the morning, and finally cloſing in the afternoon of the ſame day; a ſtrong plant will, however, throw out many bloſſoms in ſucceſſion. By its ſtructure and œconomy, it approaches very near to the *Siſyrinchium.* It flowers from february to may[a].

Native of the Cape of Good Hope. Cultivated in 1759, by Mr. Miller, to whom it was ſent by Dr. Job Baſter of Zirkzee.—Mr. Curtis's figure was drawn from a plant which flowered in 1791, in the poſſeſſion of R. Forſter, Eſq. of Turnham Green.

Mr. Miller's ſecond ſort (F. enſiformis) may perhaps be no more than a variety of this.] It differs from it in having ſmaller roots, and longer ſword-ſhaped leaves, which have deeper veins; the ſtalk alſo does not divide ſo much, the flowers are ſmaller, and leſs fringed on their borders.

[2. Root bulbous. Scape a ſpan high, one-flowered. Leaves ſheathing, one or two; the lower ones longer and narrower. Spathe two-leaved, compreſſed. Corolla bell-ſhaped; the three outer petals larger, ovate, at the tip a little truncate with a minute dagger point; the three inner one-third of the ſize, alternate, haſtate, ſubſeſſile, ſpotted. Filaments ſheathing the ſtyle: anthers three, linear, nearly the length of the ſtigmas. Germ pedicelled. Stigmas two-parted, filiform. Capſule linear.

Native of Mexico, where it was obſerved by Mutis[b].]

PROPAGATION AND CULTURE.

They are both propagated by offſets ſent out from the roots, in the ſame way as the Ixia, and ſhould be cultivated in the ſame manner as is directed for thoſe and the African Gladiolus, being too tender to thrive in the open air in England, nor do they ſucceed well in a green-houſe; therefore the beſt method is, to make a border four feet wide, either in the front of the green-houſe or ſtoves; covering it with a proper frame and glaſſes, ſo that the plants may enjoy the free air in mild weather, but be protected from froſt. In ſuch a frame, moſt of the African bulbous and tuberous rooted plants may be brought to great perfection.

[FERREOLA. *From Ferrum, iron; on account of the hardneſs of the wood.*)

Roxb. corom. 35. *n.* 45.

Claſſ. 22. 6. Dioecia Hexandria.

GENERIC CHARACTER.

Male.

Cal. *Perianth* one-leafed, a little ventricoſe, hairy, three-cleft: clefts ovate, acute, erect, ſhorter than the tube, the third ſtill ſhorter and blunter.

Cor. one-petalled, tubular, ſmooth, ſomewhat fleſhy: border three-cleft: clefts erect, acute, hirſute on the outſide with long white hairs, preſſed cloſe, within naked.

Stam. *Filaments* ſix (five, ſeldom more, *K.*) ſhort, inſerted round a ſemigloboſe receptacle, upright, much ſhorter than the tube of the corolla. *Anthers* oblong, acute, erect, white, longer than the filaments.

Female.

Cal. and Cor. as in the male.

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[a] Curtis.

[b] Linn. ſuppl.

Pist. *Germ* oval, (linear-oblong, *K.*) *Style* ſhort, (longer than the calyx, *K.*) *Stigma* flat, three-notched, (divided into ſmall lobes, commonly four, *K.*)

Per. *Berry* round, ſmooth, red, pulpy, ſize of a large pea.

Seeds two, large, on one ſide flat, on the other round.

ESSENTIAL CHARACTER.

Cal. one-leafed, three-cleft. *Cor.* one-petalled, three-cleft.

Male. *Filaments* ſix, inſerted into a ſemigloboſe receptacle.

Fem. *Germ* oval. *Berry* round, ſmooth, two-ſeeded.

SPECIES.

1. Ferreola buxifolia.
Roxb. corom. 35. *n.* 45. *t.* 45.
Ehretia ferrea. *Willden. phytogr.* 1. *p.* 4. *t.* 2. *f.* 2.
Piſonia? buxifolia. *Rottboell in nov. act. Hafn.* 2. 536. *t.* 4. *f.* 2.
Piſhanna of the Telingas.
Irumbilli of the Tamuls. *Koenig.*

DESCRIPTION, *&c.*

Trunk irregular, covered with a dark ruſt-coloured bark, dividing into very numerous irregular branches. Leaves alternate, ſhort-petioled, oval, entire, very ſmooth, ſhining, firm, about half or three quarters of an inch long, and half an inch broad.

Among the mountains this grows to a ſmall tree, but in the low countries it is only a ſhrub. It flowers during the hot ſeaſon. The berries, when ripe, are univerſally eaten, and are very well taſted. The wood is dark-coloured, remarkably hard and durable, and where its ſize will admit, is employed for ſuch uſes as require the moſt durable, heavy wood. Native of Coromandel[c].]

FERŬLA, (*of Pliny. Either a ferendo, becauſe the ſtalk was uſed for a walking-ſtick; or a feriendo, becauſe ſchoolmaſters uſed it for ſtriking boys on the hand, whence Martial calls it Sceptrum pædagogorum.*)

Eng. *Fennel-Giant.* Fr. *Ferule.*

Lin. gen. n. 343. *Reich.* 373. *Schreb.* 475. *Tournef.* 170. *Juſſ.* 222. *Gærtn. t.* 85.

Claſſ. 5. 2. Pentandria Digynia.

Nat. order of *Umbellatæ* or *Umbelliferæ.*

GENERIC CHARACTER.

Cal. *Umbel univerſal* manifold, globular: *partial* ſimilar. *Involucre univerſal* caducous: *partial* many-leaved, linear, ſmall. *Proper perianth* ſcarcely obſervable.

Cor. *Univerſal* uniform: *floſcules* all fertile: *proper* conſiſting of five oblong, ſtraightiſh petals, nearly equal in ſize.

Stam. *Filaments* five, the length of the corolla. *Anthers* ſimple.

Pist. *Germ* turbinate, inferior. *Styles* two, reflex. *Stigmas* obtuſe.

Per. *Fruit* oval, plane-compreſſed, ſubmargined, marked on both ſides with three raiſed lines, and bipartile.

Seeds two, very large, elliptic, flat on both ſides, and marked with three diſtinct ſtreaks.

Obs. *The peduncle of the primary umbel admits oppoſite lateral peduncles.*

ESSENTIAL CHARACTER.

Fruit oval, plane-compreſſed, with three ſtreaks on each ſide.

SPECIES.

1. Ferula communis. *Common Fennel-Giant.*
Lin. ſpec. 355. *Reich.* 1: 682. *hort. cliff.* 95. *upſ.* 61.
Ferula. *Dod. pempt.* 321. *Ger.* 898. *emac.* 1056. *Riv. pent. t.* 9.—femina Plinii. *Bauh. pin.* 138. *Mor. umb.* 35. *t.* 2. *hiſt.* 3. 309. *ſ.* 9. *t.* 15. *f.* 3.—tenuiore folio. *Park. theat.* 875.—fol. foeniculi, ſem. latiore & rotundiore. *Bauh. hiſt.* 3. 43. *Raii hiſt.* 420.
Leaflets linear very long ſimple.

2. Ferula glauca. *Glaucous Fennel-Giant.*
Lin. ſpec. 355. *Reich.* 682. *hort. cliff.* 95.
F. fol. glauco, ſem. lato oblongo. *Bauh. hiſt.* 3. 45. *Raii hiſt.* 420. See the 4th ſpecies.
Leaves ſuperdecompound, leaflets lanceolate-linear flat.

3. Ferula tingitana. *Tangier Fennel-Giant.*
Lin. ſpec. 355. *Reich.* 682. *hort. cliff.* 95. *upſ.* 61. *Gærtn. fruct.* 2. 28. *Riv. pent. t.* 10. *Herm. par. t.* 165. *Mor. hiſt.* 3. 309.
Leaflets laciniate, the little jags three-toothed, unequal, brilliant.

4. Ferula Ferulago. *Broad-leaved Fennel-Giant.*
Lin. ſpec. 356. *Reich.* 682. *hort. cliff.* 95.
F. latiore folio. *Mor. hiſt.* 3. 309. *ſ.* 9. *t.* 15. *f.* 1.
F. fol. glauco, &c. *Raii hiſt.* 420. *n.* 2.
Ferulago lat. fol. *Bauh. pin.* 148.
Leaves pinnatifid, pinnas linear flat trifid.

5. Ferula orientalis. *Narrow-leaved Fennel-Giant.*
Lin. ſpec. 356. *Reich.* 682. *hort. cliff.* 95. *Tourn. itin.* 2. *t.* 379.
Pinnas of the leaves naked at the baſe, leaflets briſtle-form.

6. Ferula meoides.
Lin. ſpec. 356. *Reich.* 683. *hort. cliff.* 95.
Pinnas of the leaves appendicled on each ſide, leaflets briſtle-form.

7. Ferula nodiflora. *Knotted Fennel-Giant.*
Lin. ſpec. 356. *Reich.* 683. *hort. upſ.* 61. *Scop. carn. n.* 337. *Jacqu. auſtr.* 5. 28. *app. t.* 5.
Libanotis ferulæ fol. & ſemine. *Bauh. pin.* 158. *Park. theat.* 881. *f.* 2. 882. *Bauh. hiſt.* 3. 41. *fig. Raii hiſt.* 421. 4.
Panax aſclepium, ferulæ facie. *Lob. ic.* 783. *Ger. emac.* 1057. *f.* 3.
Leaflets appendicled, umbels ſeſſile.

[8. Ferula canadenſis.
Lin. ſpec. 356. *Reich.* 683. *hort. upſ.* 61. *Gron. virg.* 147. *edit. oct.*
Lucid.

9. Ferula Aſſa-fœtida.
Lin. ſpec. 356. *Reich.* 683. *mat. med.* 79. *Plenck, ic. t.* 203. *Woodv. med. bot.* 22. *t.* 8. *Kæmpf. amœn.* 535. *t.* 536. *Hope in Philoſ. tranſ.* 75. *p.* 36.
Leaves alternately ſinuate obtuſe.

DESCRIPTIONS, *&c.*

Theſe are herbaceous umbellate plants, ſome of them with large lofty ſtems; the leaves pinnate and ſuperdecompound: ſeveral lateral umbels ſpring from the peduncle of the principal one that terminates the ſtem.]

1. Common Fennel-Giant, if planted in a good ſoil, will grow to a great height, and divide into many branches. The lower leaves ſpread more than two feet every way, and branch out into many diviſions, which are again ſubdivided into many ſmaller; they are of a lucid green, and ſpread near the ground. From the centre of the plant comes out the flower-ſtem, which when the plants are ſtrong, will be near as large as a common broom-ſtick, and ten or twelve feet high, with many joints; there iſſues from it, when cut, a fetid yellowiſh liquor, which will concrete on the ſurface of the wound. This ſtem is terminated by large umbels of yellow flowers, which come out at the end of june or the beginning of july. The ſeeds ripen in ſeptember, and the ſtalk decays ſoon after; when this is dry, it is full of a light pith which eaſily takes fire. The Sicilians uſe it for tinder. Hence the fable of Prometheus. The leaves decay ſoon after the ſeeds are formed; but the roots continue ſeveral years, eſpecially in a dry ſoil, and annually produce flowers and ſeeds.—[Native of Italy, Sicily, the South of France, Greece, *&c.* In Apulia, where it grows in great plenty, it is grateful to the buffaloes, which form the chief part of the ſubſtance of many farmers there. When it becomes of a conſiderable ſize they uſe it to make ſtools and bee-hives[a].

It was cultivated by Gerarde before 1597: and he informs us that it attained to the height of fourteen or fifteen feet in his garden, growing greater and fairer than in the places whence it came.]

2. The leaves are compoſed of many narrow flat ſegments, of a gray colour, and are divided into

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[c] Roxburgh.

[a] Symonds in Young's Annals.

many parts. Stem from three to four feet high, terminated by an umbel of yellow flowers, appearing in July, and ſucceeded by oval compreſſed ſeeds, ripening in autumn.

Native of Spain, Italy, and Sicily. Cultivated in 1768, by Mr. Miller[b].]

3. Leaves large ſpreading near the root, of a very lucid green, divided and ſubdivided into many parts; leaflets much broader than in the other ſorts, and divided at the end into three unequal ſegments. Stems ſtrong, eight or ten feet high, terminated by large umbels of yellow flowers. [Fruit lenticular-bracted, ecalycled, of a dirty bay colour. Seeds of the ſame form, foliaceous-compreſſed, very ſlightly convex on one ſide, ſurrounded with a narrow rim, flat on the other or ſcarce ſenſibly concave, without ſtreaks or rim[c].

It is a native of Spain and Barbary; and was cultivated in 1683, by Mr. James Sutherland[d].]

4. Height ſeven or eight feet. The leaves branch out on every ſide pretty wide, and the leaflets are broader than thoſe of the other ſorts, except the preceding; but they are longer than thoſe, and of a darker green colour, ending in three points. The umbels are large, and the flowers are yellow.

Native of Sicily.

5. This is of much humbler growth than either of the former; the ſtalks ſeldom riſing much more than three feet high. The lower leaves branch into many diviſions, with fine briſtle-ſhaped leaflets. The umbel of flowers and the ſeeds are ſmall.

Found in the Levant by Tournefort.

6. This has very branching leaves, with angular channelled foot-ſtalks. At every joint are two oppoſite branches; thoſe towards the bottom are nine or ten inches long, and the others diminiſh gradually to the top: theſe ſide-branches ſend out ſmaller ones at each joint in the ſame manner, having very fine leaves on them, like thoſe of Spignel or *Meum*, ſtanding quite round in ſhape of whorls. The flower-ſtalks are three feet high, having a pretty large umbel of yellow flowers at the top: theſe are ſucceeded by oval flat ſeeds, which ripen in the autumn.

Native of the Levant.

7. This is about three feet high. The leaves are much divided, and the leaflets are very narrow and entire. Umbels ſmall, and cloſe to the ſtalks between the leaves at the joints.

[The extreme divaricate ramifications of the leaves ſuſtain acceroſe leaflets uſually in threes. Four umbels come out from each joint of the ſtem; theſe are peduncled and not ſeſſile. Involucres very ſhort and reflex. Rays of the univerſal umbel to fourteen, of the umbellule to twelve. Petals yellow[e].

Native of Iſtria, Auſtria, and Carniola. Theſe were all cultivated in 1759, by Mr. Miller[f].

8. See Angelica lucida; from which however the ſpecimen in Gronovius's herbarium, now in the poſſeſſion of Sir Joſeph Banks, is very different.

9. The Aſafœtida, as deſcribed by Dr. Hope, is an umbelled plant, three feet high, upright, branched, glaucous, with a yellow flower. Root perennial. Root-leaves ſix, procumbent, three-lobed-ovate, many times pinnate; leaflets gaſhed, ſubacute, ſubdecurrent; common petiole flat above, with a raiſed line running longitudinally through the middle of it. Stem two feet high, roundiſh, annual, ſlightly ſtreaked, having only one pair of imperfect leaves about the middle: branches naked, ſpreading; the three lower ones alternate and ſupported by the concave membranaceous petiole of the imperfect leaf; the four middle ones are in whorls; the uppermoſt from the top of the ſtem, eight in number, the inner ones erect: all theſe ſupport a a compound ſeſſile terminating umbel, beſides from three to ſix branchlets placed on the outſide, bearing the compound umbels: in this manner the lower branches ſupport five, ſeldom ſix branchlets, the middle ones three or four, the upper ones one or two. The univerſal umbel has from twenty to thirty rays; the partial from ten to twenty, with ſubſeſſile florets. There is no involucre, either general or partial. The florets of the ſeſſile umbel are fertile, of the peduncled umbel moſtly abortive. Petals equal, flat, ovate; at firſt ſpreading, then reflex, with the tip aſcending. Filaments awl-ſhaped, longer than the corolla, curved in: anthers roundiſh. Fruit oblong.—Every part of the plant, when wounded, poured out a rich milky juice, reſembling the imported drug in ſmell and taſte, and at times a ſmell like Garlick, ſuch as a faint impregnation of Aſafœtida yields, was perceivable at the diſtance of ſeveral feet.

Though Aſafœtida has been uſed in medicine for many ages, having been introduced by the Arabian phyſicians near a thouſand years ago, yet there was no ſatisfactory account of the plant which yielded it, till Kæmpfer deſcribed and figured it in his Amoenitates Exoticæ, publiſhed in 1712.

Kæmpfer travelled over a great part of Aſia towards the end of the laſt century, and was in Perſia, upon the ſpot where this drug is collected. His plant differs in many reſpects from that which is deſcribed above; but his fidelity having never been impeached, we muſt conclude that this gum, like ſeveral others, is the produce of more than one ſpecies[g].

According to Kæmpfer, the root of the Aſafœtida is perennial, tapering, ponderous, increaſing to the ſize of a man's arm or leg, covered with a blackiſh bark, and near the top beſet with many ſtrong rigid fibres; the internal ſubſtance is white, fleſhy, and abounds with a thick milky juice, yielding an exceſſively ſtrong fetid alliaceous ſmell. Stem ſimple, erect, ſtraight, round, ſmooth, ſtriated, herbaceous, ſix or ſeven inches in circumference at the baſe, and riſing luxuriantly to the height of two or three yards or more. Root-leaves ſix or ſeven, near two feet long, bipinnate, pinnules alternate, ſmooth, variouſly ſinuated, lobed, and ſometimes lanceolate, of a deep green colour and fetid ſmell. Umbels compound, plano-convex, terminating, many-rayed. Seeds oval, flat, foliaceous, reddiſh brown, rough, marked with three longitudinal lines, having the garlick ſmell, and a ſharp bitter taſte.

It varies much from ſoil and ſituation, not only in the form of the leaves, but in the quality of the juice[h].

It is a native of Perſia; and was raiſed from ſeeds, ſent from the mountains of Ghilan, by Dr. Pallas at Peterſburgh. Dr. Guthrie ſent thence two of the roots to Dr. Hope, one of which grew, flowered and ſeeded in the botanic garden at Edinburgh in 1782[i].

Aſafœtida is the concrete juice of the root, and is procured by the peaſants who live in the neighbourhood of the mountains in the provinces of Choraſaan and Laar in Perſia.—When the leaves begin to decay, the oldeſt plants are ſelected, not leſs than four years ſtanding. The earth is partly cleared away, ſo as to expoſe the upper part of the root. The leaves and ſtem are twiſted off, and uſed as a covering to ſcreen it from the ſun. In this ſtate the root is left forty days, when the covering being removed, the top of the root is cut off tranſverſely. It is then ſcreened again for forty-eight hours, when the juice is ſcraped off, and expoſed to the ſun to harden. This done, a ſecond ſection is made, the ſcreen again employed, and the juice obtained a ſecond time as before. Thus the Aſafœtida is eight times repeatedly collected from the ſame root; but after the third ſection, it remains eight days to recover a ſufficient ſtock of juice.

Aſafœtida is well known by its peculiar nauſeous fetid ſmell, the ſtrength of which is the ſureſt teſt of its goodneſs. This odour is extremely volatile, and of courſe the drug loſes much of its efficacy in keeping. It comes in large irregular maſſes, compoſed of various ſhining little lumps or grains, partly whitiſh, partly browniſh or reddiſh, and partly of a violet hue: thoſe are accounted the beſt which are clear, of a pale reddiſh colour, and variegated with many fine white tears. It is a gummy-reſin, but has the gum in largeſt quantity.

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[b] Hort. kew.
[c] Gærtner.
[d] Hort. kew.
[e] Scopoli.
[f] Hort. kew.

[g] Philoſ. Tranſact.
[h] Woodville.
[i] Philoſ. Tranſ.

It is the moſt efficacious of the fetid gums; and is commonly uſed in hyſteria, hypochondriaſis, ſome ſymptoms of dyſpepſia, flatulent cholics, and moſt diſeaſes termed nervous: it is thought to be the moſt powerful remedy we poſſeſs for thoſe peculiar convulſive and ſpaſmodic affections which often recur in hyſterics. It is recommended as an emmenagogue, anthelminthic, expectorant, antiaſthmatic, and anodyne[k].]

PROPAGATION AND CULTURE.

All theſe ſorts have roots which will continue ſeveral years; theſe have thick ſtrong fibres, which run deep in the ground, and divide into many ſmaller, ſpreading to a conſiderable diſtance every way: the ſtalks are annual, and decay ſoon after they have perfected their ſeeds. As theſe plants ſpread very wide, ſo they ſhould have each four or five feet room; nor ſhould they ſtand near to other plants, for their roots will rob whatever plants grow near them of their nouriſhment.

They are all propagated by ſeeds, which ſhould be ſown in the autumn; for if they are kept out of the ground till the ſpring, they frequently fail, and thoſe which ſucceed remain a year in the ground, ſo that much time is loſt. The ſeeds may be ſown in drills, by which method the ground may be eaſier kept clean; they muſt not be nearer than a foot row from row, and the ſeeds may be ſcattered two or three inches aſunder in the drills; when the plants come up, they muſt be kept clean from weeds; and where they are too cloſe together, they ſhould be thinned, to allow them room to grow, for they will not be ſtrong enough to remove till they have had two years growth; then in the autumn ſo ſoon as their leaves decay, the roots ſhould be taken up with great care, ſo as not to cut or injure the tap or downright root, and then planted in the places where they are deſigned to remain, for after this tranſplanting they ſhould not be removed. They delight in a ſoft, gentle, loamy ſoil, not too wet, and are very rarely injured by the hardeſt froſt.

Ferula. See *Bubon* and *Peucedanum*.

[Ferulago. See *Ferula*.

Fescue-Grass. See *Feſtuca*.

FESTŪCA. (*The ſhoot of a tree or herb*, Pliny *and* Columella; *or graſs*, Varro. *The Prætor's wand which the lictor laid on the head of a ſlave, when he was made free.* Plautus.—*From* fetus, *which is from the old verb* feo.)

Engl. *Feſcue-graſs.* Fr. *Fêtuque.*

Lin. gen. n. 88. *Reich.* 94. *Schreb.* 119. *Juſſ.* 32.

Claſſ. 3. 2. Triandria Digynia.

Nat. order of *Gramina*, *Gramineæ* or *Graſſes*.

GENERIC CHARACTER.

Cal. *Glume* many-flowered, two-valved, upright, containing the floſcules in a ſlender (oblong, roundiſh, *ſyſt. nat.*) ſpikelet: *valves* awl-ſhaped, acuminate, the lower ſmalleſt.

Cor. two-valved: *lower valve* largeſt, of the ſame form with the calyx, but larger, roundiſh, acuminate, ending in a dagger-point.

Nectary two-leaved: *leaflets* ovate-lanceolate, acute, gibbous at the baſe; or one-leafed, plano-concave, horizontal, emarginate.

Stam. *Filaments* three, capillary, ſhorter than the corolla. *Anthers* oblong.

Pist. *Germ* turbinate. *Styles* two, ſhort, reflex. *Stigmas* ſimple.

Per. none. *Corolla* very cloſely ſhut, growing together, and not gaping.

Seed ſingle, ſlender-oblong, very ſharp at both ends, grooved longitudinally.

ESSENTIAL CHARACTER.

Cal. two-valved. *Spikelet* oblong, roundiſh, with acuminate glumes.

SPECIES.

1. Feſtuca bromoides. *Barren Feſcue-graſs.*
Lin. ſyſt. 118. *Reich.* 1. 202. *Hudſ. angl.* 46. *With.* 96. *Villars dauph.* 2. 104. *Raii ſyn.* 415. 13. *hiſt.* 1287. 16. *Pluk. alm. t.* 33. *f.* 10.
Panicle directed to one ſide, ſpikelets upright, one valve of the calyx entire, the other acuminate.

2. Feſtuca ovina. *Sheep's Feſcue-graſs.*
Lin. ſpec. 108. *Reich.* 202. *fl. ſuec. n.* 91. *Hudſ. angl.* 44. *With.* 97. *Relh. cant. n.* 76. *Hall. helv. n.* 1442. *Pollich pal. n.* 101. *Leers herborn. n.* 74. *t.* 8. *f.* 3, 4. *Krock. ſileſ. n.* 153. *Stilling. miſc. t.* 8. *Villars dauph.* 2. 97. *Fl. ruſt. t.* 102.
Bromus ovinus. *Scop. carn. n.* 112.
Gramen junceum 2. *Baub. pin.* 5. *prodr. n.* 34. *Scheuch.* 279. *t.* 6. *f.* 8. *Loeſel. pruſſ.* 110. *t.* 24. *Mor. hiſt.* 3. 182. *ſ.* 8. *t.* 3. *f.* 13. *Raii ſyn.* 410. *n.* 9. *hiſt.* 1288. *n.* 23.
β. F. vivipara. *Lin. ſpec.* 108. *Reich.* 203. *Fl. ſuec.* 1. *n.* 94. *Hudſ. angl.* 44. 1. β. *With.* 97. γ. *Scheuch. agr.* 213. *prodr. t.* 1. *f.* 2. *Raii ſyn.* 410. *n.* 11. *t.* 22. *f.* 1.
Panicle directed to one ſide contracted awned, culm four-cornered almoſt naked, leaves briſtle-ſhaped.

3. Feſtuca rubra. *Purple* or *Red Feſcue-graſs.*
Lin. ſpec. 109. *ſyſt.* 118. *fl. ſuec. n.* 92. *Hudſ. angl.* 45. *With.* 97. *Relh. cant. n.* 78. *Hall. helv. n.* 1440. *Pollich. pal. n.* 103. *Gunn. norv. n.* 581. *Leers herborn. n.* 76. *t.* 8. *f.* 1. *Krock. ſileſ. n.* 155. *Stilling. miſc. t.* 9. *Villars dauph.* 2. 101.
Gramen, &c. *Scheuch.* 287. *t.* 6. *f.* 9.
Panicle directed to one ſide ſcabrous, ſpikelets ſix-flowered awned, floſcule at the end awnleſs, culm ſemicylindric.

4. Feſtuca amethyſtina.
Lin. ſpec. 109. *Reich.* 204. *With.* 98. *Hall. helv. n.* 1442. γ. *Villars dauph.* 2. 102. *Scheuch.* 276. *t.* 6. *f.* 7.
Panicle flexuoſe, ſpikelets directed to one ſide, inclined, nearly awnleſs, leaves briſtle-ſhaped.

5. Feſtuca reptatrix.
Lin. ſpec. 108. *Reich.* 204.
Branches of the panicle ſimple, ſpikelets ſubſeſſile.

6. Feſtuca duriuſcula. *Hard Feſcue-graſs.*
Lin. ſpec. 108. *ſyſt.* 118. *Reich.* 204. *Hudſ. angl.* 44. *With.* 98. *Relh. cant. n.* 77. *Hall. helv. n.* 1437. *Pollich. pal. n.* 102. *Neck. gallob.* 61. *Leers herborn. n.* 75. *t.* 8. *f.* 2. *Krock. ſileſ. n.* 154. *Villars dauph.* 2. 98.
Gramen, &c. *Baub. pin.* 5. *n.* 3. *Lob. obſ.* 9. *Raii ſyn.* 413. *n.* 4. *t.* 19. *f.* 1. *hiſt.* 1285. *n.* 9.
Panicle directed to one ſide oblong, ſpikelets oblong of an even ſmooth ſurface, leaves briſtle-ſhaped.

7. Feſtuca dumetorum. *Pubeſcent Feſcue-graſs.*
Lin. ſpec. 109. *Reich.* 205. *Hudſ. angl.* 45. 2. β. *With.* 98. *Fl. dan. t.* 700.
Panicle ſpike-form pubeſcent, leaves filiform.

8. Feſtuca elatior. *Tall Feſcue-graſs.*
Lin. ſyſt. 118. *ſpec.* 111. β. *Reich.* 207. *Hudſ. angl.* 47. *With.* 100. *Curtis lond. n.* 66. *Relh. cant. n.* 81. *Pollich pal. n.* 106. *Neck. gallob.* 60. *Leers herborn. n.* 79. *t.* 8. *f.* 6. *Schreb. gram.* 34. *t.* 2. *Hall. helv. n.* 1451. (Poa).
Gramen, &c. *Mor. hiſt. ſ.* 8. *t.* 2. *f.* 15. *Scheuch.* 266. *t.* 5. *f.* 18. *Raii ſyn.* 411. *n.* 14, 15. (*Hudſ.*) *hiſt.* 1286. 10. (*Lin.*)
Panicle directed to one ſide upright, ſpikelets moſtly awned, the outer ones cylindric.

9. Feſtuca myurus. *Wall Feſcue-graſs.*
Lin. ſpec. 109. *Reich.* 205. *Hudſ. angl.* 46. *With.* 99. *Relh. cant. n.* 79. *Hall. helv. n.* 1443. *Pollich pal. n.* 104. *Neck. gallob.* 61. *Leers herborn. n.* 77. *t.* 3. *f.* 5. *Krock. ſileſ. n.* 156. *Villars dauph.* 2. 103.
Gramen, &c. *Scheuch.* 293. *t.* 6. *f.* 11, 12. *Mor. ſ.* 8. *t.* 7. *f.* 43. *Barrel. ic.* 99. *t.* 6. *f.* 11, 12.

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[k] Woodville.

Ger. emac. 29. 2. *Park. theat.* 1162. 8. *Raii ſyn.* 415. *n.* 12. *hiſt.* 1286. *n.* 15.

Panicle ſpiked, calyxes extremely minute awnleſs, flowers ſcabrous, awns long.

10. Feſtuca ſpadicea. *Bronze-flowered Feſcue-graſs.*

Lin. ſyſt. 118. *Reich.* 205. *Gouan illuſtr.* 4. *Smith in Linn. tranſ.* 2. 113. *Villars dauph.* 2. 109.

Anthoxanthum paniculatum. *Lin. ſpec.* 40. *amoen.* 1. 145.

Poa Gerardi. *Allion. pedem. n.* 2201. *Ger. prov.* 91. *n.* 11. *t.* 2. *f.* 1. *Hall. helv. n.* 1463.

Gramen ſparteum, panicula flaveſcente. *Rudb. elyſ.* 1. 40. *f.* 14. copied in *Linn. tranſ.* 2. *t.* 10.

Gr. paniculatum alpinum, &c. *Mich. hort. piſan.* 75.

Gr. montanum, panic. ſpadicea craſſiore. *Tourneſ. inſt.* 524.

Nardus ſpuria narbonenſis. *Bauh. pin.* 13.

N. Gangitis ſpuria narbonæ. *Lob. adv.* 43.

Panicle erect, ſpikelets ovate four-flowered, glumes acuminate awnleſs, leaves briſtle-ſhaped ſmooth pungent.

11. Feſtuca phoenicoides.

Lin. ſyſt. 118. *Reich.* 206. *mant.* 33. *Ger. prov.* 95. *n.* 5. *t.* 2. *f.* 2. *Gouan illuſtr.* 4.

Gramen phoenicoides, &c. *Bauh. hiſt.* 2. 477. *Pluk. alm. t.* 33. *f.* 4.

Raceme undivided, ſpikelets alternate almoſt ſeſſile cylindric, leaves involute mucronate and pungent.

12. Feſtuca fuſca.

Lin. ſpec. 109. *Reich.* 206.

Panicle erect branched, ſpikelets ſeſſile keeled awnleſs.

13. Feſtuca decumbens. *Decumbent Feſcue-graſs.*

Lin. ſpec. 110. *ſyſt.* 119. *Reich.* 206. *Fl. ſuec. n.* 93. *Hudſ. angl.* 47. *With.* 101. *Relh. cant. n.* 83. *Hall. helv. n.* 1434. *Pollich pal. n.* 105. *Neck. gallob.* 60. *Leers herborn. n.* 78. *t.* 7. *f.* 5. *Krock. ſileſ. n.* 157. *t.* 29. *Fl. dan. t.* 162. *Villars dauph.* 2. 112.

Gramen, &c. *Scheuch.* 170. *t.* 3. *f.* 16. A, B, C. *Monti* 53. *t.* 2. *f.* 1. *Mor. hiſt.* 3. 177. *ſ.* 8. *t.* 1. *f.* 6. *Pluk. alm. t.* 34. *f.* 1. *Raii ſyn.* 408. 11. *hiſt.* 1288. *n.* 1.

Panicle upright, ſpikelets ſubovate awnleſs, calyx larger than the floſcules, culm decumbent.

14. Feſtuca pauciflora.

Lin. ſyſt. 119. *Thunb. jap.* 52.

Panicle effuſe, ſpikelets with about four flowers awned and ſcabrous, leaves villoſe.

15. Feſtuca fluitans. *Flote Feſcue-graſs.*

Lin. ſpec. 111. *Reich.* 207. *Fl. ſuec. n.* 95. *Hudſ. angl.* 46. *With.* 100. *Curtis lond.* 1. 7. *Relh. cant. n.* 82. *Pollich pal. n.* 107. *Neck. gallob.* 59. *Gunn. norw. n.* 409. *Leers herborn. n.* 80. *t.* 80. *f.* 5. *Krock. ſileſ. n.* 159. *Schreb. gram.* 37. *t.* 3. *Fl. dan. t.* 237. *Stilling. miſc. t.* 10. *Plenck, ic. t.* 44. *Villars dauph.* 2. 111.

Poa fluitans. *Scop. carn. n.* 106. *Lin. hort. cliff.* 28. *Hall. helv. n.* 1453.

Gramen ſpicatum aquaticum, &c. *Bauh. pin.* 2. 1. *theatr.* 41. *Scheuch.* 199. *t.* 4. *f.* 5. *Monti f.* 35. *Mor. t.* 3. *f.* 16. *Ger. emac.* 14. *f.* 1. *Park. theat.* 1275. 8. *Bauh. hiſt.* 2. 490. *Raii hiſt.* 1281. 7. *ſyn.* 412. 17. *Loeſel. pruſſ.* 108. *t.* 21. *Tabern. ic.* 216. *Lob. ic.* 1. 12.

Panicle branched erect, ſpikelets ſubſeſſile cylindric awnleſs.

16. Feſtuca pratenſis. *Meadow Feſcue-graſs.*

Hudſ. angl. edit. 1. 37. *With.* 101. *Curt. lond. n.* 66 *pract. obſ.* 16. *t.* 5. *Muſ. ruſt. t.* 4. *f.* 2. *Fl. ruſt. t.* 84. *Scheuch. agr.* 200. 1. & 202. 2. *Raii hiſt.* 1286. 10. *ſyn.* 411. 16. *Park. theat.* 1145. (Phoenix).

F. fluitans pratenſis. *Hudſ. angl. ed.* 2. 47. γ.

F. elatior. *Lin. ſuec. n.* 94.

β. Feſtuca loliacea. *Hudſ. angl.* 47. *Wither. arr.* 101. *Hall. helv. n.* 1452. (Poa). See n. 26.

Panicle directed one way oblique, ſpikelets without awns almoſt linear, leaves flat.

17. Feſtuca criſtata.

Lin. ſpec. 111. *Reich.* 208.

Panicle ſpiked lobed, ſpikelets ovate broad ſix-flowered hirſute.

18. Feſtuca calycina. *Bearded-leaved Feſcue-graſs.*

Lin. ſpec. 110. *Reich.* 208. *amœn.* 3. 400. *Loeſl. itin.* 116. *Cavan. hiſp. t.* 44. *f.* 2. *Lamarck encycl.* 2. 463.

Panicle contracted, ſpikelets linear, calyx longer than the floſcules, leaves bearded at the baſe.

19. Feſtuca miſera.

Lin. ſyſt. 119. *Thunb. jap.* 52.

Panicle coudenſed, glumes awned ſcabrous, culm kneed broken.

20. Feſtuca ſpinoſa. *Thorny-branched Feſcue-graſs.*

Lin. ſyſt. 119. *ſuppl.* 111.

Becoming ſhrubby, branches and branchlets thorny, pedicels prickly.

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21. Feſtuca uniglumis. *Sea Feſcue-graſs.*

Ait. hort. kew. 108. *Raii ſyn.* 413. *n.* 3. *t.* 17. *f.* 2. *Petiv. conc. gram. n.* 101.

Lolium bromoides. *Hudſ. angl.* 55. *Wither. arr.* 121.

Panicle almoſt ſimple condenſed directed one way awned, calyx one-valved, floſcules diſtant.

22. Feſtuca cambrica. *Welſh Feſcue-graſs.*

Hudſ. angl. 45. *With.* 99.

Panicle directed one way oblong upright branched, ſpikelets awned ſmooth, leaves flattiſh naked.

23. Feſtuca indica. *Indian Feſcue-graſs.*

Retz. obſ. 4. 21. *n.* 59. *Rheed. mal.* 12. *t.* 45.

Panicle contracted upright, ſpikelets compreſſed ſomewhat awned with about ſix flowers.

24. Feſtuca ſcabra. *Rugged-flowered Feſcue-graſs.*

Vahl ſymb. 2. 21.

Panicle directed the ſame way, ſqueezed cloſe, erect, ſpikelets compreſſed ſix-flowered, florets rugged.

25. Feſtuca pungens.

Vahl ſymb. 1. 10. *t.* 2.

F. mucronata. *Forſk. deſcr.* 22. *n.* 74.

Spike glomerate ovate, ſpikelets ſix-flowered columnar lanuginoſe, leaves involute rigid.

26. Feſtuca loliacea. *Darnel Feſcue-graſs.*

Curt. lond. n. 66. *Hudſ. angl. ed.* 1. 38. *Hall. helv. n.* 1452.

Spiked, ſpikelets alternate ſeſſile compreſſed awnleſs.

DESCRIPTIONS, *&c.*

Panicled Graſſes. According to Scopoli, Feſtuca, Bromus, and Triticum are one genus. In Dr. Stokes's opinion the two laſt are ſo, Bromus being only a panicled Triticum : but in Feſtuca, the outer valve of the corolla gradually narrows into the awn, whereas in the others the awn is inſerted below the point of the valve, or the edge of the valve ſwells out into a thin membrane on each ſide the baſe of the awn. In Feſtuca, the awn is an extenſion of the whole valve ; in Bromus and Triticum, only of the keel or middle rib, as in Avena[a]. It is to be lamented that this obvious character is not ſo conſtant as to be depended on.

1. F. bromoides differs from *F. myurus* in the panicle's reſembling a ſpike, and the glumes not being ciliate. It is like *F. ovina*, but has broader leaves[b]. Ray obſerves, that the panicle is broader and ſhorter than in *F. myurus* ; the ſpikelets are alſo larger and broader ; and the culm has three or four joints.

Its height is about half a foot ; the culms are inclined ; the leaves are thin and ſmooth, the lower part of them quickly drying up ; the panicles branch at the baſe, they are compoſed of ſmooth flatted ſpikelets, containing ſix or ſeven flowers ; the outer valve of the corolla terminates in a long awn ; the calyx has the outer baſe very ſmall, the inner is large, and ends in an awn like the corolla[c].

According to Withering our plant is Gramen bromoides panicula heteromalla, &c. *Scheuch.* 290. *t.* 6. *f.* 10. and not, Gr. paniculatum brom. &c. *Scheuch.* 297. *t.* 6. *f.* 14. On the contrary Villars is of opinion that Scheuchzer has repeated the ſame

[a] Stokes in Withering, p. 96.

[b] Linn.

[c] Villars.

plant five or ſix times under different names and deſcriptions, from p. 290 to 293, and in p. 296, 297.

Native of England and France, on walls and in ſandy paſtures; flowering in june and july. Annual.

2. Feſtuca ovina or Sheep's Feſcue, is a ſmall graſs, ſcarcely exceeding ſix inches in height; perennial, flowering in june and july[d]. Floſcules three to ſix in each ſpikelet, generally acuminate, or acuminate-awned[e]. Culms ſomewhat angular, with two or three coloured joints. Root-leaves hirſute, ſtem-leaves ſmooth. Lower ſpikelets peduncled, linear, four-flowered with the rudiment of a fifth; glumes unequal, the larger ovate, the ſmaller ſharp[f].

Chiefly on dry ſandy ſoils, and in elevated ſituations; on all our fineſt ſheep-downs common.

This graſs has been much celebrated for feeding ſheep. Linneus affirms that it is their principal food, and that they have no reliſh for hills and heaths that are without it. Gmelin ſays that the Tartars chooſe to fix during the ſummer where there is the greateſt plenty of this graſs, becauſe it affords a moſt wholeſome nouriſhment to all kinds of cattle, but chiefly ſheep. It certainly is a very ſweet feed, as far as it goes, on ſheep downs. Mr. Anderſon does not ſcruple to affirm that it is capable of affording an immenſe quantity of hay, that it promiſes to be one of the beſt graſſes our country produces, and to make a moſt valuable acquiſition to the farmer. This is carrying our prejudices very far indeed, for in its native ſoil, on dry elevated heaths and commons, its foliage is hard and wiry, its produce very trifling. In ſuch ſituations it is of a purpliſh-brown colour in ſummer. In a rich moiſt ſoil indeed the foliage retains its verdure, and becomes much longer, but being ſtill a ſmall plant, it can never be productive, and conſequently cannot have any pretenſions to be conſidered as fit for a hay graſs. Were the Sheep's Feſcue to be ſown in ſuch a ſoil, the graſſes and other plants natural to that ſoil would quickly overpower it; and it is not merely the graſs, but the nature of the ſoil in which it grows, the elevated ſituation, and the dry ſalubrious air that are acceptable to ſheep.

Mr. Curtis, who has combated the vulgar notion of the excellence of this poor wiry graſs for feeding cattle, particularly ſheep, has however found out that it is excellent for the purpoſe of making a fine graſs-plat, requiring little mowing. When it has once got poſſeſſion of the ſoil, it will form ſo thick a turf, as to ſuffer few intruding weeds, and may be kept in order with little trouble. For this purpoſe it muſt be ſown about the middle of auguſt, in an open, but not too dry ſituation, broad-caſt, and that thickly, on ground nicely prepared and levelled[g].

β. In Sweden, and on the mountains of Wales, Yorkſhire, and Weſtmoreland.

3. Red Feſcue Graſs is diſtinguiſhed from the foregoing by its greater ſize, its red colour when ripe, and the culm being cylindric only flatted a little on one ſide. The leaves are covered with a ſoft woollineſs on the upper ſide barely perceptible to the naked eye. Culms ſmooth, but within the panicle rough; green, but when the ſeeds are ripe, red[h]. It differs from *F. duriuſcula* in having the ſtem-leaves broader and flat, the ſpikelets a little larger, and the panicle looſer: from *F. myurus*, in having the root-leaves briſtle-ſhaped, and very ſhort awns[i].

Culm eight inches high (from two inches to two feet); ſtem-leaves one or two; ſpikelets four, five, or ſix-flowered[k].

According to Monſ. Villars, the ſtiff hard leaves, thoſe of the ſtem like thoſe next the root, fine and of a ſhining green, with the browniſh red ſhining colour of the flowers, diſtinguiſh this from the innumerable varieties of ſome other ſpecies. The glumes of the corolla are ſhining and ſmooth.

High heaths and dry paſtures, flowering in july. Perennial.

4. This is probably nothing more than a variety. Haller makes it a variety of *F. ovina*.

Monſ. Villars allows, that it differs little from F. ovina, but that the leaves are of a darker green, the panicles red, and the ſpikelets a little wider than in F. rubra.

He has a ſpecies, which he calls F. heterophylla; and ſays it differs from this in having the ſtem-leaves wider, and the root-leaves narrower; the ſpikelets ſmaller not coloured, the culm and awn as long again:—from F. ovina in having higher culms, wider leaves, thinner and greener ſpikelets, and longer awns. He ſays it is very common about Paris, and refers to Haller n. 1438. as a ſynonym.

5. Root perennial, the thickneſs of a gooſe-quill, creeping very far under ground, covered with broad rudiments of leaves. Culm more than a foot and half in height. Leaves involute-filiform. Panicle oblong, with alternate very ſimple branches, pointing one way; ſpikelets alternate, very many, lanceolate, ſix-flowered, acuminate, awnleſs.

Native of Arabia and Palæſtine[l].

6. Root perennial. Culm twelve or eighteen inches in height. Leaves ſmooth. Branches of the panicle alternate, (moſtly in pairs, *Hudſ.*) Spikelets peduncled, linear, compreſſed, ſix-flowered, aſcending[m].

It agrees with the next ſpecies in having filiform, channelled root-leaves, and flat ſtem-leaves, but the glumes of this are ſmooth[n].—This is eaſily diſtinguiſhed from *F. rubra* by having both root and ſtem-leaves briſtle-ſhaped, ſmall ovate ſpikelets with very ſhort awns, and a more contracted panicle: from *F. ovina* by the roundneſs of the culm, and the ſpikelets conſtantly ending in a very ſhort awn[o].—According to Hudſon, it varies with briſtle-form and filiform roughiſh root-leaves; flat and channelled naked ſtem-leaves; with from four to ten flowers in a ſpikelet, which are either ſmooth or pubeſcent. But he makes the next ſpecies to be a variety of this.

In dry paſtures, flowering in june.

It is early and productive; from theſe circumſtances, and its natural place of growth, it appears to be a proper graſs for ſheep paſtures. It varies much in ſize and breadth of leaf, as well as colour of its panicle, but in all ſituations is very diſtinct from the *ovina*[p]. All theſe graſſes form an admirable paſture for ſheep, and ſeem to flouriſh moſt when they are bit the cloſeſt, but in general they are not productive.

Monſ. Villars has a ſpecies which he calls *F. cinerea.* It reſembles F. ovina in its characters, but the leaves are hard, ſtiff, thick, turned obliquely, but little raiſed, forming a turf of ſome inches in diameter; the panicles are ſomewhat aſh-coloured, but leſs ſo than the leaves, the ſpikelets are almoſt turned to one ſide, and are villoſe; the outer valve of the corolla ends in an awn ſcarcely one-third of the length of the valve. It differs from this ſpecies in its villoſe glumes terminated by an awn, whereas in the *duriuſcula* they are ſmooth, without any viſible awn.

7. Culms a foot or eighteen inches in height, filiform, cylindric, with two ſwelling knots. Root-leaves a foot long, cylindric, ſcarcely ancipital; ſtem-leaves ſhorter, channelled. Panicle ſmall: ſpikelets ten or twelve oblong, pubeſcent, hoary; the lower ones in pairs, pedicelled: the upper ones ſeſſile, ſolitary. Glumes terminating in a minute awn. Bulbs often produced within the ſheaths of the culm. Very nearly allied to F. duriuſcula[q].

In woods and hedges, flowering in june and july.

8. Leaves from a foot to eighteen inches long. Panicle condenſed, from a ſpan to a foot in length: ſpikelets green and purple, cylindric, diſtich: awn the length of the glume[r]; but more frequently none.

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[d] Withering.
[e] Hudſon.
[f] Lyons faſcic.
[g] Curtis's practical obſervations.
[h] Linn.
[i] Pollich.
[k] Lyons faſcic.
[l] Linn. ſpec.
[m] Lyons faſcic.
[n] Linn.
[o] Pollich.
[p] Curtis.
[q] Linn.
[r] Lyons faſcic.

Florets about eight. Calycine glumes unequal, acuminate; of the corolla nearly equal, pointed, the outer a little larger and longer, the inner often bifid [s].

Hudſon who joins the *Meadow* with the *Flote-Feſcue*, doubts whether this be a diſtinct ſpecies, ſince it has ſo many things in common with them.—Curtis, though he allows it to be very ſimilar, yet aſſerts it to be ſpecifically different.

It grows in large tufts, and is conſpicuous by the breadth of its leaves, the height of its ſtems, and the drooping of its panicle at leaſt before it flowers. In very luxuriant ſpots the leaves are ſometimes half an inch wide; but in general this graſs varies little except in ſize, and ſometimes in having awns.

It is found in moiſt meadows, and woods, but moſt frequently in wet ſituations, as by river ſides and in oſier grounds; flowering in june and july, and is perennial [t].

Linneus affirms that it makes very excellent feed, but that it is luxuriant only in a rich ſoil: but this is ſpoken of our F. pratenſis, which he names elatior in Fl. ſuec.—Curtis aſſerts that it grows to a great height in marſhes, is hardy and very productive, but too harſh and coarſe for hay, yet that it may perhaps be a good graſs for ſoils which cannot be drained of their too great moiſture, or which are apt to be overflowed.

9. Culms aggregate, cylindric, a foot or eighteen inches in height. Panicle directed to one ſide, branched but not diffuſed, linear and often a ſpan in length, bending a little but not nodding. Spikelets ſubſeſſile, linear, with five floſcules in each, (five to eight, *Leers*): glumes very unequal, awns longer than the ſpikelets [u]; according to Haller, growing from below the tip.

On walls and in barren places, flowering in june. It is annual, and is called Capon's-tail Graſs.—Firſt obſerved by Mr. Goodyer on the walls of Wincheſter [x].

10. Root perennial. Culms three feet high, erect, ſtrict, round, ſtriated, very ſmooth, with one or two purple joints. Leaves involute-ſetaceous, ſtrict, very ſmooth, ſtriated, mucronate-pungent, glaucous, widened into a membrane at the baſe, ſheathing, whitiſh. Stipules intrafoliaceous, very ſhort, or none. Panicle branched, looſe, of a golden-bay or bronze colour, with the branches commonly in pairs. Peduncles angular, ſubflexuoſe, erect. Spikelets compreſſed, uſually four-flowered, ſmooth. Calycine valves almoſt equal, keeled, acuminate not awned, membranaceous and pellucid at the edge, brown at the baſe. Valves of the corolla longer, acuminate, one larger, keeled, embracing the other. Anthers purpliſh, included. Styles very ſhort. Seed brown. The panicle is more or leſs branched.

Linneus ſeems to have referred this graſs to the genus Anthoxanthum, merely from the habit, and the colour of its flowers; but they are clearly triandrous.

Dr. Smith, whoſe ſagacity and attention in developing this ſpecies are eminently conſpicuous, informs us that he has learnt from Savoy, that this graſs is likely to become of conſiderable uſe, and that large quantities of it are now in cultivation [y].

Native of the South of France, Switzerland, *&c.* Found on Mont Cenis by Dr. Smith in 1787, and cultivated, from the ſeeds which he brought over, by Mr. Fairbairn, in the botanic garden at Chelſea, in 1788 [z].

11. Root creeping. Culms two feet high, and upwards, ſtraight, branched at the baſe. Spike from two inches to a foot and more in length: ſpikelets remote, two inches long, ſharpiſh, from ſix to eight-flowered. Leaves glaucous, ſmooth, convoluted, ſharp and rigid at the end. Glumes mucronate. Perennial.—Native of the ſandy ſhores of Provence [a].

12. Culm lofty, branched. Leaves from broadiſh ſheaths, narrow, longitudinally involute, long, ſubulate. Panicle ſubdivided; ſpikelets upright, an inch in length, obſcure, with ſixteen to twenty-four floſcules.—Native of Palæſtine [b].

F. fuſca of Villars (98. n. 7.) may perhaps be our ſpadicea.

13. Root perennial. Culms from a foot to eighteen inches in length, (in dry ſituations not more than a ſpan, according to Krocker) ſomewhat bulbous at the baſe, having three knots, lying on the ground, but when in flower, aſcending obliquely. Root-leaves narrowiſh, flat, hairy on the upper ſurface, eſpecially at the baſe: ſtem-leaves the ſame, only ſhorter; ſheaths villoſe above. Panicle very ſimple; peduncles alternate, ſimple, ſhort, one-flowered, the loweſt longer and on a ſingle branchlet two-flowered. Spikelets five to ſeven, ovate, ſomewhat ſwelling, upright, three, four, and ſometimes five-flowered (three, *Lin.*—three to ſix, *Weber.*—eight, four of which are perfect and four imperfect, *Haller*) coloured (purple or green, *Lyons*). Outer valve of the calyx frequently longer than the ſpikelet; inner ſhorter and narrower. Floſcules hairy at the baſe; outer valve five-nerved, ciliate about the edge, obtuſe at the end and trifid; inner flat, bifid and often trifid at the end. Nectaries two, obtuſe. The extreme floſcule is barren [c]. Allied to the genus, Melica [d].

On barren paſtures, both dry and wet; frequent on mooriſh ground. It flowers in july and auguſt.

14. Culm round, ſtreaked, upright, two feet high. Leaves linear, ſtreaked, with very fine villoſe hairs, eſpecially on the ſheaths. Panicle ample, and ſpreading very much: peduncles capillary, flexuoſe, ſtreaked, ſcabrous; pedicels leſs ſpreading. Calyxes marked with lines, lanceolate, with long awns.

Native of Japan [e].

15. *Root* perennial, ſtriking deep into mud. *Culm* from one to three feet in length (or even much longer in water), creeping at bottom, and ſending forth young ſhoots, afterwards nearly upright; covered with the ſheaths of the leaves as far as the panicle. *Leaves* broadiſh and ſmooth; thoſe of the young ſhoots upright, keel-ſhaped, and ſhortiſh; thoſe of the ſtem longer, flattiſh, weak, and hanging down, in the winter ſeaſon lying flat on the water. *Panicle* long (often more than a foot in length) generally bending down a little, ſometimes forming a kind of ſpike, but moſt commonly branched; the branches ſometimes preſſed to the culm, ſometimes diverging from it. *Spikelets* cylindric, ſlender, an inch or an inch and half long, from nine to twelve-flowered, (ſeven to eleven, *Leers*) preſſed to the ſtalk. Valves of the *corolla* equal in length, the lower nerved, the nerves towards the top frequently coloured, at top membranous, rather blunt, with uneven points; the upper valve more pointed, flat and bifid. *Nectary* a ſmall heart-ſhaped gland reſembling a ſcale, placed horizontally at the bottom of the germ. *Stigmas* very much branched; but the ſtyles not feathered to the germ, as in Schreber's figure and in the Flora Danica. *Seed* ſhining, olive-coloured, with two little horns, and naked.—When it has nearly done flowering, the branches of the panicle generally project from the main ſtalk in an acute angle. In every ſituation, the ſpikelets are always preſſed cloſe to the ſtalk or branches of the panicle: this circumſtance, joined to the length and roundneſs of the ſpikelets, ſufficiently characterizes this ſpecies: which being common in ditches, watery places, and ſlow ſtreams; flowering all the ſummer; and having the parts of fructification beautiful and large enough to be diſtinctly diſcerned by the naked eye, without the trouble of diſſection, is peculiarly proper for the inveſtigation of the ſtudent [f].

It appears that horſes, kine and hogs are fond of this graſs. Mr. Stillingfleet informs us, that having been told of a field of four acres, always under water, maintaining five farm horſes in good heart from april to the end of harveſt, without any other food; he obtained ſome of the graſs, and found it to be the *flote-feſcue*, with a mixture of marſh-bent. Cows in ſpring are frequently enticed into bogs, by endeavouring to get at the ſweet young ſhoots of this graſs, which appear earlier than thoſe of moſt other graſſes. Profeſſor Kalm, obſerving that ſwine go a great way into the water after the *flote-feſcue*, and that they eat the leaves with great eagerneſs; had ſmall bundles of it gathered, and dried for hay, which they devoured with great eagerneſs: hence he concludes that wet and ſwampy places might be rendered uſeful by cultivating this graſs. It has been recommended to be ſowed on meadows that admit flooding: but Mr. Curtis juſtly remarks, that the *flote-feſcue* will not flouriſh, except on land that is conſtantly under water, or converted into a bog or ſwamp.

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[s] Curtis. [t] Curt. lond. [u] Lyons faſc. [x] Ger. emac.
[y] Linn. tranſ. 1. 111. & 2. 101. [z] Id. 1. 112, 114.
[a] Linn. mant. and Ger. prov.

[b] Linn. ſpec. [c] Leers. [d] Linn. [e] Thunberg.
[f] Curtis.

The ſeeds are ſmall, but very ſweet and nouriſhing. They are collected in ſeveral parts of Germany and Poland, under the name of Manna-ſeeds (*Schwaden*), and are eſteemed a delicacy in ſoups and gruels. When ground to meal, they make bread very little inferior to that from wheat. The bran is given to horſes that have the worms; but they muſt be kept from water for ſome hours afterwards.—Geeſe and other water-fowl, are very fond of the ſeeds[g]. So alſo are fiſh; trout in particular thrive in thoſe rivers where this graſs grows in plenty.

Schreber informs us, that the ſeeds are collected not only from this graſs, but alſo from *Panicum ſanguinale*, or *Cock's-foot Panic Graſs*, which is cultivated in ſeveral parts of Germany for this purpoſe. The common method of gathering and preparing them is as follows. At ſun-riſe they are gathered or beaten from the dewy graſs into a horſe-hair ſieve, ſpread on a ſheet; and are dried for a fortnight in the ſun: they are then beaten gently with a wooden peſtle in a wooden trough or mortar, with ſtraw laid between them and the peſtle, till the chaff comes off, and then they are winnowed. After this, they are again put into the mortar or trough, in rows, with dried Marygold flowers, apple and hazel leaves, and pounded till they appear bright; they are then winnowed again, and being made perfectly clean by this laſt proceſs are fit for uſe. The Marygolds are added to give the ſeeds a finer colour. The moſt proper time for collecting this ſeed is in july. A buſhel of ſeed with the chaff yields only about two quarts of clean ſeed.

Mr. Curtis has obſerved a diſorder in the ear of this graſs, ſimilar to that which has been noticed by the French in Rie, and called by them *Ergot*.

What Mr. Hudſon diſtinguiſhed in the firſt edition of his Flora, under the name of *F. loliacea*, he afterwards ſuppoſed to be only a variety, from a dry ſoil acquiring acuminate glumes to the floſcules. He alſo aſſerted that flote-feſcue ſown in a garden will become *F. loliacea*. In this however he ſeems to have been miſtaken, F. loliacea being either a diſtinct ſpecies, or elſe a variety of F. pratenſis, which is always very different from F. fluitans or Flote Feſcue; a variety of which frequently occurs on dry land, that may eaſily be diſtinguiſhed from F. pratenſis[h]: it is in every reſpect leſs, and the panicle is often changed to a ſimple ſpike[i].

16. *Meadow Feſcue-Graſs* differs from elatior n. 8. with which it has frequently been confounded, in having only half the height or little more, the leaves only half the breadth, the panicle ſhorter and containing about half the number of flowers; the panicle is but once branched, droops but ſlightly, leans to one ſide when in flower, and the flowers all grow one way: in the *elatior* the panicle branches twice, it droops greatly at firſt, and the flowers grow much more looſely, the ſpikelets are more round, ovate and pointed, whereas in *pratenſis* they are ſomewhat flat, linear and obtuſe. This alſo is more common and leſs local than the *elatior*, is found more diſperſed in open meadows, and does not form ſuch large tufts. They differ a fortnight or three weeks in their time of flowering[k].

Mr. Hudſon, who in the firſt edition of his Flora Anglica gave this as a diſtinct ſpecies, affirmed afterwards that the Flote-feſcue ſown in a garden, and becoming *F. loliacea* or *Darnel-Feſcue*, the firſt year; will, in the ſecond, become this graſs; than which nothing can be much more improbable. Mr. Curtis, who has cultivated it, recommends it among the ſix Graſſes, which he prefers before all others, and particularly for land either moiſt or moderately dry. This, he ſays, comes neareſt in its appearance to Ray-graſs (*Lolium perenne*), to which however it ſeems in many reſpects greatly ſuperior, at leaſt for the purpoſe of forming or improving meadows: it is larger, and more productive of foliage, is ſtrictly perennial, very hardy, is found in all ſituations, from the ſand-pits at Charlton, to the oſier-grounds at Batterſea, and abounds in the very beſt meadows about London: in ſhort there is no graſs more likely to ſupply the deficiencies complained of in Ray-graſs. One quality it has, which bids fair to introduce it quickly into general uſe; it produces more ſeeds than any of the others, which are eaſily gathered, and readily grow. In one reſpect, it is inferior to *Vernal*, *meadow Fox-tail*, and *ſmooth-ſtalked Meadow-graſs* (Poa pratenſis); it does not produce its flowering ſtems earlier than about the middle of june, a fortnight or three weeks later than *meadow Fox-tail Graſs*; yet it cannot be conſidered as a late graſs, for moſt of the *Agroſtis* genus, and *meadow Cat's-tail Graſs* (Phleum pratenſe) flower at leaſt three weeks later. It muſt be carefully diſtinguiſhed from *F. elatior* (n. 8), which is very ſimilar, but much coarſer.

17. Culms many, ſcarcely the length of a finger. Panicle reſembling a ſpike, almoſt ovate, differing from *Aira criſtata* in having more floſcules, and thoſe hirſute, the culm alſo is ſhorter; but it approaches that graſs in its appearance.—Native of Portugal, on barren hills[l].

18. Root annual. Root-leaves collected into a tuft. Culms filiform, narrow, of a finger's length. Panicle attenuated. Calyx the length of the ſpikelet[m].

According to Cavanilles, who obſerved it near Madrid, a ſhort fibrous root produces ſlender culms from four to ſix inches in height, ſomewhat proſtrate at the baſe, but from the firſt joint upright; joints purple. Leaves ſhort, acute, bearded at the tip of the ſheath. Panicle contracted, hardly an inch long. Calycine valves ovate-acute, keeled, rigid, ſtriated, with a ſcarioſe white border, the length of the ſpikelet. Valves of the corolla awnleſs; the outer ovate, ſtriated, white and ſcarioſe at the tip, including the inner. The genitals ſo minute as not to be viſible to the naked eye.

Native of Spain. Flowering there in may; here in june and july. It was introduced in 1781, by Monſ. Thouin[n].

19. Culm lying on the ground, erect at top, a foot and half in height. Leaves enſiform, ſmooth, a finger's length. Panicle reſembling a ſpike, moſtly pointing one way, ſmooth, a finger's length. Calycine glumes containing few flowers.

Native of Japan[o].

20. *Culms* perennial, the ſize of a pigeon's quill feather, ſolid, proliferous; the branches crowded, upright, ſimple, thorny at the end. *Leaves* with dilated ſheaths, ending in an awl-ſhaped, pungent, very ſhort leaf. *Branches* round, leafleſs; branchlets alternate, horizontal, very ſimple, an inch long, dagger-pointed and thorny, flat above, roundiſh underneath, pungent-thorny, on both edges; ſpikelets four to ſix formed from the peduncles. *Flowers* diſtich. *Spikelets* ſomewhat oblong, containing ſeven to ten floſcules, not very cloſely approximating,

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[g] Withering and Linn. ſuec.

[h] Woodw. Mſs.

[i] Curtis.

[k] Curtis.

[l] Linn. ſpec.

[m] Ibid.

[n] Hort. kew.

[o] Thunberg.

ſcarcely acute. *Peduncle* of the ſpike adhering; the branchlets after the peduncles fall changing into a ſpinule.—Native of the Cape of Good Hope[p].

21. *Root* annual. *Culms* many from ſix inches to a foot in height, oblique, round, ſmooth, ſomewhat branched. *Leaves* petioled, ſomewhat involute, ſharp, naked, much ſhorter than the petiole, which is ſheathing, ventricoſe and naked. *Stipule* membranaceous ſomewhat obtuſe. *Spikelets* peduncled, linear, with from four to eight flowers. *Peduncles* ſhort, thickening, ſcabrous. *Glume* one-valved, linear, concave, awned. *Corolla* the outer valve larger, linear, keeled, awned, ſcabrous; inner ſhorter, linear, flat, awnleſs. *Awn* twice as long as the floſcule.

Sea coaſt, in looſe ſand; flowering in may and june[q]. Found by Dr. Sherard in Jerſey, by Mr. Dale in Merſey iſland, and by Dillenius on the coaſt of Suſſex[r].

22. *Root* perennial. *Culm* about a foot in height, oblique, round, leafy, ſmooth, having two or three joints. *Root-leaves* ſomewhat erect, enſiform, ſharpiſh, channelled: *ſtem-leaves* two or three, petioled, ſharpiſh, nerved. *Petiole* ſheathing, cylindric, ſtreaked, hirſute. *Stipule* membranaceous, ſheathing, obtuſe. *Panicle* ſomewhat condenſed, branched at the baſe. *Spikelets* peduncled, with about ſix flowers, ovate, ſubulate-awned, ſmooth; the awn ſhort. *Peduncles* almoſt the length of the ſpikelet.—Allied to *F. duriuſcula.*

On the higheſt mountains about Llanberis, in Wales, plentifully. It flowers in july and auguſt[s].

23. This ſpecies has the appearance of a *Poa. Culms* three feet high and more, the thickneſs of a pigeon's quill, ſtreaked, leafy. *Leaves* linear, the ſheaths ſwelling at the baſe. *Panicle* half a foot in length; the branches ſimple. *Spikelets* ſix to eight-flowered, ſmall, alternate, with ſhort pedicels. *Calyx* the outer valve larger, keeled; the inner ſmaller, flat. *Corolla* glumes nearly equal, ſmooth, the nerve of the outer uſually ending in a ſhort awn.—It is diſtinguiſhed from far by its blueiſh-green colour. One half of the panicle flowers and expands, then contracts whilſt the other half flowers.—Native of Tranquebar in the Eaſt Indies, in the rice-grounds; with erect culms in flooded lands, and decumbent ones in dry places[t].

24. This graſs is a foot and half high, or more, with a round, ſmooth, ſtriated culm, and involuted leaves. Panicle a long ſpan in length, upright; the lower branches ſubdivided. Spikelets lanceolate. Calycine glumes ſmooth. Outer valves of the corolla rugged, acute, villoſe when viewed by a magnifier.

Native of the Cape of Good Hope, whence it was ſent by Bulow.

25. Culm creeping. Branches erect, divided at top commonly into four divaricated branchlets, a ſpan long, and the thickneſs of a pigeon's quill: the internodes an inch in length. Leaves alternate, in two rows, ſpreading very much, pungent, very ſmooth, very finely ſtreaked. Sheaths twice as long as the joints, covering the culm, broader than the leaves, ciliate, bearded at the throat on each ſide; without any ligule or ſtrap. Spike compound, ſeſſile, terminating, half an inch long. Rachis pubeſcent. Spikelets twelve, alternate, glomerate. Calyx from ſix to eight-flowered: valves oblong, concave, ſmooth, keeled, awnleſs, one narrower than the other. Outer valve of the corolla ovate, concave, mucronate, hyaline, with three elevated green lines, ſlightly ſerrulate at the tip, hairy on the outſide, eſpecially at the baſe and towards the edge: inner valve narrower, flat, the ſides bent in, hairy, with a green line on both ſides at the edge[u].

26. In deference to the judgement of Mr. Curtis, who has beſtowed ſo much laudable attention on this uſeful tribe of Graſſes, the *Darnel* Feſcue-graſs is here given as a diſtinct ſpecies, though Mr. Hudſon regarded it as a variety of the *fluitans*, and others of the *pratenſis*[x].

In root, ſtalk, leaves and habit it comes ſo near Lolium perenne (or common Ray-graſs) as ſcarcely to be diſtinguiſhed from it, but it is uſually higher by about one-third; the flowers in general grow in a ſimple ſpike, from eight inches to a foot in length, bending a little towards the top; the ſpikelets are ſeſſile, near an inch long, diverging from and for the moſt part placed obliquely to the rachis, ſometimes on peduncles of different lengths, the lowermoſt about an inch long, nearly round, flattened a little on the ſides, running out to a point; the uppermoſt ſhorter and ſomewhat broader, containing from ten to fifteen flowers; calycine valves unequal in ſize, the innermoſt frequently ſmall, lateral, and ſometimes wanting.

The ſpike is not unfrequently branched; then it approaches nearer to F. pratenſis, but may be diſtinguiſhed from it, by the length of its ſpiked panicle; moſt commonly the branches grow from the baſe of the ſpike, ſometimes from the middle, but ſometimes the ſpikelets are ſhorter, and two or three grow together from the ſame point: when the ſpikelets are ſhorter and broader than uſual, it reſembles Lolium perenne ſo much, as frequently to be taken for the ſame; and may be conſidered indeed as forming the connecting link between that genus and this. In this ſtate however it may be diſtinguiſhed, 1. By the ſpikelets being placed obliquely to the rachis, whereas in the Lolium their edge is parallel with it, which gives the ſpike a flat appearance. 2. Lolium never has more than one valve to the calyx, which is ſtrong and uſually two-thirds of the length of the ſpikelet; whereas in this there are uſually two calycine valves, though the inner valve is often very ſmall, imperfect, and ſometimes wanting altogether; but it rarely happens that it is deficient in all the ſpikelets. 3. The outer valve of the calyx is rarely more than one-third of the length of the ſpikelet.

It is found plentifully in moiſt fertile meadows, and flowers about the ſame time with the pratenſis. It is a hardy perennial of very quick growth, producing a crop ſomewhat ſimilar to Ray-graſs, but larger, and ſucceeding beſt in a moiſt ſoil; it is however harſh and ſtalky. This and the elatior do not ſeem to produce ſeeds, in a ſtate of cultivation at leaſt[y]. May not this circumſtance ariſe from their running much at the root?

PROPAGATION AND CULTURE.

See GRASS.

FESTUCA. See *Ægilops*, *Agroſtis*, *Andropogon*, *Avena*, *Bromus*, *Dactylis*, *Poa*, *Stipa*, *Triticum*.

FEVERFEW. See *Matricaria*.

FEVER ROOT. See *Trioſtium*.

FEUILLEA. (*So named in honour of Louis Feuillée, a French Franciſcan monk, who travelled into Peru. Journal de Perou* 1714 & 1725.)
Lin. gen. n. 1118. *Reich.* 1223. *Schreb.* 1525. *Juſſ.* 397. Nhandiroba. *Plum.* 27.
Claſſ. 22. 5. Dioecia Pentandria.
Nat. order of *Cucurbitaceæ*.

GENERIC CHARACTER.

Male.

CAL. *Perianth* bell-ſhaped, one-leafed, half-five-cleft rounded at bottom, ſpreading at top.

COR. one-petalled, wheel-ſhaped: *border* half-five-cleft; *diviſions* convex, rounded; navel cloſed with a double little ſtar, reſpecting the ſun's motion, the rays alternately longer and ſhorter.

STAM. *Filaments* five, ſubulate. *Anthers* twin, roundiſh. *Nectary* conſiſts of five, compreſſed threads bent in, and alternate with the ſtamens.

Female.

CAL. *Perianth* as in the male, but with a germ at the baſe.

COR. as in the male: the ſtar of the navel is formed of five heart-ſhaped plates.

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[p] Linn. ſuppl. [q] Hudſon. [r] Ray ſyn. [s] Hudſon. [t] Retz. [u] Vahl.

[x] See n. 15 and 16. [y] Curtis lond.

Pist. *Germ* inferior. *Styles* three or five, filiform. *Stigmas* heart-ſhaped.

Per. *Berry*, or rather Pome, very large, fleſhy, with a hard ſkin, ovate, obtuſe, ſurrounded with the calyx.

Seeds compreſſed, orbicular nuts.

ESSENTIAL CHARACTER.

Male. *Cal.* five-cleft. *Cor.* five-cleft. *Stam.* five. *Nect.* five converging filaments.

Fem. *Cal.* five-cleft. *Styles* three. *Pome* hard, three-celled, corticoſe.

SPECIES.

1. Feuillea trilobata.
   Lin. ſyſt. 886. *Reich.* 4. 253.
   Trichoſanthes punctata. *Lin. ſpec.* 1432. *amœn.* 3. 423.
   Leaves lobed, dotted underneath.
2. Feuillea cordifolia.
   Lin. ſyſt. 887. *Reich.* 253. *Brown. jam.* 374. *Swartz obſ.* 377.
   Leaves heart-ſhaped, angular.

DESCRIPTIONS, &c.

Theſe are climbing herbs, with alternate leaves, heart-ſhaped or three-lobed, cirrhoſe in the axils; the peduncles are axillary, ſuſtaining one or many ſmall flowers. It is doubtful whether theſe be really monopetalous, or rather apetalous, with the inner calyx coloured, as in other cucurbitaceous plants, to which this genus is nearly allied. The ſtar which cloſes the opening of the male flower is probably the triple permanent ſtyle of an abortive germ. There are ten diſtinct filaments alternately fertile and barren. The ſtar in the female flower, is perhaps made up of abortive ſtamens. The fruit is a berry, half inferior, ſpherical, ſcored round with a circular veſtige of the border of the calyx: it is three-celled, and contains many ſeeds, which are large, and covered with a corky cruſt; the heart is large, without any periſperm[a].

1. Stem angular, the thickneſs of a thread. Leaves petioled, cordate, five-parted, naked, the upper ſurface rugged, but the lower is ſo only on the veins: middle lobes dilated-three-lobed, lateral ones ſhorter, blunter, two-lobed; all punched beneath with honey pores. At the axils of the leaves are tendrils and bulbs[b]. Native of the Eaſt-Indies.

2. Stem ſuffruteſcent at bottom, divided at top, with herbaceous branches, (as in the three-lobed) climbing frequently to the tops of trees, roundiſh, and very ſmooth. Leaves petioled, alternate, uſually cordate, when more adult cordate-lobed, the lower ones three-lobed, the lobes angular, thick, nerved, very ſmooth on both ſides. Flowers racemed, duſky yellow.

Racemes in the male, divaricating, looſe; the ſubdiviſions almoſt upright, alternate, many-flowered; flowers pedicelled. Calyx five-parted; the parts convex, ſpreading, ovate, duſky. Filaments converging at the baſe, reflex, club-ſhaped, gibbous, with a ſort of head at the end, to which the anthers are faſtened: theſe are ovate, open longitudinally in the middle, and are whitiſh. The five other threads forming the nectary are yellow. The fruit is a globular, corticoſe, hard, many-ſeeded pome. The nuts are orbicular, compreſſed, rugged and ferruginous, incloſing a very white kernel. The whole plant is very bitter. There is a remarkable analogy between the fruit of this plant and Faba Ignatii.

It is frequent in the inland parts of Jamaica, and is generally found climbing among the talleſt trees in the woods. The ſeeds are very oily, and often burnt by the negroes inſtead of candles. The kernels are extremely bitter, and commonly infuſed in rum for the uſe of the negroes: a ſmall quantity of this liquor opens the body and provokes an appetite, but a larger doſe works both by ſtool and vomit. It is frequently taken when there is any ſuſpicion of poiſon, and often on other occaſions[d]. Browne calls it the Antidote Cocoon.

The firſt ſpecies is a native of the Eaſt-Indies; but it is doubtful whether they be diſtinct. Swartz affirms, that they are not ſo much as varieties.

Ficaria. See *Ranunculus.*

Ficoidea. See *Aizoon.*]

Ficoides. See *Aizoon, Cactus, Craſſula, & Meſembryanthemum.*

FICUS. (*Some derive it from* fœcundus, *others from the Greek* συκη *or* συκας, *others again from the Hebrew* fag.)

Engl. *Fig-tree.* Fr. *Figuier.*

Lin. gen. n. 1168. *Reich. n.* 1283. *Schreb. n.* 1613. *Tournef. t.* 420. *Hire act. gall.* 1712. *t.* 15. *Ponted. anth.* 11. *f.* 10. *Juſſ.* 400. *Gærtn. t.* 91. & 179.—Caprificus. *Pont. ibid.*

Claſſ. 23. 3. Polygamia Trioecia.

Nat. order of *Scabridæ.*—*Urticæ.* Juſſ.

GENERIC CHARACTER.

Cal. *common* obovate, very large, fleſhy, concave; cloſed with very many ſemilanceolate, ſharp, ſerrate, inflex *ſcales.* The inner ſurface is covered with *floſcules*, the outer of which, or thoſe which are nearer to the edge of the calyx, are *male*; theſe are fewer in number: the reſt, lower down, are *female*, and more numerous.

Male, each on its proper peduncle.

Cal. *Perianth proper* three-parted, erect (bell-ſhaped, trifid. *G.*): *diviſions* lanceolate, erect, equal.

Cor. none.

Stam. *Filaments* three, briſtle-ſhaped, length of the calyx. *Anthers* twin.

Pist. *Rudiments* caducous, intorted.

Female, each on its proper peduncle.

Cal. *Perianth proper* five-parted (bell-ſhaped, quinquifid. *G.*): *diviſions* lanceolate-acuminate, ſtraight, nearly equal.

Cor. none.

Pist. *Germ* (half-inferior, *G.*) oval, the ſize of the proper perianth. *Style* ſubulate (briſtle-ſhaped, *G.*), inflex, coming out from the germ at the ſide of the tip. *Stigmas* two, acuminate, reflex; one ſhorter than the other.

Per. none. *Calyx* oblique, containing in its boſom a ſeed, larger?

Seed ſingle, roundiſh, compreſſed.

Obs. Caprificus *comprehends within a common calyx only male flowers within a diſtinct plant.*

Erinoſyce *has ſome flowers compound male, others female, on a diſtinct plant.*

ESSENTIAL CHARACTER.

Receptacle common turbinate, fleſhy, converging, concealing the floſcules, either on the ſame or a diſtinct individual.

Male. *Cal.* three-parted. *Cor.* none. *Stam.* three.

Fem. *Cal.* five-parted. *Cor.* none. *Piſt.* one. *Seed* one.

SPECIES.

1. Ficus Carica. *Common Fig-tree.*
   Lin. ſpec. 1513. *Reich.* 4. 364. *hort. cliff.* 471. *upſ.* 305. *mat. med.* 223. *amœn.* 1. 24. *Gouan monſp.* 521. *Hall. helv. n.* 1607. *Scop. carn. n.* 1251. *Pallas roſs.* 1. 2. 44. *Gærtn. fruct.* 2. 66. *Blackw. t.* 125. *Mill. illuſtr. Ehret. dec. t.* 73, 74. *Duham. arb.* 1. 218. *f.* 1, 2. *Woodv. med. bot.* 354. *t.* 130. *Lour. cochinch.* 664. *Thunb. monogr. n.* 26.
   Ficus. *Dod. pempt.* 812. *Ger.* 1327. *emac.* 1510. *Bauh. hiſt.* 1. 128. *Raii hiſt.* 1431.—communis. *Bauh. pin.* 457.—vulgaris. *Park. theat.* 1493. *t.* 1494. *f.* 1. *parad.* 566.—ſativa. *Fuchſ. hiſt.* 754. *t.* 755.
   α. Caprificus. *Bauh. hiſt.* 1. 134. *f.* 128. F. ſylveſtris. *Bauh. pin.* 457. *Raii hiſt.* 1433. 2.
   β. F. humilis. *Bauh. pin.* 457.
   Chamæficus. *Bauh. hiſt.* 1. 128. *f.* 2. *Ger. emac.* 1510. *f.* 2. *Park. theat.* 1494. *f.* 2. *n.* 4.
   Leaves palmate-ſubtrilobate, rugged underneath, fruits ſmooth, pear-ſhaped, umbilicated.
2. Ficus Sycomorus. *Egyptian Fig-tree* or *Sycomore.*
   Lin. ſpec. 1513. *ſyſt.* 921. *amœn.* 1. 26. *n.* 3. *Lour. cochinch.* 664. *Haſſelqu. itin.* 495. *edit. engl.* 259. *Gron. orient.* 329. *Pluk. phyt. t.* 178. *f.* 3. *Burm. ind.* 225.

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[a] Juſſieu.

[b] Linn. amoen.

[c] Swartz.

[d] Browne.

Ficus cypria. *Rauw. itin. t.* 57. *Bauh. hiſt.* 1. 124. *f.* 3. *Park. theat.* 1492. 2. 1493. *f.* 2. *Raii hiſt.* 1439. 2. *Lin. amœn.* 1. 27. *n.* 4.
F. fol. Mori, fructum in caudice ferens. *Bauh. pin.* 459. *Raii hiſt.* 1439.
Sycomorus. *Bauh. hiſt.* 1. 124. *Cam. epit.* 180. *Lob. ic.* 197. *Ger.* 1326. *emac.* 1509. (not the fig.) *Park. theat.* 1492. 1493. *f.* 1.
Leaves cordate, roundiſh, quite entire, tomentoſe underneath, fruits ſeſſile.

3. Ficus nymphæifolia. *Water-lily-leaved Fig-tree.*
Lin. ſyſt. 921. *Reich.* 365. *mant.* 305. *hort. cliff.* 471. *n.* 3.
F. nymphoides. *Thunb. Ficus n.* 2.
Leaves ovate, cordate, mucronate, quite entire, ſmooth, glaucous underneath.

4. Ficus religioſa. *Poplar-leaved Fig-tree.*
Lin. ſpec. 1514. *Reich.* 365. *mant.* 504. *hort. cliff.* 471. *amœn.* 1. 30. *n.* 16. *Thunb. mon. n.* 3. *Gærtn. fruct.* 2. 484. *Lour. cochinch.* 665. *Pluk. alm. t.* 178. *f.* 2. *Rheed. mal.* 1. 47. *t.* 27. *Raii hiſt.* 1434.
Leaves ovate, cordate, cuſpidate, ſmooth, fruits ſeſſile.

[5. Ficus benjamina. *Oval-leaved Fig-tree.*
Lin. ſyſt. 921. *Reich.* 366. *mant.* 129. 519. *Thunb. mon. n.* 15. *Lour. cochinch.* 665. *Pluk. alm. t.* 243. *f.* 4. *Rheed. mal.* 1. 45. *t.* 26. *Rumph. amb.* 3. 139. *t.* 90.
F. microcarpa. *Lin. ſyſt.* 922. ſee *n.* 23.
Leaves elliptic, obtuſe, ſmooth, fruits acute, ſeſſile.]

6. Ficus bengalenſis. *Bengal Fig-tree.*
Lin. ſpec. 1514. *Reich.* 366. *hort. cliff.* 471. *amœn.* 1. 29. *Lour. cochinch.* 665. *Thunb. monogr. n.* 5. *Trew. ehr. t.* 50. *Pluk. phyt. t.* 178. *f.* 1. *Comm. hort.* 1. *t.* 62. *Rheed. mal.* 1. 49. *t.* 28.
F. vaſta. *Forſk. deſcr.* 179.
Leaves ovate, cordate, quite entire, ſmooth, blunt, coriaceous, ſtem arboreous, erect.

[7. Ficus pedunculata. *Willow-leaved Fig-tree.*
Ait. hort. kew. 3. 450. *Pluk. alm. t.* 178. *f.* 4.
Leaves ovate-oblong, cordate, quite entire, ſharp, ſmooth, fruits globular, peduncles in pairs, elongated.

8. Ficus lucida. *Shining-leaved Fig-tree.*
Ait. hort. kew. 3. 451.
Leaves ovate, cordate, quite entire, ſmooth, blunt, three-nerved at the baſe, branches upright.]

9. Ficus indica. *Indian Fig-tree.*
Lin. ſpec. 1514. α. *Reich.* 366. *amœn.* 1. 27. *n.* 6. *Thunb. mon. n.* 20. *Lour. cochinch.* 665. *Bauh. pin.* 457. *n.* 8. *Tabern. hiſt.* 1370. *Rheed. mal.* 3. 73. *t.* 57. *Raii hiſt.* 1437. *n.* 4. *Bauh. hiſt.* 1. 145. *Ger.* 1331. *emac.* 1514. *Park. theat.* 1499.
Leaves oblong, rounded at the baſe, ſmooth and even, quite entire, ſomewhat glaucous underneath, impreſſed with dots above, fruits almoſt globular.

10. Ficus virens. *Round-fruited Fig-tree.*
Ait. hort. kew. 3. 451. *Sloan. jam.* 2. 140. *t.* 223. *Raii dendr.* 16. 5. *Brown. jam.* 110. *n.* 5? *Lin. amoen.* 1. 28. *n.* 14.
F. indica. β. *Lin. ſpec.* 1514.
F. maxima. *Mill. dict. n.* 6.—& citrifolia, *n.* 10?
Leaves oblong, acuminate, quite entire, ſmooth and even, narrowed and rounded at the baſe.

[11. Ficus venoſa. *Waved-leaved Fig-tree.*
Ait. hort. kew. 3. 451. *Rheed. malab.* 3. 87. *t.* 64.
Leaves ovate, ſomewhat cordate, ſharp, quite entire, ſmooth and even, impreſſed with dots on the upper ſurface.

12. Ficus coſtata. *Upright heart-leaved Fig-tree.*
Ait. hort. kew. 3. 452.
Leaves ovate, cordate, with a deep narrow ſinus; quite entire, ſmooth, ſharp, green on both ſides.]

13. Ficus racemoſa. *Red-wooded Fig-tree.*
Lin. ſpec. 1515. *ſyſt.* 922. *Reich.* 367. *amœn.* 1. 30. *n.* 17. *Thunb. mon. n.* 17. *Rheed. mal.* 1. 43. *t.* 25. *Raii hiſt.* 1434. 1.
Leaves ovate, quite entire, ſharp, impreſſed with dots; ſtem arboreous.

[14. Ficus pertuſa. *Laurel-leaved Fig-tree.*
Lin. ſyſt. 922. *ſuppl.* 442. *Thunb. monogr. n.* 13. *Rheed. mal.* 3. *t.* 56?
Leaves ovate, ſmooth, calyxes bifid, berries globular, umbilicated with a hole.

15. Ficus retuſa. *Blunt-leaved Fig.*
Lin. ſyſt. 922. *Reich.* 367. *mant.* 129. *Thunb. mon. n.* 18.
Leaves obovate-oblong, extremely obtuſe, branches angular, fruits ſeſſile.]

16. Ficus pumila.
Lin. ſpec. 1515. *Reich.* 368. *amœn.* 1. 30. *n.* 15. *Thunb. monogr.* 10. *jap.* 33. *Kæmpf. amœn.* 803. (Itabu.) *Lour. cochinch.* 667? *Burm. ind.* 226.
Leaves oblong-ovate, blunt, ſmooth, netted underneath, ſtem decumbent, fruits peduncled.

[17. Ficus toxicaria.
Lin. ſyſt. 922. *Reich.* 368. *mant.* 305.
F. toxica. *Thunb. monogr. n.* 27.
F. padana. *Burm. ind.* 226.
Leaves cordate-ovate, ſomewhat toothletted, tomentoſe underneath.

18. Ficus maculata.
Lin. ſpec. 1515. *Reich.* 368. *Lour. cochinch.* 666. *Plum. ſpec.* 21. *ic.* 131. *f.* 1. *Burm. ind.* 226. (ſee n. 20.)
Leaves oblong, acuminate, ſerrate.

19. Ficus trigona.
Lin. ſyſt. 922. *ſuppl.* 441. *Thunb. monogr. n.* 12. *Plum. ic.* 123. *t.* 132. *f.* 1.
Leaves elliptic, calyxes bifid, berries with a triangular navel.

20. Ficus hiſpida.
Lin. ſyſt. 922. *ſuppl.* 442. *Thunb. monogr. n.* 24.
Leaves oblong, petioled, ſharp, fruits ſtrigoſe-hiſpid.

21. Ficus ſtipulata. *Trailing Fig-tree.*
Ait. hort. kew. 3. 452. *Thunb. monogr. n.* 7.
Leaves obliquely cordate, obtuſe, ſmooth, ſtem decumbent, ſcaly.

22. Ficus heterophylla. *Rough-leaved Fig-tree.*
Lin. ſyſt. 922. *ſuppl.* 442. *Thunb. monogr. n.* 25. *Rheed. mal.* 3. 83. *t.* 62.
Leaves oblong, undivided, three-lobed and ſinuate, ſcabrous, ſtem hiſpid, fruit ovate, peduncled, ſcabrous.

23. Ficus microcarpa.
Lin. ſyſt. 922. *ſuppl.* 442.
Leaves oblong, on ſhort petioles, three-nerved, veined, very ſmooth, fruit globular, ſmall, ſeſſile.

24. Ficus coriacea. *Leathery-leaved dwarf Fig-tree.*
Ait. hort. kew. 3. 453.
Leaves oblong, ſmooth and even, attenuated at the baſe, cordate, leathery, veins immerſed.

25. Ficus ſcabra.
Forſt. fl. auſtr. n. 403.
Leaves cordate-ovate, oblique, entire, ſcabrous underneath, fruits turbinate, without calyxes.

26. Ficus aſpera.
Forſt. pl. eſcul. 7. *fl. auſtr. n.* 404. *Thunb. monogr. n.* 4.
Leaves obliquely cordate, ſinuate-toothed, rough on both ſides, fruits turbinate, the edge of the calyx obſcure, and growing to them.

27. Ficus tinctoria.
Forſt. fl. auſtr. n. 405.
Leaves obliquely ovate, obtuſe, fruits turbinate, calycled at the baſe.

28. Ficus ſeptica.
Forſt. fl. auſtr. n. 407.
Leaves oblique, oblong-ovate, acuminate, peduncles in pairs, calycled at the tip, fruits warted.

29. Ficus Granatum.
Forſt. fl. auſtr. n. 408. *eſcul.* 37.
Leaves ovate, quite entire, peduncles terminating in pairs, horizontally diverging, fruits calycled, globular.

30. Ficus obliqua.
Forſt. fl. auſtr. n. 409.
Leaves lanceolate, very ſmooth, cartilaginous at the edge, peduncles in pairs, very ſhort, calyxes caducous, the length of the fruit.

31. Ficus prolixa.
Forſt. fl. auſtr. n. 410.
Leaves lanceolate-oblong, acuminate, dotted underneath, peduncles in pairs, calycled at the tip.]

32. Ficus calyculata.
Mill. dict. n. 11. *Houſt. Mſs.*
Leaves ovate, quite entire, obtuſe, oppoſite, fruit globular, calycled.

[33. Ficus americana.
Swartz prodr. 127. *Aubl. guian.* 2. 952. *Plum. ſpec.* 124. *t.* 132. *f.* 2. *Sloan. jam.* 2. 140. *n.* 5. *Raii dendr.* 16.
Leaves ovate, oblong, veined, quite entire, fruits axillary, peduncled, cluſtered.

34. Ficus erecta.
Thunb. monogr. 11. *in Linn. tranſ.* 2. 327. *Kæmpf. ic. ſelect. t.* 4.
F. pumila. *Linn. ſyſt.* 922. β. *Thunb. jap.* 33.
Leaves oblong, acute, ſmooth, netted beneath, ſtem decumbent, with upright branches, fruits peduncled.

35. Ficus ſtipulata.
Thunb. monogr. n. 7. *Linn. tranſ.* 2. 327.
Leaves obliquely cordate, obtuſe, ſmooth, ſtem decumbent, ſcaly.

36. Ficus auriculata.
Lour. cochinch. 666. *Rumph. amb.* 3. *t.* 93.
Leaves heart-ſhaped, acuminate, fruit eared, racemed, terminating.

37. Ficus politoria.
Lour. cochinch. 667. *Rumph. amb.* 3. *t.* 63. *Burm. ind.* 226.
Leaves oblong-ovate, quite entire, rugged, fruit roundiſh, in ſpikes, ſtem erect.

38. Ficus ſimpliciſſima.
Lour. cochinch. 667.
Leaves palmate, ſtem quite ſimple, fruit compreſſed.

39. Ficus cannabina.
Lour. cochinch. 668.
Stem-leaves haſtate, gaſhed, branch-leaves ovate-lanceolate, ſubſerrate, ſtem ſuberect.

40. Ficus populifolia.
Vahl ſymb. 1. 82. *t.* 22.
F. religioſa. *Forſk. deſcr.* 180.
Leaves finely cordate, acute, fruits in pairs, pedicelled.

41. Ficus mollis.
Vahl ſymb. 1. 82.
Leaves oblong, quite entire, villoſe underneath, fruits axillary, ſeſſile, tomentoſe.

42. Ficus ſalicifolia.
Vahl ſymb. 1. 82. *t.* 23.
F. indica. *Forſk. deſcr.* 179.
Leaves lanceolate, acuminate, fruits in pairs, axillary, peduncled.

43. Ficus ſagittata.
Vahl ſymb. 1. 83.
Leaves heart-ſhaped, oblong, acute, rugged on both ſides, ſtem creeping.

44. Ficus denticulata.
Vahl ſymb. 1. 83.
Leaves oblong, undivided, three-lobed and ſinuate, toothletted, rugged, fruit peduncled, muricated, globular.

45. Ficus truncata.
Vahl ſymb. 1. 83.
Leaves oblong, undivided and lobed, quite entire, rugged, fruits peduncled, oblong, truncated, rugged.

46. Ficus ſerrata.
Vahl ſymb. 1. 83. *Forſk. deſcr.* 179.
Leaves oblong, undivided and palmate, repand-toothed, rugged, fruit peduncled, globular, very rugged.

47. Ficus palmata.
Vahl ſymb. 1. 84. *t.* 24. *Forſk. deſcr.* 179.
Leaves cordate-ovate and lobed, ſerrate, fruits pear-ſhaped, peduncled, ſmooth.

48. Ficus cordata.
Thunb. monogr. n. 6.
Leaves ſubcordate, ovate, acute, ſmooth, coriaceous, ſtem ſhrubby, erect.

49. Ficus falcata.
Thunb. monogr. n. 8.
Leaves oblong, ſickle-ſhaped, ſmooth, ſtem filiform, rooting.

50. Ficus punctata.
Thunb. monogr. n. 9.
Leaves oblong, emarginate, ſmooth, dotted underneath; ſtem flexuoſe, rooting.

51. Ficus nitida.
Thunb. monogr. n. 14.
Leaves elliptic, acute, ſmooth; fruits retuſe-umbilicate, ſeſſile.

52. Ficus reflexa.
Thunb. monogr. n. 16.
Leaves elliptic, obtuſe, ſmooth; branches recurved; fruits globular, ſeſſile.

53. Ficus drupacea.
Thunb. monogr. n. 19.
Leaves obovate, cuſped, ſmooth, fruits ovate, wrinkled; ſeſſile.

54. Ficus reticulata.
Thunb. monogr. n. 21.
Leaves elliptic, ſomewhat angular, cuſped, ſmooth; netted underneath, fruits globular, ſolitary, peduncled.

55. Ficus ſinuata.
Thunb. monogr. n. 22.
Leaves elliptic, ſinuate-toothed, cuſped; ſmooth, fruits globular, aggregate, peduncled.

56. Ficus capenſis.
Thunb. monogr. n. 23.
Leaves ovate, acute; ſmooth, ſerrate, fruits peduncled, ſmooth.

DESCRIPTIONS, &c.

Linneus tells us, that he removed this genus from the claſs Cryptogamia to Polygamia, on account of the different ſtructure of the fructification, the ſpreading *umbilicus*, navel, or opening of the receptacle in ſome ſpecies, its want of genuine affinity to the plants of the claſs Cryptogamia, and by the advice of Baron Munchauſen, a very acute Botaniſt. —Some modern authors have again removed the genus into the claſs *Triandria.*

There are two treatiſes expreſsly on this genus, one in the firſt volume of the Amoenitates Academicæ, in 1744; and the ſecond by Thunberg in 1786.

Figs are either trees or ſhrubs, abounding in a milky juice; the branches alternate; the leaves alſo alternate, when young incloſed within ſheathing ſtipules convoluted into a terminating horn, frequently ſoon caducous, and the veſtiges of them remaining: fruit turbinate or globular, often axillary, either ſolitary or crowded, either ſeſſile or peduncled, ſometimes but ſeldom in terminating bunches [a].

Fruit, according to the deſcription of Gærtner, turbinate, umbilicate at the top, fleſhy, ſoft, hollow within. The pericarp is a very ſmall berried drupe, or rather utricle, on a filiform peduncle, covered with the calyx above the middle, and terminated by the permanent ſtyle: rind fleſhy-gelatinous, ſubpellucid, finally drying up; ſhell cruſtaceous, ſlender, brittle, reſembling a ſeed, which is of the ſame ſhape, namely ovate, narrowing upwards, compreſſed like a lens, with an umbilical hole below the tip; the embryo ſomewhat cylindric, hooked, inverted, the lobes ſemicylindric, lying down, bowed [b].

The common Fig-tree is, in all probability, originally a native of Aſia, though it has been introduced into Europe in the very early ages; the Sycomorus is the growth of Egypt: ſome of the other ſpecies are found in South America and the Eaſt Indies, two at the Cape of Good Hope, three in Japan, and ſome in the South Sea iſlands; but the greater part are natives of the Eaſt Indies; the fruit of moſt of them is ſmall and uſeleſs for eating.

1. The common Fig-tree ſeldom exceeds two yards in height. The trunk is about the thickneſs of the human arm; the wood porous and ſpongy, the bark aſh-coloured, full of chinks, and rugged. Branches ſmooth, with oblong white dots, erect or aſcending, flexuoſe, and bent back. Stipules in pairs, ſeſſile, ovate, acute, ferruginous, caducous.

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[a] Juſſieu.

[b] Gærtner.

Leaves annual (in Europe, but within the tropics perennial) cordate, ovate, three or five-lobed, with rounded ſinuſes, ſerrate-toothed, paler underneath, rugged on both ſides, ſpreading, the ſize of the hand, or a ſpan in length. Petioles round, grooved, about an inch in length. Fruits axillary, ſolitary, the ſize of a pear, on very ſhort round peduncles[e]. Cordus firſt remarks the flowers produced within the fruit[d].

The Fig-tree has the ſame name in all the European languages, but little varied. In German, *Feigenbaum* or *Figenboom.* In Daniſh, *Figentræ.* In Swediſh, *Fikonträ.* In French, *Le Figuier.* In Italian, *Fico* or *Figo.* In Spaniſh, *Higuera.* In Portugueze, *Figueira.* In Ruſſian, *Finik.* In Poliſh, *Figa.* In Turkiſh it is *Ingir.* In Arabic, *Tin.*

Native of Aſia, Barbary, the ſouthern parts of Europe, Louiſiana, &c.

The firſt figs introduced into England are ſtill remaining in the Archbiſhop's garden at Lambeth. They are of the white Marſeilles kind, and ſtill bear delicious fruit. They cover a ſurface fifty feet in height, and forty in breadth. The circumference of the trunk of the ſouthernmoſt is twenty-eight inches, of the other twenty-one. On the South ſide of the building is another tree of the ſame age; its circumference at bottom twenty-eight inches. Tradition ſays, they were planted by Cardinal Pole, and it is very probable; for it is generally allowed that Fig-trees were brought into England in the reign of Henry the Eighth, and it ſeems likely that the Cardinal, who had long reſided in Italy, ſhould be fond of cultivating thoſe fruits to which he had been there accuſtomed[f]. To the objection ariſing from their great age, it may be anſwered, that we do not well know how long a Fig-tree will flouriſh, if properly cultivated. There is alſo a concurrent tradition of an older tree, and inſtances of two very ancient ones, the times of whoſe plantation is well aſcertained.—1. At Mitcham, in the garden of the Manor-houſe, formerly the private eſtate of Archbiſhop Cranmer, and now belonging to one of his deſcendants. It is likewiſe of the white ſort, and is confidently aſſerted to have been planted by Archbiſhop Cranmer. Its branches are very low, but its ſtem, which meaſures thirty inches in girt, has every mark of great age[g].—2. In the Dean's garden at Wincheſter, there was in the year 1757 a very ancient Fig-tree, whoſe fruit was of the ſmall red ſort. It was incloſed in a wooden frame, with a glaſs door and two windows on each ſide of it for the admiſſion of ſun and air. The frame protected it from wind and rain. On the ſtone wall to which the tree was nailed there was a plaiſtering, and ſeveral inſcriptions, one of which mentioned, that in the year 1623 King James I. " taſted of the fruit " of this tree with great pleaſure." It has been ſuffered to periſh for want of neceſſary repairs to the frame-work.—3. At Oxford, in the garden of the Regius Profeſſor of Hebrew, is a Fig-tree brought from the Eaſt, and planted by Dr. Pocock in the year 1648. It is in a thriving condition, and bears a black fig[h]:

I was informed (nov. 18. 1792.) by the learned Dr. John Sibthorp, late Regius Profeſſor of Botany at Oxford, that it bears the marks of great age; that the trunk is perforated by inſects, and damaged by time and weather; but that the branches of the new wood were clean, made vigorous ſhoots, and produced a number of ſmall figs, which were touched by the froſt, and were then falling off. The fruit is not, as Groſe aſſerts, *black*; but *white*.

We learn alſo from Turner's herbal, that the Fig was cultivated here in 1562[i]. Gerarde ſays, in 1597, " that the fruit never cometh to kindly maturity with us, except the tree be planted under " an hot wall, whereto neither north nor north-eaſt " winds can come." Parkinſon alſo in 1629 ſays; " that if you plant it not againſt a brick wall, or " the wall of an houſe, it will not ripen ſo kindly: " that the dwarf fig is more tender, and is therefore " planted in great ſquare tubs, to be removed into " the ſun in the ſummer time, and into the houſe " in winter." In his time only three ſorts were known. " 1. Figs of Algarva, ſweet and delicate, " blewiſh when ripe. 2. The white ordinary ſort " that cometh from Spain. 3. The dwarf fig, not " higher than a man's ſhoulders, bearing excellent " blew fruit, but not ſo large as the firſt[k]."]

Mr. Miller informs us, that there are many varieties in the warm countries, which have been obtained from ſeeds, and might be increaſed, if the inhabitants were careful in propagating the trees from the ſeeds of the beſt ſorts. In England we had not more than four or five ſorts till within a few years paſt: for as the generality of the Engliſh were not lovers of this fruit, there were few who troubled themſelves with the culture of it. But ſome years paſt I had a large collection of theſe trees ſent me from Venice, by my honoured friend the Chevalier Rathgeb, which I planted and preſerved to taſte of their fruits, ſeveral of which proved excellent; theſe I have preſerved and propagated, and thoſe whoſe fruit were inferior have been neglected. And as the variety of them is very great, ſo I ſhall here mention only ſuch of them as are the beſt worth cultivating, placing them in the order of their ripening.

1. The brown or Cheſtnut-coloured Iſchia Fig. This is the largeſt fruit of any I have yet ſeen, it is ſhort, globular, with a pretty large eye, pinched in near the foot-ſtalk, of a brown or Cheſtnut colour on the outſide, and purple within; the grains are large, and the pulp ſweet and high-flavoured; this ſort very often burſts open when it ripens: which it does the end of july, or the beginning of auguſt. I have had this fruit ripen well on ſtandards, in a warm ſoil. If it is planted againſt hot walls, two plentiful crops of fruit may be annually ripened.

2. The black Genoa Fig. This is a long fruit, which ſwells pretty large at the top, where it is obtuſe, but the lower part is very ſlender toward the ſtalk; the ſkin is of a dark purple colour, almoſt black, and has a purple farina over it like that on ſome Plumbs; the inſide is of a bright red, and the fleſh is very high flavoured. It ripens early in auguſt.

3. The ſmall white early Fig. This has a roundiſh fruit a little flatted at the crown, with a very ſhort foot-ſtalk; the ſkin, when fully ripe, is of a pale yellowiſh white colour; the ſkin is thin, the inſide white, and the fleſh ſweet, but not high-flavoured. This ripens in auguſt.

4. The large white Genoa Fig. This is a large globular fruit, a little lengthened toward the ſtalk; the ſkin is thin, of a yellowiſh colour when fully ripe, and red within. This is a good fruit, but the trees are not good bearers.

5. The black Iſchia Fig. This is a ſhort fruit, of a middling ſize, a little flatted at the crown; the ſkin is almoſt black when ripe, and the inſide is of a deep red; the fleſh is very high flavoured, and the trees produce a good crop of fruit, but the birds are great devourers of them, if they are not protected. This ripens in auguſt.

6. The Malta Fig. This is a ſmall brown fruit, much compreſſed at the top, and greatly pinched toward the foot-ſtalk; the ſkin is of a pale brown colour, as is alſo the inſide; the fleſh is very ſweet, and well flavoured. If this ſort is permitted to hang upon the trees till the fruit is ſhrivelled, it becomes a fine ſweetmeat.

7. The Murrey, or brown Naples Fig. This is a pretty large globular fruit, of a light brown colour on the outſide, with ſome faint marks of a dirty white, the inſide is nearly of the ſame colour; the

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[e] Thunb. diſſ. de Ficu.

[d] Linn. amoen.

[f] Cardinal Pole returned from Italy to England in 1525.

[g] It has been demoliſhed ſeveral years. 1792.

[h] Groſe's antiqu. vol. 3. and Ducarrel's hiſt. of Lambeth palace, p. 77, 78. by whom the above particulars were communicated in 1773.

[i] Hort. kew.

[k] Parad. 567.

grains are pretty large, and the fleſh is well flavoured. It ripens the latter end of auguſt.

8. The green Iſchia Fig. This is an oblong fruit, almoſt globular at the crown; the ſkin is thin, of a green colour; but when it is fully ripe, it is ſtained through by the pulp to a browniſh caſt; the inſide is purple, and will ſtain linen, or paper; the fleſh is high flavoured, eſpecially in warm ſeaſons. It ripens toward the end of auguſt.

9. The Madonna Fig, commonly called here the Brunſwick, or Hanover Fig, is a long pyramidal fruit of a large ſize; the ſkin is brown; the fleſh is of a lighter brown colour, coarſe, and has little flavour. This ripens the end of auguſt, and the beginning of ſeptember; the leaves of this ſort are much more divided than of moſt others.

10. The common blue, or purple Fig, oblong; the tree a great bearer; the fruit ripens in auguſt.

11. The long brown Naples Fig. The leaves of this tree are deeply divided. The fruit is long, ſomewhat compreſſed at the crown. The foot-ſtalks are pretty long; the ſkin is of a dark brown when fully ripe, the fleſh inclining to red; the grains are large, and the fleſh well flavoured. It ripens in ſeptember.

12. The yellow Iſchia Fig. This is a large fruit, of a pyramidal form; the ſkin is yellow when ripe, and the fleſh is purple and well flavoured, but the trees do not produce much fruit here; they grow very luxuriant in branches, the leaves are very large, and not much divided. This ripens in ſeptember.

13. The ſmall Brown Iſchia Fig. This is a ſmall pyramidal fruit, with a very ſhort foot-ſtalk; the ſkin is of a light brown, the fleſh inclining to purple, of a very high flavour; it ripens late in ſeptember; the leaves of this tree are leſs divided than any of the other ſorts. This is not a good bearer.

14. The Gentile Fig. This is a middle ſized globular fruit; the ſkin, when ripe, is yellow; the fleſh alſo inclines to the ſame colour; the grains are large, and the fleſh is well flavoured, but it ripens very late, and the trees are bad bearers, ſo that it is not propagated much in England.

There are ſeveral others which have been lately introduced from Italy, but all thoſe which I have yet taſted, are inferior to thoſe above-mentioned; ſome of them rarely ripen their fruit, and others are very ill bearers, not worth propagating, therefore I have omitted the mentioning of them here; for as thoſe which are enumerated, continue in ſucceſſion during the ſeaſon for theſe fruits, and are preferable to the others, few perſons will care to fill their gardens with a greater variety of theſe trees than are of real uſe, eſpecially as they require good walls, and a very large ſhare of room.

2. The Egyptian or Pharaoh's Fig-tree or Sycomore is a large tree, with leaves like thoſe of the Mulberry.

[The ſtem is often fifty feet thick; and as it ſpreads out its boughs very much, it is of great uſe in a ſcorching climate to ſhade thoſe who travel through the deſarts. The Mummies in Egypt are preſerved in coffins of this wood, which is of a reddiſh colour, light, and very proper for this uſe, becauſe it does not rot for many ages. The fruit] is produced from the trunk and larger branches, and is ſhaped like the common Fig; it [is pierced by an inſect (Cynips ſycomori) a little before it ripens, in two different ways; either the ſcales which cover the calyx wither, and are bent back, as in the common fig, for the admiſſion of the inſect; or, which is more common in this ſpecies, a little below the ſcales on the ſide of the involucre the fruit is affected with a gangrene, which extends itſelf, and frequently occupies the ſpace of a finger's breadth; it withers, the place affected becomes black, the fleſhy ſubſtance in the middle is corroded, for the breadth of a quill, and the male bloſſoms, which are neareſt, appear naked, opening a way for the inſect, which makes ſeveral furrows in the inſide of the fruit, but never touches the ſtigmas, though it frequently eats the germs. The gangrænous part is at firſt covered by the bloſſoms, but the hole is by degrees enlarged, of various ſizes, in different fruits, the margin and ſides being always gangrænous, black, hard, and turned inwards. The fruit taſtes pretty well; when quite ripe it is ſoft, watery, ſomewhat ſweet, with a very little portion of an aromatic flavour: though fleſhy enough, yet but little of it is good, the inſects having eaten much of it. At the end of march it buds, and the fruit ripens the beginning of june: the inhabitants wound or cut it when it buds, and ſay that without this precaution it will not bear fruit[l]. We call it in Engliſh Sycomore tree, and Mulberry Fig-tree. This, and not the Great Maple, is the right Sycomore[m].

Native of Egypt, the Levant and Cochinchina. Cultivated by Mr. Miller in 1736[n].]

3. This riſes with a ſtrong, upright, woody ſtem twenty feet high, ſending out ſeveral ſide branches, which have large, oval, thick, ſtiff leaves [as big as thoſe of yellow Water-Lily, waved a little about the edge, blunt with a point, hanging down, as it were peltate, ſmooth, whitiſh underneath[o],] about fourteen inches long, and near a foot broad, having ſeveral tranſverſe veins: the foot-ſtalks are a ſpan long, and more, compreſſed, ſmooth, and frequently turned next to the branches. Native of the Eaſt-Indies; whence it was brought to the gardens in Holland [and cultivated in 1759, by Mr. Miller[p].

4. This is a large tree, with a ſhort trunk, and very long ſpreading boughs. Leaves ſmooth,] of a light green, ſix or ſeven inches long, and three inches and a half broad towards the baſe, diminiſhing gradually to the top, where they run out into a narrow point, an inch and half long. The fruit comes out on the branches, is ſmall, and of no value: [According to Gærtner, it is the ſize of a ſmall hazel nut, ſlightly turbinate, (yellow, dotted;) when dry becoming thin, the ſubſtance of paper, of a dun colour, defended at the baſe with a one-leafed floral bracte repandly lobed; and having at the top three minute converging ſcalelets, cloſing the aperture there. The internal cavity is filled with florets. The female florets are trifid, and of a blackiſh brown colour. The ſeeds are ſmall, globular, whitiſh, ſmooth, cruſtaceous, fixed by a long, capillary, umbilical chord.—According to Linneus it is the ſhape and ſize of peas, axillary, ſolitary, or aggregate. Calyx inferior, three-leaved[q].

Native of the Eaſt-Indies and Cochinchina.—Cultivated in 1731, by Mr. Miller[r].

5. This is a middle-ſized tree. Branches ſlender, flexuoſe, ſtreaked and wrinkled. Leaves petioled, exactly ovate, entire, very ſlenderly ſtreaked acroſs, with the edge diſtinct and ſmooth, perennial, and like thoſe of the pear; on very ſhort ſubtrigonal petioles. Fruits globular, ſcattered on the branchlets. Native of the Eaſt-Indies[s]. Cultivated in 1757, by Mr. Miller[t].

66. Stem ſhrubby, round, upright, all ſmooth, a fathom in height. Branches like the ſtem. Leaves ſomewhat waved, nerved, the ſize of the hand; on a ſemicylindric petiole, half an inch in length[u].

Native of the Eaſt-Indies, and cultivated 1692, in the Royal Garden at Hampton Court.

7. Native of South America. Introduced 1776, by Hugh Duke of Northumberland.

8. Native of the Eaſt-Indies. Introduced 1772, by Mr. William Malcolm[x].

9. This vaſt tree is entirely ſmooth, the branches ſpreading very wide, bowed down, the lower ones rooting, aſh-coloured. Leaves acuminate, with a blunt point, obſcurely waved, marked with parallel nerves, paler underneath, a ſpan long, on ſemicylindric, aſh-coloured petioles, of a finger's length. Fruits aggregate here and there on the branchlets, peduncled, the ſize of a hazel nut[y].

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[l] Haſſelquiſt.
[m] Gerarde's herbal.
[n] Hort. kew.
[o] Linn. mant.
[p] Hort. kew.
[q] Linn. mant.
[r] Hort. kew.
[s] Linn. mant. & Thunb. mon.
[t] Hort. kew.
[u] Thunb. mon.
[x] Hort. kew.
[y] Thunb.

It is called by the Engliſh Banyan tree, and *arbor de Rayz*, that is, the rooting tree, by the Portugueze; and it propagates itſelf, as Mr. Evelyn obſerves, into a foreſt, by letting a kind of gummy ſtring fall from its branches, which takes root, and thus ſpreads a vaſt circuit. This, however, is the caſe with the third, fourth, fifth, ſixth and tenth ſpecies, and perhaps others.—One of theſe growing near Mangee, twenty miles weſt of Patna in Bengal, was in diameter 370 feet; the circumference of the ſhadow at noon was 1116 feet; the circumference of the ſeveral ſtems, which were fifty or ſixty in number, 921 feet[z].

There is a vaſt tree of this kind near Fort St. David's in the Eaſt-Indies, which is computed to cover near 1700 ſquare yards. A very celebrated Banian tree is alſo growing near Gombroon on the Perſian Gulph.

The Gentoos are almoſt as ſenſibly hurt, if any one cuts or lops off any of the branches, as if he had mutilated or deſtroyed a cow, which he holds in ſo much veneration[a].

Hence another ſpecies is named by Linneus *religioſa*, being ſacred to the idol *Viſtnu*, who is ſaid to have been born under it[b].

From the manner of its growth, Gerarde names it the arched Indian Fig-tree.

Strabo mentions this tree, and ſays that the branches grow horizontally about twelve cubits, then taking a direction to the earth, where they root themſelves, and when they have attained maturity, continue to propagate in the ſame manner, till the whole becomes like a tent ſupported by many columns.

Pliny (l. 12. c. 5.) deſcribes this ſingular tree with his uſual elegance.—"Ficus ibi [in India] "exilia poma habet: ipſa ſe ſemper ferens, vaſtis "diffunditur ramis, quorum imi adeo in terram "curvantur, ut annuo ſpatio infigantur, novamque "ſibi propaginem faciant circa parentem in orbem "quodam opere topiario. Intra ſepem eam æſti- "vant paſtores, opacam pariter & munitam vallo "arboris, decora ſpecie ſubter intuenti, proculve, "fornicato ambitu. Superiores ejus rami in excel- "ſum emicant, ſylvoſa multitudine, vaſto matris "corpore ut LX. paſſus plerique orbe colligant, "umbra vera bina ſtadia operiant."

Milton ſeems to have had theſe claſſical deſcriptions in his eye:—

> "Branching ſo broad and long, that in the ground
> "The bending twigs take root; and daughters grow
> "About the mother tree; a pillared ſhade,
> "High over-arched, with ecchoing walks between.
> "There oft the Indian herdſman, ſhunning heat,
> "Shelters in cool; and tends his paſturing herds
> "At loop-holes cut through thickeſt ſhade."

Native of the Eaſt-Indies and Cochinchina. Cultivated in 1759, by Mr. Miller[c].]

10. This riſes to the height of thirty or forty feet, ſending out many ſlender branches, which put out roots. Leaves eight or nine inches long, and two inches broad.

[The fruit is not bigger than a hazel-nut, of a ſcarlet or carnation colour, the taſte ſweetiſh, and not unpleaſant. It is much coveted by the Wild Pigeons[d].

Native of the Weſt-Indies. Introduced about 1762, by Mr. James Gordon.

11. 12. Natives of the Eaſt-Indies. Introduced in 1763, by Mr. John Buſh[e].

13. Branches round, ſmooth, ferruginous, upright; branchlets ſcattered, ſhort. Leaves oblong, nerved, ſmooth, pale underneath, from an inch to three inches and more in length, on round, grooved petioles, from half an inch to an inch long. Fruits in racemes, globular, almoſt the ſize of a plum[f].

Native of the Eaſt-Indies. Cultivated in 1759, by Mr. Miller[g].

14. A ſmall tree, with ſtriated ſpreading branches. Leaves acuminate, ovate-oblong, entire, very ſmooth, with parallel nerves, on round, grooved petioles. Fruit red, the ſize of red currants, ſcattered in racemes, very abundant, pedicelled[h].

Native of South America. Introduced about 1780[i].

15. Leaves petioled, leathery, ſmooth and even, quite entire. Fruits on the branches, diſperſed; with a three-leaved, approximating calyx. Native of the Eaſt-Indies[k].

16. Stem creeping, rooting, round, full of chinks, aſh-coloured, ſmooth. Branches few, like the ſtem. Leaves entire, coriaceous, paler beneath, petioled. The ſmall branches at the leaves ſurrounded with an elevated ſtreak. Peduncles axillary, filiform, ſolitary. Calyx inferior, three-leaved. Fruits ovate, ſmooth, the ſize of a plum.—Native of China and Japan[l].

17. A middle-ſized ſhrub, with round, ſmooth, ferruginous branches. Leaves acute, ſinuate-angular, gaſh-lobed, villoſe above, white-tomentoſe underneath, a ſpan and more in length, on round, ſtriated, ſubtomentoſe petioles. Fruits ovate, tomentoſe, the ſize of a plum, on thick, tomentoſe peduncles[m].

This is ſaid to be extremely poiſonous. It grows near Padan in Sumatra[n].

18. A middle-ſized tree, with upright ſtem and branches. Leaves large, rough, alternate, petioled. Fruit middle-ſized, turbinate, brown, axillary, ſolitary[o].

Native of America. According to Thunberg the maculata and hiſpida of Syſt. veget. are one and the ſame plant.

19. This is a tree leafy at top, with round wrinkled tomentoſe branches, and very ſhort branchlets. Leaves petioled, ſcarcely cordate, acute, ſpreading, entire, more ribbed underneath, ſmooth. Fruits axillary, alternate, many, globular, the ſize of currants. Peduncles very ſhort, one-flowered. Calyx obtuſe. Navel triangular, each angle cleft with an oblong ſlit.—Native of Surinam[p].

20. The whole clothed with very minute thinly ſcattered hairs. Branches round, ſtriated, aſh-coloured, ſmooth. Leaves cuſped, ſerrate, rugged on both ſides, with hairy nerves, about a ſpan in length, on grooved petioles an inch long. Peduncle in the axil of the leaves, filiform, hiſpid with ſhort, rigid, yellowiſh, ſhining briſtles. Fruit globular, clothed with the ſame tegument as the peduncle[q], axillary, racemed, turbinate, the ſize of a plum, according to Thunberg.—Native of Java.

21. Stem filiform, decumbent, ruſeſcent, ſmooth; branches filiform, decumbent, bent in, ſtipuled, ruſeſcent. Stipules ſcattered, awl-ſhaped, ſpreading, ruſeſcent. Leaves entire, bright green above, paler underneath and netted, on petioles ſcarcely half a line in length[r].

Native of China and Japan. Introduced about 1771[s].

22. Stem ſlender, ſubflexuoſe. Leaves petioled, with both ſurfaces very ſcabrous; the lower ones undivided, oblong, entire; the upper ones divided as in the common Fig[t].

It is thus deſcribed by Thunberg. Stem ſhrubby, erect, entirely rugged. Branches round, flexuoſe, elongated, little ſubdivided. Leaves cuſped, toothed, with a reflex margin, pale underneath, rugged on both ſides, nerved, from erect ſpreading, a finger's length, on ſemicylindric petioles. Fruits axillary, ovate, obtuſe, hiſpid, the ſize of a hazel nut, on peduncles ſhorter than the petioles. In Linneus's ſupplement they are deſcribed as ſmooth.—Native of the Eaſt-Indies, near rivulets and watery places ſcarcely acceſſible on account of the Rattans.—Cultivated in 1758, by Mr. Miller[u].

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[z] Marſden's Sumatra, 130.
[a] Ives's voy. to India, 199 & 460.
[b] Hort. malab. 1. 48.
[c] Hort. kew.
[d] Sloane.
[e] Hort. kew.
[f] Thunberg.
[g] Hort. kew.
[h] Linn. ſuppl. & Thunb.
[i] Hort. kew.
[k] Linn. mant.
[l] Linn. ſyſt. & Thunb.
[m] Thunberg.
[n] Linn.
[o] Loureiro.
[p] Linn. ſuppl. & Thunb.
[q] Linn. ſuppl.
[r] Thunberg.
[s] Hort. kew.
[t] Linn. ſuppl.
[u] Hort. kew.

23. Native of Java[x]. The ſame with F. benjamina, n. 5. according to Thunberg.

24. Native of the Eaſt-Indies. Introduced in 1772, by Mr. William Malcolm[y].

25. Native of the iſles of Tanna and Namoka in the South Seas[z].

26. This is a tree four or five fathoms in height, with jointed branches. Leaves alternate, ſubpetioled, ovate-cordate, acuminate, the inner diſk narrower, hairy, ſpreading, a ſpan long. Petioles round, with a groove on the upper ſide. Receptacles (or fruit) axillary, in pairs, ſeſſile, ſilky-tomentoſe on the outſide, white, the ſize of the common Fig, fleſhy, juicy and ſapid. It has no common calyx, but an obſcure rim, entire, ſcarcely two or three-toothed, ſurrounds the receptacle where it begins to ſpread out[a].—Thunberg ſays that the fruit is globular, and the ſize of a plum.

Native of the iſle of Tanna: where it is alſo cultivated for the fruit, which is ſweet and pleaſant; the young leaves boiled are eaten as greens.

27. Native of the Society iſles[b].

28. Native of the iſle of Tanna. In Otaheite it is called *Matte*.

Loureiro has given the ſame name to a Cochinchineſe Fig, on account of its ſeptic qualities. It is uſed there for eating off proud fleſh, and againſt worms. He deſcribes it, as a ſhrub eight feet high, and upright, with ſpreading branches. Leaves broad-lanceolate, quite entire, rough, ſcattered, petioled. Fruit oblong-turbinate, wrinkled, flaccid, lateral, axillary, on ſhort ſimple ſolitary peduncles, green, tinged with red. He refers to *Rumphius*, *t.* 96. and to *Burm. ind.* 226.

29. This is a tall ſhady tree, with a multangular toroſe trunk: all the branches aſcending, long, roundiſh, ſomewhat jointed, brown-aſh-coloured, unequal; branchlets round, jointed, leafy only at the end. Leaves crowded, alternate, ſmooth, with few yellow veins, dark green above, more ſhining beneath, a ſpan or more in length, ſpreading. Petioles roundiſh, ſmooth, ſpreading, one quarter of the length of the leaves. Terminating buds cloſer, like a ſpine, covered entirely with bay-coloured hairs. Peduncles from the axils of the upper leaf and the next, thick, very ſhort, round. Receptacle (or fruit) larger than the common Fig, ſubpubeſcent, roſe-coloured with yellow ſpots, within purple, ſoft and pulpy. Common calyx three-leaved, with ſmall ovate-roundiſh leaflets. Cultivated (with the 26th) in the iſle of Tanna for its fruit, which is ſweetiſh, watery, and almoſt inſipid.

30. Native of the iſles of Namoka and Tanna.

31. Native of the Society iſles[c].]

32. This riſes with many ſhrubby ſtalks to the height of twelve or fourteen feet, and divides into many ſmaller branches. The leaves are four inches long, and three broad, of a light green, and ſtand upon very ſhort foot-ſtalks, joined to a cup in which the fruit ſits; this is globular, and the ſize of a middling nutmeg, of a deep yellow, when ripe, but is not eatable. Native of La Vera Cruz, whence it was ſent to Mr. Miller by Dr. Houſtoun.

33. The fruit is of a pale yellow colour, and ſpherical. Native of Jamaica.

[34. Stem weak, round, ſtriated and chinky, ferruginous aſh-coloured, ſmooth. Branches alternate or ſubumbelled-aggregate, like the ſtem. Leaves obovate, a little attenuated to both ends, entire, aſh-coloured and netted beneath, ſpreading, from an inch to a finger's length. Petioles ſubtrigonal, grooved, half an inch in length. Fruits ſcattered on the branchlets, erect, ſubglobular, the ſize of a hazel nut. It differs from F. pumila, of which it was ſuppoſed to be only a variety, in having larger leaves, leſs netted, and thinner; and ſmaller, ſweeter, more eatable fruits. Native of Japan[d].

35. Stem filiform, rufeſcent, ſmooth. Branches alſo filiform, decumbent, bent in, ſtipuled, rufeſcent. Stipules ſcattered, awl-ſhaped, ſpreading, rufeſcent. Leaves entire, paler underneath and netted, on petioles ſcarcely half a line in length. Native of Japan[e].

36. This is a large tree, with oblique branches. Leaves ſubſerrate, tomentoſe, large, ſcattered, petioled. Fruit turbinate, two inches long, of an even ſurface, red within and without, in heaped, erect, terminating racemes. Calyxes of the receptacle three-leaved, permanent. Beſides the aperture at the top common to the whole genus, there are four diſtant holes on the ſhoulder of the fruit, fenced round by prominent cartilages reſembling ears.

Native of Cochinchina, where the fruit before it is ripe cut in ſlices taſtes like the cucumber, and is eaten in ſalads.

Caprificus amboinenſis eſculenta of Rumphius agrees with the above in many circumſtances: but the fruit is ſmaller, lateral, and has no ears.

37. This is a ſhrub, ſix feet high, upright and branched. Leaves ſubacute, ſmall, petioled, ſcattered. Fruit very ſmall, ſaffron-coloured. Native of Cochinchina; where the dried leaves are uſed in poliſhing ſmall works in wood or ivory.

38. This is a ſhrub five feet in height, with an upright ſtraight ſtem, without any branches. Leaves rough, large, petioled, ſcattered. Fruit ſpheroidal, ſaffron-coloured, ſmall, ſeſſile, axillary, ſolitary. Native of Cochinchina.

39. This is a ſhrub ſix feet in height, with a branching ſtem, covered with a ſmooth bark like hemp. All the leaves are very rough, petioled and ſcattered. Fruit oval-turbinate, on long, ſimple, ſolitary, lateral peduncles. Calyx trifid, with rounded ſegments.

Native of Cochinchina.

F. heterophylla of Koenig (n. 22.) does not agree with this in the leaves, nor in its flexuoſe, hiſpid ſtalk. Caprificus chartaria of Rumphius approaches to this, eſpecially in its tough bark, which may be made uſe of for cloth, that ſerves many of the inhabitants of the iſlands in the South Seas for clothing[f]. See n. 84.

40. Branches round, ſmooth, with a wrinkled bark. Leaves quite entire, very ſmooth on both ſides, veined, two inches long, and of the ſame breadth at the baſe. Petiole the length of the leaf, and ſmooth. Peduncles in pairs, axillary, ſmooth, thicker at both ends, half an inch long: under the fruit two or three ſhort roundiſh ſcales. Fruit globular, ſmooth, the ſize of peas.

It is diſtinct from F. religioſa in having acute leaves, not ending in a long point, and peduncled fruits:—from nymphæifolia in the leaves being exquiſitely cordate, of the ſame colour on both ſides, by no means obtuſe and mucronate:—from Sycomorus and cordifolia of Thunberg in having the fruit peduncled.

Its proper place is between the third and fourth ſpecies.

41. Branches round, villoſe, tomentoſe towards the top. Leaves obtuſe, a little narrower at the baſe, with a narrow ſinus at the petiole, the upper ſurface even, the lower veined and ſoftiſh; they are two inches long, and have a villoſe petiole ſhorter than the leaf. Fruit ſolitary, ſmall.

Native of the Eaſt-Indies. Its proper place is between the fifth and ſixth ſpecies.

42. The whole of this is very ſmooth and even. Leaves pale-coloured, acuminate, rounded at the baſe, from three to five inches in length. Petioles an inch and half long. Stipules lanceolate, deciduous. Fruit globular, even, the ſize of peas. F. indica differs in having oblong leaves with an obtuſe point, fruits on the branchlets aggregate, and the ſize of a hazel nut, and the branches rooting. The place of this is between the ſixth and ſeventh ſpecies.

43. Stem ſmooth, pubeſcent at top, and creeping by means of fibres oppoſite to the leaves; which

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[x] Linn. ſuppl.
[y] Hort. kew.
[z] Forſter.
[a] Ibid.
[b] Ibid.
[c] Ibid.
[d] Thunberg.
[e] Ibid.
[f] Loureiro.

are quite entire, rugged on both ſides, with ſcattered dots underneath, ſharp, an inch and half long, having ſtraight earlets. Petioles ſcarcely two lines in length. Stipules lanceolate at both ends. Native of the Eaſt-Indies. The proper place is between the eleventh and twelfth ſpecies.

44. Branches angular at top, and hairy. Leaves two or three-lobed at top, very rugged on both ſides, veined, acute, remotely and unequally toothed, quite entire towards the baſe, and frequently on one ſide almoſt to the middle, two inches long and more, on a very ſhort, villoſe petiole. Fruit ſmooth, a little larger than a pea, terminated by a truncated wart, and roughened by unequal ſcattered tubercles. Native of the Eaſt-Indies.

This was ſent by Koenig under the name of F. heterophylla, but it is probably different from n. 22., ſince it does not agree in the ſize and form of the fruit; nor is it hiſpid, as Thunberg ſays the heterophylla is (p. 13.) See n. 39.

45. Branches angular, ſmooth and even. Leaves ſharp, netted-veined, ſhining above, paler underneath, two inches and more in length: lobes oblong, lateral, obtuſe. Petiole ſhort, wrinkled, channelled above. It differs from F. denticulata in having hairy branches, ſhorter petioles, leaves more tender, and not at all ſhining, toothletted, and globular fruit, with larger and fewer dots. Native of the Eaſt-Indies.

46. Branches at top, and alſo the younger leaves, very rugged, with extremely ſmall and numerous dots. Leaves petioled, nerved, ſharp at the baſe, quite entire, opaque. Fruit almoſt the ſize of a hazel nut, villoſe, on a very ſhort peduncle.

This differs from the other ſpecies in having divided leaves, the branches and leaves dotted and rugged, the leaves palmate, repand at the baſe, narrowed, not rounded, and the fruit covered with very numerous minute dots.

47. Branches round, ſmooth. Leaves ſharply ſerrate, almoſt to the baſe, rugged on both ſides, veined, paler underneath, with purpliſh veins, two inches long: lobes ovate, acute. Petiole only half the length of the leaf. Fruit ſolitary, a little larger than a pea. Peduncle the length of the fruit, with a pair of ſmall bractes on the middle of it. The proper place of the four laſt is between the ſixteenth and ſeventeenth ſpecies.—Perhaps not different from heterophylla [g].

48. This is a middle-ſized ſhrub, entirely ſmooth. Branches round, ſomewhat wrinkled, aſh-coloured, from erect ſpreading, branchletted. Leaves towards the ends of the branches and branchlets approximating, entire, netted-veined, ſpreading, an inch and half long, on round ſhort petioles. Fruits ſeſſile, towards the ends of the branches and branchlets in the axils of the leaves approximating, globular, the ſize of peas. Native of the Cape of Good Hope.

49. Stems filiform, decumbent, rooting, flexuoſe, brown. Branches filiform, ſimple, like the ſtem. Leaves obliquely inſerted, with one ſide narrower, blunt, very finely nerved, entire, pale underneath, on very ſhort petioles. Native of the Eaſt-Indies.

50. Stem paraſitical, climbing, round, wrinkled, brown, ſcarcely the thickneſs of a gooſe quill. Branches flexuoſe, ſmooth, brown. Branchlets very ſhort. Leaves blunt, obſcurely emarginate, entire, with the edge a little bent back, ſmooth above, hollow-dotted underneath, ſpreading and reflex, from half an inch to an inch in length. Petioles very ſhort. Fruits obovate, nearly the ſize of the common Fig. Native of the Eaſt-Indies.

51. Stem entirely ſmooth. Branches ſtriated and wrinkled, from erect ſpreading. Leaves entire, marked with parallel nerves, ſpreading, from an inch to a hand in length, on ſemicylindric very ſhort petioles. Fruits at the ends of the branchlets, ſeſſile, globular, retuſe, the ſize of peas.

52. Branches ſtriated and wrinkled, reflex, aſh-coloured, ſmooth. Leaves entire, marked with parallel nerves, a finger's length, on aſh-coloured petioles ſhorter by half than the leaf. Fruits ſcattered, and aggregate on the branches, ſmooth, the ſize of peas. Native of the Eaſt-Indies.

53. Branches round, grooved, ſmooth. Leaves ſcattered, acuminate, coriaceous, entire, nerved, aſh-coloured underneath, the ſize of the hand, on ſemicylindric, thick, ſhort petioles. Fruits towards the ends of the branches, ſmooth, the ſize of plums. Native of the Eaſt-Indies.

54. Branches round, wrinkled, purple, ſmooth, upright. Leaves obovate, attenuated below, toothed and bent back at the edge, pale beneath, ſpreading, the ſize of the hand, on ſemicylindric, thick, very ſhort petioles. Fruits axillary, ſmooth, larger than peas, on peduncles a line in length. Native of the Eaſt-Indies.

55. Branches round, ſtriated, aſh-coloured, ſmooth, erect. Leaves tooth-angular at top, with a reflex margin, entire at bottom, pale underneath, nerved, netted, ſpreading, the ſize of the hand, on ſemicylindric, grooved, ſhort petioles. Fruits on the branchlets ſcattered and aggregate, ſeſſile, globular, ſomewhat knobbed, ſmooth, ſcarcely the ſize of pepper. Native of the Eaſt-Indies.

56. This is a vaſt lofty ſmooth tree, with ſpreading branches. Leaves ſinuate-toothed, paler underneath, nerved, ſpreading, a finger's length. Fruits ſcattered, turbinate, the ſize of a hazel nut, or bigger. Native of the Cape of Good Hope [h].]

PROPAGATION AND CULTURE.

1. The firſt, ſecond, third, ninth and tenth varieties will ripen their fruits on ſtandards, where they are in a warm ſituation; but the others require the aſſiſtance of walls expoſed to good aſpects, otherwiſe their fruit will not ripen in England.

Fig-trees generally thrive in all ſoils, and in every ſituation; but they produce a greater quantity of fruit upon a ſtrong loamy ſoil, than on dry ground; for if the ſeaſon proves dry in may and june, thoſe trees which grow upon very warm dry ground, are very ſubject to caſt their fruit; therefore whenever this happens, ſuch trees ſhould be well watered and mulched, which will prevent the fruit from dropping off; and the fruit upon theſe trees are better flavoured than any of thoſe which grow upon cold moiſt land. I have always obſerved thoſe Fig-trees to bear the greateſt quantity of well-flavoured fruit, which were growing upon chalky land, where there has been a foot or more of a gentle loamy ſoil on the top. They alſo love a free open air; for although they will ſhoot and thrive very well in cloſe places, yet they ſeldom produce any fruit in ſuch ſituations; and all thoſe which are planted in ſmall gardens in London, will be well furniſhed with leaves, but I have never ſeen any fruit upon them which have grown to maturity.

Theſe trees are always planted as ſtandards in all warm countries, but in England they are generally planted againſt walls, there being but few ſtandard Fig-trees at preſent in the Engliſh gardens; however, ſince ſome of the ſorts are found to ripen their fruit well upon the ſtandards, and the crop of Figs is often greater upon them than upon thoſe trees againſt walls, it is worthy of our care to plant them either in ſtandards or eſpaliers; the latter, I think, will ſucceed beſt in England, if they were managed as in Germany, where they untie the Fig-trees from the eſpalier, and lay them down, covering them in winter with ſtraw or litter, which prevents their ſhoots being injured by the froſt; and this covering is taken away gradually in the ſpring, and not wholly removed until all the danger of froſt is over, by which management they generally have a very great crop of Figs; whereas in England, where the trees grow againſt warm walls, if the ſpring proves warm, the young Figs are puſhed out early, and the cold, which frequently returns in april and may, cauſes the greateſt part of the fruit to drop off; ſo that our crop of Figs is generally more uncertain than moſt other ſorts of fruit: and it frequently happens, that trees which are planted againſt north and eaſt-aſpected walls, produce a greater quantity of fruit in England than thoſe which are planted againſt ſouth and ſouth-eaſt aſpects; which muſt happen from the latter putting out their fruit ſo much earlier in the ſpring than the former; and if there happen cold froſty nights after the Figs are come out, which is frequently the caſe in this country, the forwardeſt of the Figs are generally ſo injured as to drop off from the trees ſoon after. In Italy, and the other warm countries, this firſt crop of Figs is little regarded, being few in number; for it is the ſecond crop of Figs produced from the ſhoots of the ſame year, which is their principal crop, but theſe rarely ripen in England; nor are there above three or four ſorts which ever ripen their ſecond crop, let the ſummer prove ever ſo good, therefore it is the firſt crop which we muſt attend to in England; ſo that when theſe trees are growing againſt the beſt aſpected walls, it will be a good method to looſen them from the wall in autumn; and after having diveſted the branches of all the latter fruit, to lay the branches down from the wall, faſtening them together in ſmall bundles, ſo that they may be tied to ſtakes, to keep them from lying upon the ground; the damp whereof, when covered in froſty weather, might cauſe them to grow mouldy, and hereby they will be ſecured from being broken by the wind. When they are thus managed in autumn, if the winter ſhould prove very ſevere, the branches may be eaſily covered with peas-haulm, ſtraw, or any other light covering, which will guard the tender fruit-bearing branches from the injury of froſt; and when the weather is mild, the covering muſt be removed, otherwiſe the Figs will come out too early; for the intention of this management is to keep them as backward as poſſible: then in the ſpring, when the Figs are beginning to puſh out, the trees may be faſtened up to the wall again. By this management I have ſeen very great crops of Figs produced in two or three places.

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[g] Vahl.

[h] Thunb. monogr.

I have alſo ſeen great crops of Figs in ſome particular gardens, after very ſharp winters, when they have, in general, failed in other places, by covering up the trees with Reeds made into pannels, and fixed up againſt the walls.

In pruning Fig-trees, the branches muſt never be ſhortened, becauſe the fruit is all produced at the upper part of the ſhoots of the former year; if theſe are cut off, there can be no fruit expected; beſides, the branches are very apt to die after the knife; ſo that when the branches are too cloſe together, the beſt way is to cut out all the naked branches quite to the bottom, leaving thoſe which are beſt furniſhed with lateral branches at a proper diſtance from each other, which ſhould not be nearer than a foot; and when they are well furniſhed with lateral branches, if they are laid four or five inches farther aſunder, it will be better.

The beſt ſeaſon for pruning Fig-trees is in autumn, becauſe at that time the branches are not ſo full of ſap, and will not bleed ſo much as when they are pruned in the ſpring; and at this ſeaſon, the branches ſhould be diveſted of all the autumnal Figs, and the ſooner this is done, when the leaves begin to fall off, the better will the young ſhoots reſiſt the cold of the winter. There are ſome ſeaſons ſo cold and moiſt, that the young ſhoots of the Fig-trees will not harden, but are ſoft, and full of juice; when this happens, there is little hope of a crop of Figs the ſucceeding year, for the firſt froſt in autumn will kill the upper part of theſe ſhoots for a conſiderable length downward; whenever this happens, it is the beſt way to cut off all the decayed part of the ſhoots, which will prevent the infection from deſtroying all the lower part of the branches; and, by this method, I have ſeen a moderate crop of Figs put out from the lower part of the ſhoots; where, if the ſhoots had not been injured, there would have been no fruit produced, becauſe it is chiefly from the four or five uppermoſt joints of the ſhoots that the fruit comes out; and it is for this reaſon, that as many of the ſhort lateral branches ſhould be preſerved as poſſible, thoſe being the moſt productive of fruit; for where the long ſtraight ſhoots are faſtened up, there will be no fruit, but at their extremities, ſo that all the lower part of the trees will be naked, if there is not a particular regard had to ſupply young ſhoots in every part of the trees.

Thoſe trees which are laid down from the eſpaliers, ſhould not be faſtened up again till the end of march for the reaſons before given, and thoſe againſt walls may remain ſome time longer; and when the large ſhoots of theſe are nailed up, if the ſmall lateral branches are thruſt behind theſe, to keep them cloſe to the wall, it will ſecure the young Figs from being injured by the morning froſts; and when this danger is over, they may be brought forward to their natural poſition again: during the ſummer ſeaſon theſe trees will require no other pruning, but to ſtop the ſhoots in the ſpring, where lateral branches are wanting; and as the branches are often blown down by wind, therefore whenever this happens, they ſhould be immediately faſtened up again, otherwiſe they will be in danger of breaking; for the leaves of theſe trees being very large and ſtiff, the wind has great power on them; ſo that where the branches are not well ſecured, they are frequently torn down.

Thoſe trees which are planted againſt eſpaliers may be protected from the injury of froſt in the ſpring, by placing Reeds on each ſide the eſpalier, which may be taken down every day, and put up again at night; but this need not be practiſed in warm weather, but only at ſuch times as there are cold winds and froſty mornings; and although there is ſome trouble and expence attending this management, yet the plentiful crop of Figs which may this way be obtained, will ſufficiently recompenſe for both: the beſt way of making this covering is, to faſten the Reeds with rope-yarn in ſuch a manner as that they may be rolled up like a mat, that the whole may with great facility be put up or taken down; and if theſe Reeds are carefully rolled up, after the ſeaſon for uſing them is over, and put up in a dry ſhed, they will laſt ſeveral years.

There are ſeveral perſons who of late have planted Fig-trees in ſtandards, which have ſucceeded very well; this practice was revived, by obſerving ſome old ſtandard Fig-trees in ſome gardens, which had been growing many years, and generally produced a much greater plenty of fruit than any of thoſe trees which were growing againſt warm walls; indeed, theſe ſtandard Fig-trees are in much greater danger of having their branches killed by ſevere froſt, but in mild winters they generally do better than thoſe againſt walls; ſo that where theſe trees can be covered in very hard winters, there will always be plenty of fruit; and theſe may be covered by faſtening as many of the branches together as can be conveniently brought into a bundle, and winding ſome hay-bands, ſtraw, peas-haulm, or any ſuch light covering as can be readily procured, which in the ſpring may be gradually taken off, ſo as not to expoſe the ſhoots all at once to the open air; and if there is ſome ſuch light covering laid round the ſtems, and upon the ſurface of the ground about their roots, it will more effectually ſecure them from the danger of froſt; but when this is practiſed, great care ſhould be taken that no mice or rats harbour in this covering, for theſe will eat off the bark from their ſhoots, and kill them: and I have often obſerved thoſe trees which were againſt walls, have ſuffered greatly by theſe vermin, by having many of their largeſt branches diſbarked near the ground, which has abſolutely killed them; and it is in the winter that theſe vermin do this miſchief to them, therefore they ſhould be carefully watched at that ſeaſon.

The common blue and white Figs, which are the ſorts which have been the moſt generally cultivated in England, are not ſo proper to plant for ſtandards as ſome other ſorts which have been lately introduced; for they are much tenderer, and are often killed almoſt to the root, when ſome of the other ſorts, which have been growing in the ſame ſituation, have received very little injury from the froſt: indeed the white ſort is generally a great bearer, and the fruit is very ſweet; but to thoſe palates which are accuſtomed to Figs, that ſort is not much in eſteem, from its want of flavour: thoſe which have ſucceeded beſt with me, are the firſt and third ſorts. Their branches are rarely hurt by froſt in winter, and their fruit will always ripen well; for in favourable ſeaſons, many of theſe ſorts, which were growing againſt walls, have ripened their ſecond crop of fruit tolerably well. I have alſo planted many of theſe ſorts of Fig-trees againſt north-eaſt and north-weſt aſpects; ſome of thoſe which were firſt planted, have produced a good quantity of well taſted fruit, but were ripe much later, which has encouraged me to plant many more of theſe trees to the ſame aſpects, and alſo to increaſe my number of ſtandard trees.

I am aware, that what I have here advanced, in relation to the pruning and dreſſing of Fig-trees, will be condemned by great numbers of people, who will not give themſelves time to conſider and examine the reaſons upon which I have founded this practice, nor to make one ſingle experiment to try the truth of it, as being vaſtly different from the general practice of moſt gardeners, who always imagine, that Fig-trees ſhould never have much pruning; or, at leaſt, that they ſhould always be ſuffered to grow very rude from the wall, to ſome diſtance. That by this management I have often ſeen great quantities of fruit I cannot deny, but then this has been only after mild winters; for it is very certain, that in ſharp froſts few of theſe outſide ſhoots eſcape being greatly injured where they are not covered; whereas it rarely happens that thoſe ſhoots which are cloſely nailed to the wall in autumn, or laid down and covered, ſuffer the leaſt damage; and the fruits are always produced a fortnight ſooner upon theſe branches, than they are upon thoſe which grow from the wall: but although the trees which are ſuffered to grow rude from the walls may produce a good quantity of fruit for a year or two, yet afterwards the trees will only bear at the ends of the ſhoots, which will then be ſo far from the wall, as to receive little benefit from it; nor can the trees be reduced again to any regularity, without cutting away the greateſt number of their branches, by which a year or two will be loſt before they will come to bear again.

The ſeaſon alſo for pruning, which I have laid down, being vaſtly different from the common practice and opinion of moſt gardeners, will alſo be objected againſt; but I am ſure, if any one will but make trial of it, I doubt not his experience will confirm what I have here advanced; for as one great injury to this tree proceeds from the too great effuſion of ſap at the wounded parts, by this autumn pruning this is prevented; for, at that ſeaſon, all the parts of European trees which caſt their leaves, are leſs replete with moiſture than at any other time of the year; for by the long continuance of the ſummer's heat, the juices of plants having been exhauſted in the nouriſhment and augmentation of wood, leaves, fruits, *&c.* and alſo great quantities being evaporated by perſpiration, the root not being able to ſend up a ſupply equivalent to this great conſumption, the branches muſt contain a much leſs quantity of ſap than in the ſpring, when it has had ſeveral months ſupply from the root; which, though but ſmall in proportion to what is ſent up when the heat is greater, yet there being little or no waſte, either by perſpiration or augmentation, there muſt be a greater quantity contained in the branches; which alſo is eaſily to be obſerved, by breaking or cutting off a vigorous branch of a Fig-tree at both ſeaſons, the ſap, being milky, may be readily diſcerned, when that cut in autumn ſhall be found to ſtop its bleeding in one day's time, or leſs; whereas that cut in the ſpring will often flow a week or more, and the wound will be proportionably longer before it heals.

Of late years ſome of theſe trees have been planted againſt fire-walls, which have ſucceeded very well where they have been properly managed; but where they have been kept too cloſe, and drawn by glaſſes, they have not produced much fruit; therefore whenever this is practiſed, the heat ſhould not be too great, nor the glaſſes, or other covering, kept too cloſe, but at all times, when the weather is favourable, a good ſhare of free air ſhould be admitted; and if the trees are young, that their roots are not extended beyond the reach of the covering, they muſt be frequently watered when they begin to ſhew fruit, otherwiſe it will drop off; but old trees, whoſe roots are extended to a great diſtance, will only require to have their branches now and then ſprinkled over with water. If theſe trees are properly managed, the firſt crop of fruit will be greater than upon thoſe which are expoſed to the open air, and will ripen ſix weeks or two months earlier, and a plentiful ſecond crop may alſo be obtained, which will ripen early in ſeptember, and ſometimes in auguſt, which is about the ſeaſon of their ripening in the warmer parts of Europe: but the fires ſhould not be uſed to theſe trees till the beginning of february: becauſe when they are forced too early, the weather is frequently too cold to admit a ſufficient quantity of freſh air to ſet the fruit; but the covers ſhould be put over the trees a month before, to prevent the ſhoots from being injured by the froſt.

It may not be improper in this place to mention the great pains which the inhabitants of the Levant are at in the culture of their Figs; and without which (it is generally ſaid by all travellers who have written on this ſubject, as alſo by Pliny, and other old naturaliſts) their fruit will fall off, and be good for nothing. I ſhall here ſet it down, as I find it in the travels of Monſ. Tournefort*.

“ Pliny (ſays he) obſerved, That in Ceos now
“ Zia they uſed to dreſs the Fig-trees with much
“ care; they ſtill continue to do ſo. To under-
“ ſtand aright this huſbandry of Figs, called in
“ Latin, Caprificatio, we are to obſerve, that in
“ moſt of the iſlands of the Archipelago, they have
“ two ſorts of Fig-trees to manage; the firſt is
“ called Ornos, from the old Greek, Erinos, a wild
“ Fig-tree; or Caprificus, in Latin; the ſecond is
“ the domeſtic, or garden Fig-tree; the wild ſort
“ bears three kinds of fruit, Fornites, Cratitires,
“ and Orni, of abſolute neceſſity towards ripening
“ thoſe of the garden Fig.

“ The Fornites appear in auguſt, and continue to
“ november, without ripening; in theſe breed ſmall
“ worms, which turn to a ſort of gnats, no where
“ to be ſeen but about theſe trees. In october and
“ november theſe gnats of themſelves make a punc-
“ ture into the ſecond fruit, which is called Crati-
“ tires; theſe do not ſhew themſelves till towards
“ the end of ſeptember; and the Fornites gradually
“ fall away after the gnats are gone; the Cratitires,
“ on the contrary, remain on the tree till may, and
“ incloſe the eggs, depoſited by the Fornites, when
“ they pierced them. In may the third ſort of
“ fruit begins to put forth from the ſame wild Fig-
“ trees which produced the other two; theſe are
“ much bigger, and are called Orni; when they
“ grow to a certain ſize, and the bud begins to
“ open, they are pricked in that part by the gnats
“ of the Cratitires, which are in a proper ſtate to
“ go from one fruit to the other, to diſcharge their
“ eggs.

“ It ſometimes happens, that the gnats of the
“ Cratitires are ſlow to come forth in certain places,
“ while the Orni in thoſe very places are diſpoſed
“ to receive them; in which caſe the huſbandman
“ is obliged to look for the Cratitires in another
“ place, and fix them at the end of the branches of
“ thoſe Fig-trees, whoſe Orni are in fit diſpoſition

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* Letter 8.

"to be pierced by the gnats; if they miſs the opportunity, the Orni fall, and the gnats of the Cratitires fly away. None but thoſe that are well acquainted with this ſort of culture, know the critical minutes of doing this; and in order to it, their eye is perpetually fixed on the bud of the Fig; for that part not only indicates the time that the flies are to iſſue forth, but alſo when the Fig is to be ſucceſsfully pierced; if the bud be too hard, and too compact, the gnat cannot lay its eggs, and the Fig drops when this bud is too open.

"Theſe three ſorts of fruit are not good to eat; their office is to help to ripen the fruit of the garden Fig-trees, in manner following: during the months of june and july, the peaſants take the Orni at a time that their gnats are ready to break out, and carry them to the garden Fig-trees; if they do not nick the moment, the Orni fall, and the fruit of the domeſtic or garden Fig-tree not ripening, will, in a very little time, fall in like manner. The peaſants are ſo well acquainted with theſe precious moments, that every morning, in making their inſpection, they only transfer to their garden Fig-trees ſuch Orni as are well conditioned, otherwiſe they loſe their crop. It is true, they have one remedy, though an indifferent one, which is, to ſtrew over the garden Fig-trees the Aſcolimbros, a very common plant there, and in whoſe fruit there is a ſort of gnats proper for piercing, perhaps they are the gnats of the Orni, which are uſed to hover about and plunder the flowers of this plant.

"In ſhort, the peaſants ſo well order the Orni, that their gnats cauſe the fruit of the garden Fig-tree to ripen in the compaſs of forty days. Theſe Figs are very good freſh; when they would dry them, they lay them in the ſun for ſome time, then put them in an oven to keep them the reſt of the year. Barley bread and dried figs are the principal ſubſiſtence of the peaſants and monks of the Archipelago: but theſe Figs are very far from being ſo good as thoſe dried in Provence, Italy, and Spain; the heat of the oven deſtroys all their delicacy and good taſte; but then, on the other hand, this heat kills the eggs which the flies of the Orni diſcharged therein, which eggs would infallibly produce ſmall worms that would prejudice theſe fruits.

"What an expence of time and pains is here for a Fig, and that but an indifferent one at laſt! I could not ſufficiently admire the patience of the Greeks, buſied above two months in carrying theſe flies from one tree to another. I was ſoon told the reaſon, one of their Fig-trees uſually produces between two and three hundred pounds of Figs, and ours in Provence ſeldom above twenty-five.

"The flies contribute, perhaps, to the maturity of the fruit of the garden Fig-tree, by tearing the veſſels in depoſiting their eggs; and thus cauſing the nutritious juice to extravaſate; perhaps too, beſide their eggs, they leave behind them ſome ſort of liquor proper to ferment gently with the milk of the Fig, and to make their fleſh tender."

[Monſieur Juſſieu doubts whether the ſucculency and turgeſcence of the eſculent Fig be owing to the defluxion of the nutritious juice, occaſioned by the punctures of the inſects; or to the impregnation of the ſeeds from the farina conveyed by them. The ſexual botaniſts have adopted the latter cauſe, and regard it as one main prop of their ſyſtem. Here, as in ſimilar caſes, two purpoſes are anſwered at once, the impregnation of the ſeed, and the ripening of the pulp.]

"Our Figs in Provence, and even at Paris, ripen much ſooner for having their eyes pricked with a ſtraw dipped in olive oil. Plums and Pears, pricked by ſome inſects likewiſe ripen much the faſter for it; and the fleſh round ſuch puncture is better taſted than the reſt. It is not to be diſputed but that conſiderable change happens to the contexture of fruits ſo pricked, juſt the ſame as to parts of animals pierced with any ſharp inſtrument.

"It is ſcarce poſſible well to underſtand the antient authors who have treated of caprification, or huſbanding and dreſſing the wild Fig-tree, without being well appriſed of theſe circumſtances, the particulars whereof were confirmed to us not only at Zia, Tinos, Mycone, and Scio, but in moſt of the other iſlands."

Fig-trees are propagated in England, either by the ſuckers, which are ſent out from their roots, or by layers made, by laying down their branches, which in one year will put out roots ſufficient to be removed, or by planting cuttings, which, if properly managed, will take root; the firſt of theſe is a bad method, becauſe all thoſe trees which are raiſed from ſuckers, are very ſubject to ſend out great quantities of ſuckers again from their roots; and the branches of the ſuckers are not ſo compact, as thoſe of the layers, but are fuller of ſap, and in greater danger of being injured by the froſt; thoſe plants which are propagated by layers are the beſt, provided the layers are made from the branches of fruitful trees: for thoſe which are made from the ſuckers, or ſhoots, produced from old ſtools, being very ſoft, and full of ſap, are in danger of ſuffering by the froſt, and theſe will ſhoot greatly into wood, but will not be very fruitful; for, when trees have acquired a vicious habit while young, it is ſeldom they are ever brought to be fruitful afterwards; therefore the ſhoots which are laid down, ſhould be ſuch as are woody, compact, and well ripened, not young ſhoots, full of ſap, whoſe veſſels are large and open.

The beſt time for laying down the branches is in autumn; and if the winter ſhould prove very ſevere, if they are covered with ſome old tan, or any other mulch, to keep the froſt from penetrating the ground, it will be of great ſervice to them; by the autumn following, theſe will be ſufficiently rooted for removing, when they ſhould be cut off from the old plants, becauſe at that ſeaſon the branches not being ſo full of ſap as in the ſpring, will not bleed ſo much as when cut off at that ſeaſon. If the place is ready to receive them, the layers ſhould be tranſplanted in autumn, where they are to remain; but if it is not, then the layers may remain till the ſpring, provided they are ſeparated from the old plants in autumn. As theſe plants do not bear tranſplanting well when they are large, it is the better way to plant them at firſt in places where they are to remain; and after they are planted, the ſurface of the ground about their roots ſhould be covered with mulch to keep out the froſt; and if the winter ſhould prove very ſevere, it will be proper to cover the branches with Reeds, Peas-haulm, Straw, or ſome other light covering, which will prevent their tender ends being killed by the froſt, which frequently happens where this care is wanting.

The other method of propagating theſe trees, is by cuttings, which ſhould be taken from the trees in autumn, for the reaſon before given: theſe muſt be choſen from ſuch branches as are compact, whoſe joints are near each other; and they ſhould have a part of the former year's wood at their bottom, and the top of each ſhould be left entire, not ſhortened as is uſually practiſed with other cuttings; then they ſhould be planted eight or nine inches deep, in a bed of loamy earth, in a warm ſituation, covering the ſurface of the ground, three or four inches thick, with old tanner's bark, to keep out the froſt; and in ſevere froſt, their tops ſhould be covered with Straw, Peas-haulm, Fern, or other light covering, to protect them from froſt, theſe ſhould be removed in the ſpring; but the tan may remain, for that will prevent the drying winds of the ſpring, and the ſun in ſummer, from penetrating the ground, and will be of great uſe to ſecure the cuttings from injury; theſe cuttings will be rooted ſufficiently by the following autumn, when they ſhould be tranſplanted, and treated in the ſame manner as the layers.

If fruitful branches of theſe trees are cut off, and planted in pots, or tubs, filled with good earth, and theſe are plunged into a good hot-bed of tanner's bark in the ſtove, they will put out fruit early in the ſpring, which will ripen in the middle of may.

2. &c. The other ſorts are preſerved in ſeveral curious gardens; they are eaſily propagated by cuttings during the ſummer ſeaſon. When the cuttings are taken from the plants, they ſhould be laid in a dry ſhady place for two or three days, that the wounds may be healed over, otherwiſe they are apt to rot; for all theſe plants abound with a milky juice, which flows out whenever they are wounded; for which reaſon, the cuttings ſhould have their wounded part healed over and hardened before they are planted; after which they ſhould be planted in pots filled with ſandy light earth, and plunged into a moderate hot-bed, where they ſhould be ſhaded from the ſun, and two or three times a week gently refreſhed with water, if the ſeaſon is warm; but they muſt not have too much moiſture, for that will infallibly deſtroy them. When the cuttings have taken root ſufficient to tranſplant, they ſhould be each planted into a ſeparate ſmall pot filled with light undunged earth, and plunged into the hot-bed again, being careful to ſhade them until they have taken freſh root; then they ſhould have a large ſhare of free air admitted to them at all times when the weather is favourable, to prevent their drawing up weak, and to give them ſtrength before the cold comes on. In autumn the pots ſhould be removed into the ſtove, and plunged into the tan-bed, where they ſhould conſtantly remain, and muſt be treated in the ſame manner as other tender plants from the ſame countries; for although two or three of the ſorts may be treated in a hardier manner, yet they will not make much progreſs.

[Ficus. See *Carica* and *Cecropia*.
——— aizoides & capenſis. See *Meſembryanthemum.*]
——— indica. See *Cactus*, [and *Muſa*.
Fiddle-Dock. See *Rumex*.
Fiddle-Wood. See *Citharexylum*.
Field Basil. See *Thymus Acinos*.
Field Madder. See *Sherardia*.
Fig, Indian. See *Cactus*.
Fig, Infernal. See *Argemone*.
Fig-Marigold. See *Meſembryanthemum*.
Fig, Pharaoh's. See *Ficus* and *Muſa*.
Fig-Tree. See *Ficus*.
Fig-wort. See *Scrophularia*.]

FILĀGO. (*From Filum, thread; the leaves being white, and covered with a kind of cotton or thread: hence in Engliſh it is called by ſome Cotton-weed.*)

[*Lin. gen. n.* 995. *Reich. n.* 1079. *Schreb. n.* 1345. *Vaill. act. gall.* 1719. *f.* 6, 7. *Juſſ.* 179. *Gærtn. t.* 166. Gnaphalium. *Vaill. act. gall.* 1719. Evax. *Gærtn. t.* 165.

Claſſ. 19. 4. Syngeneſia Polygamia Neceſſaria.

Nat. order of *Compoſitæ Nucamentaceæ.—Corymbiferæ* Juſſ.

GENERIC CHARACTER.

Cal. *Common* of imbricate chaffs, containing in the *diſk* ſeveral hermaphrodite florets; in the *circumference* among the lower ſcales of the calyx ſolitary female florets.

Cor. *Hermaphrodite* funnel-form, with a four-cleft erect border. *Females* ſcarcely viſible, filiform, very narrow, cloven at the mouth.

Stam. in the hermaphrodite. *Filaments* four, capillary, ſmall. *Anther* cylindric, four-toothed at the top.

Pist. in the hermaphrodite. *Germ* ſcarcely any. *Style* ſimple. *Stigma* acute, bifid.—In the females *germ* ovate, largiſh, depreſſed. *Style* filiform. *Stigma* acute, bifid.

Per. none.

Seeds in the hermaphrodites none.—In the females obovate, compreſſed, ſmooth, ſmall. *Down* none.

Rec. Diſk naked without chaffs, but at the ſides there are calycine chaffs ſeparating the florets.

Obs. *The above character is taken from* F. pygmæa *or* acaulis, *which Gærtner ſeparates under the name of* Evax:—F. germanica, arvenſis, montana, *and probably other ſpecies agree together, and are diſtinguiſhed from that by the following character.*

Cal. *Common* round or five-cornered, imbricate: *ſcales* ovate-lanceolate; the outer acute, tomentoſe, the inner ſhining, coloured; acuminate.

Cor. *Compound*: *corollets* hermaphr. tubular few in the centre of the diſk: *females* tubular numerous in the remainder of the diſk; and a few others, almoſt apetalous among the outer ſcales of the calyx.

Proper in the hermaphrodites funnel-form, with a four-cleft ſpreading border:—in the females of the diſk funnel-form, with a ſlender tube ſwelling at the baſe; and a four-cleft erect border;—in the other females hardly conſpicuous, with a very ſlender tube, and a ſharp cloven border.

Stam. in the hermaphr. *Filaments* four very ſhort. *Anther* tubular.

Pist. in the hermaphr. *Germ* ſmall abortive. *Style* capillary, the length of the border. *Stigmas* two, from upright ſpreading.

Females in the diſk have an oblong *germ*; a capillary *ſtyle* longer than the border, and two ſpreading *ſtigmas*.

Females within the calyx have an oblong *germ*; a capillary *ſtyle* longer than the border, and two long ſpreading *ſtigmas*.

Per. none. *Calyx* unchanged.

Seeds in the *hermaphrodites* barren, crowned with down:—in the *females* of the diſk oblong, crowned with a ſhort ſimple *down*:—in the *females* within the calyx oblong, naked.

Rec. naked *.

ESSENTIAL CHARACTER.

Cal. imbricate. *Female florets* among the ſcales of the calyx. *Down* none. *Recept.* naked.

SPECIES.

1. Filago acaulis. *Pygmy Cudweed.*
Lin. ſyſt. 795. *Reich.* 3. 939. *Allion. pedem. n.* 620. *Krock. ſileſ. n.* 1471. 2. *t.* 41.
F. pygmæa. *Lin. ſpec.* 1311. *Loefl. itin.* 165. *Gouan monſp.* 465. *Cavan. hiſp.* 23. *n.* 38. *t.* 36.
Evax umbellata. *Gærtn. fruct.* 2. 393.
Gnaphalium. *Vaill. act.* 1719. 314.—roſeum. *Bauh. pin.* 263. *prodr.* 122. *Barrel. ic.* 127.—umbellatum minimum. *Bauh. hiſt.* 3. 162.
Flowers ſtemleſs ſeſſile, floral leaves larger.

2. Filago germanica. *Common Cudweed.*
Lin. ſpec. 1311. *Reich.* 939. *Gærtn. fruct.* 2. 404. *Relh. cant. n.* 636. *Lightf. ſcot.* 501. *Neck. gallob.* 365. *Pollich pal. n.* 830. *Leers herborn. n.* 677. *Hall. helv. n.* 153. *Krock. ſileſ. n.* 1472. *Villars dauph.* 3. 194.
F. pyramidata. *Lin. ſuec. n.* 779.
Gnaphalium germanicum. *Lin. lapp. n.* 299. *Hudſ. angl.* 362. *With.* 898. *Scop. carn. n.* 1050.
Gnaphalium. *Fuchſ.* 222. *ic.* 125.—vulgare. *Camer. epit.* 606.—majus. *Bauh. pin.* 263. *Raii hiſt.* 295. *Mor. hiſt. ſ.* 7. *t.* 11. *f.* 10.—minus, ſ. herba impia. *Park. theat.* 685. 3. *Raii ſyn.* 180. 3. *Petiv. brit. t.* 18. *f.* 9, 10.
Filago, ſ. herba impia. *Ger.* 517. 9. *emac.* 642. 10.
Panicle dichotomous, flowers rounded axillary hirſute, leaves ſharp.

3. Filago pyramidata. *Pyramidal-flowering Cudweed.*
Lin. ſpec. 1311. *Reich.* 940. *Krock. ſileſ. n.* 1473. *D'Aſſo aragon. n.* 877. *Villars dauph.* 3. 194.
Gnaphalium medium. *Bauh. pin.* 263. *Barrel. ic.* 128. *n.* 5.
Stem dichotomous, flowers pyramidal five-cornered axillary, female floſcules ſerrate.

4. Filago montana. *Leaſt Cudweed.*
Lin. ſpec. 1311. *Reich.* 940. *Fl. ſuec. n.* 780. *Relh. cant. n.* 637. *Lightf. ſcot.* 502. *Hall. helv. n.* 155. *Pollich pal. n.* 831. *Leers herborn.*

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* Leers,

n. 678. *Krock. ſileſ. n.* 1474. *Villars dauph.* 3. 194.
Gnaphalium montanum. *Hudſ. angl.* 362. *With.* 897.
G. minus repens. *Bauh. pin.* 263.—minimum. *Lob. ic.* 481. 2. *Bauh. hiſt.* 3. 159. *Raii hiſt.* 296. *ſyn.* 181. *Petiv. brit. t.* 18. *f.* 11.—erectum. *Mor. ſ.* 7. *t.* 11. *f.* 3.
Filago minor. *Ger.* 517. 8. *emac.* 641. 9.
Stem ſubdichotomous erect, flowers conical terminating and axillary.

5. Filago gallica. *Graſs-leaved Cudweed.*
Lin. ſpec. 1312. *Reich.* 940. *Hall. helv. n.* 156. *Pollich pal. n.* 832. *Krock. ſileſ. n.* 1475. 2. *t.* 42. *Villars dauph.* 3. 195. *Gouan illuſtr.* 74.
Gnaphalium gallicum. *Hudſ. angl.* 361. *With.* 897. *Petiv. brit. t.* 18. *f.* 12. *Pluk. alm. t.* 298. *f.* 2. *Raii ſyn.* 181. 5.
F. vulg. tenuiſſimo fol. erecto. *Tourn. inſt.* 454. *par.* 1. 142.
Stem dichotomous erect, flowers ſubulate axillary, leaves filiform.

6. Filago arvenſis. *Corn Cudweed.*
Lin. ſpec. 1312. *Reich.* 940. *Fl. ſuec. n.* 781. *Hall. helv. n.* 154. *Pollich pal. n.* 833. *Leers herborn. n.* 679. *Krock. ſileſ. n.* 1476. *Villars dauph.* 3. 195. *Ger. prov.* 210. *n.* 1.
Gnaphalium majus, anguſto oblongo folio. *Bauh. pin.* 263?
G. arvenſe. *Scop. carn. n.* 1051.
Filago incana tomentoſa erecta. *Vaill. act.* 1719. *p.* 391.
F. vulgaris, flor. per caulem ſparſis. *Tourn. par.* 1. 141.
Stem panicled, flowers conical lateral.

7. Filago Leontopodium. *Lion's-foot Cudweed.*
Lin. ſpec. 1312. *Reich.* 941. *mant.* 481. *Hall. helv. n.* 152. *Jacqu. vind.* 150.
Gnaphalium Leontopodium. *Scop. carn. n.* 1045. *ann.* 2. 63. *Jacqu. auſtr. t.* 86. *Villars dauph.* 3. 191.
G. alpinum. *Cluſ. hiſt.* 1. 368.—pulchrum. *Bauh. hiſt.* 3. 161. *Raii hiſt.* 296.—magno flore, folio oblongo. *Bauh. pin.* 264.
Leontopodium. *Matth.* 1193. *Tabern. ic.* 393. *Dod. pempt.* 68.—parvum. *Ger.* 518. *f.* 11.
β. Gnaphalium alpinum magno flore folio brevi. *Bauh. pin.* 264. *Raii hiſt.* 296.
G. alp. pulchri aliud genus. *Bauh. hiſt.* 3. 161.
Leontopodium. *Ger.* 518. 10. *emac.* 642. 11.—majus. *Park. theat.* 684.
Stem very ſimple, head of flowers terminating radiated with very hirſute bractes.

DESCRIPTIONS, *&c.*

The Cudweeds are herbs covered with a hoary or cottony down. The flowers are uſually glomerate at the end of the ſtalk, and are ſometimes ſurrounded by a leafy ring. They are of the ſame natural genus with *Gnaphalium*, and are joined with it by Scopoli, *&c.* The firſt differs from the reſt in the ſhape of the receptacle, in having very few androgynous florets and all the ſeeds bald or naked.

1. A very ſmall plant, covered entirely with a white woolly nap, growing in a tuft. It has a little briſtle-form ſtem, a line or two, ſometimes half an inch, or at moſt an inch in height, erect, quite ſimple. Leaves moſtly cloſe to the ground, longer than the ſtem and flowers, quite entire, linear. One or two flowers terminate the ſtem, or are ſeſſile among the leaves. Calyx ſcarcely a line in length; the ſcales brown or reddiſh brown about the edge, aſh-coloured in the middle: the corollets are roſe-coloured, and the central ones yellowiſh[a].

According to Allioni, the ſeeds are crowned with a little membrane, and not with a *pappus* or down; and the receptacle is ſcaly.—Linneus affirms that it very ſeldom ſhoots up into ſtalk; and that the flowers are ſeſſile cloſe to the ground within a ring of leaves[b].

Cavanilles, with a zeal truly laudable, has defended Linneus from the intemperate and ill-founded attack of Monſ. Lamarck upon him reſpecting this plant, and has retorted it upon the aſſailant. He informs us that he has found cauleſcent plants about Madrid, accompanied by innumerable others abſolutely ſtemleſs, both flowering, fruiting and periſhing without any change from one to the other. In the latter caſe, the leaves are numerous, linear ovate, ſpread out in form of a roſe on the ground, the outer ones longer, the whole diameter an inch and half; from ſix to nine flowers are placed in the centre or near it, without any certain order. In the former caſe, there is ſometimes one ſtem, ſometimes ſeveral, and thoſe even branched; ſtem-leaves ſeſſile, numerous, ſublinear, broader at the end and blunt, thoſe which ſurround the flowers are in form of a roſe and larger, being a ſort of involucre; very frequently the ſtem at top is divided into a ſort of corymb, of unequal branchlets from ſix to nine, never ſo long as an inch. Calycine ſcales pellucid, ſmooth, with a divaricating briſtle at top: hermaphrodite florets five (ſeven to ten, *G.*) barren, naked, five-parted (four-toothed, *G.*); ſegments reflex, acute; in the females none. Receptacle acutely conical, naked (chaffy, *G.*) Down none.

Krocker and Cavanilles have given two figures of it, one in its ſeſſile, and another in its caulescent ſtate.

Native of the South of Europe, and of the Levant, in dried pools of water. Annual. Flowering at the end of ſummer.

2. Root annual, ſpindle-ſhaped. Several ſtems riſe immediately from the root, from ſix to twelve inches in height, the central one thickeſt and longeſt, cloathed with numerous, linear-lanceolate, waved, ſeſſile, downy leaves. At the ſummit a ſeſſile flowering head, beneath which are two or more branches bearing flowers, and theſe again proliferous[c]. The lower lateral branches overtopping the principal central head, gave occaſion to the old name of *Herba impia.*

Calyxes pyramidal, five-cornered, ſcales ſharp, ſhining, brown with yellowiſh edges[d]. Florets of three ſorts: 1. Two or three in the centre hermaphrodite; the border four-cleft, ſpreading; ſtigmas from erect patulous, the length of the border; germ ſmall, abortive, with a ſhort ſimple down. 2. On the ſides of the diſk numerous, female; tube ſlender ſwelling at the baſe; border four-cleft, erect; ſtigmas patulous, longer than the border; ſeed fertile, with a down like the other. 3. Between the ſcales of the calyx, five or ſeven, female; tube ſcarcely viſible with a glaſs; border bifid, ſharp; ſtyle longer than the border, with long, ſpreading ſtigmas; ſeed oblong, fertile, without any down[e].

The deſcription of Dr. Stokes differs in ſome points.—Flowers conical, ſeſſile, yellowiſh brown. Heads ſolitary, ſurrounded with ſcattered leaves. Filaments four; anthers with two briſtles at the baſe, as in *Inula.* Seeds in the diſk oblong, compreſſed, greeniſh brown, beſet with white pellucid glands, crowned with down; thoſe between the outer ſcales of the calyx abortive.—Dr. Withering adds, that the germs in all the florets are rough and have a down.

According to Gærtner, the receptacle is narrow, flat, hollow-dotted, naked and ſmooth. Seeds ſmall, obovate, compreſſed a little, having little briſtles ſcattered over them, pale. Down capillary, with eighteen rays, three times as long as the ſeed, and ſcarcely toothed.

Native of moſt parts of Europe, in barren paſtures, corn fields, and by way ſides: flowering in july and auguſt.

This plant is aſtringent; and a powder or decoction of it has ſometimes been given to cattle in the bloody flux; and has been tried with ſucceſs in ſimilar complaints of the human body. Farmers in England formerly gave it their cattle to reſtore the faculty of chewing the cud, whence it acquired the Engliſh name of Cudweed [f]. It is alſo called Chafeweed. Gerarde calls it *Herb impious*, or *wicked Cudweed*. Petiver names it *childing Cudweed*; and Hill, *forked Cudweed*.

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[a] Krocker.

[b] Linn. ſyſt.

[c] Woodw. Mſs.

[d] Lightfoot.

[e] Leers.

Mr. Hudſon obſerves that it varies with a very ſimple erect ſtem, and axillary ſeſſile flowers.

3. Stem one or two inches high, erect, little branched. Branches radical, bifid at the top. Leaves lanceolate, bluntiſh, preſſed to the ſtem, quite entire. Flowers from the forks and at the end of the ſtalk, ſeſſile, five-cornered and pyramidal, tomentoſe as is the whole plant, aggregate; ſurrounded with leaves [g]. Calycine ſcales three or four terminated by a thread, and between them a female flower, beſides ſix males or imperfect hermaphrodites in the centre [h].

It is probably no more, ſays Krocker, than a variety of the foregoing ſpecies. It differs however from it, in having a more ſimple ſtem, with only one branch or two at the end, and more erect: it is alſo more white and tomentoſe. The flowers are only at the end and in the uppermoſt fork. The leaves are more numerous, and preſſed cloſe to the ſtem. It is annual, like the foregoing, and flowers in auguſt.

Native of the South of France, Spain, and Sileſia.

4. Root annual. Stem two to ſix inches high, erect, much branched, leafy, downy. Leaves numerous, lanceolate, ſeſſile, downy, preſſed to the ſtem, three or four lines long [i]. Heads of flowers roundiſh, ſometimes from the ſides, with from three to five (or two to four) flowers in each. Calyx pyramidal, five-cornered, ſeſſile or on very ſhort peduncles, of a whitiſh green colour, ſhining at the top. In the very centre are four complete florets; about fifteen in the diſk, and four or five in the circumference, within the ſcales of the common calyx, with piſtils only, all fertile. Anthers of the complete florets four, with two briſtles at the baſe. Border of the florets four-cleft. Seeds of all the florets in the centre ſprinkled with very ſhort glandular hairs, and crowned with a capillary down; thoſe of the florets in the circumference very ſmooth and without a down [k]. The ſmallneſs of the heads or cluſters, and the few flowers which compoſe them, readily diſtinguiſh this ſpecies from the ſecond [l].

Native of moſt parts of Europe in ſandy paſtures, eſpecially in high grounds; alſo on walls and other dry barren places. It flowers in july and auguſt.

5. Root annual, often very long. The whole plant downy, but the down ſhorter than in the ſecond and fourth ſpecies, and of a ſilvery white. Stem from half a ſpan to a ſpan in height, leafy, much branched. Leaves about an inch long, half-ſtem-claſping, awl-ſhaped [m], ſubtomentoſe, yet ſmooth and not hirſute [n]. Flowers of both ſexes ſcattered among the leaves over moſt parts of the ſtem, almoſt always ſolitary, ſometimes on very ſhort petioles, glomerate, greeniſh white, conical, narrower than in the other ſpecies. The calyx continues, and when the plant is in a ſtate of maturity expands and forms a ring, as in *Gnaphalium ſtellatum* [o].

Native of France, Switzerland, Germany, England, in gravelly and ſandy ſoils: flowering in july and auguſt. With us it is not common; but was firſt obſerved by Mr. Dale near Caſtle-Hevening-ham in Eſſex; and ſince by Mr. Woodward on heaths in Derbyſhire.

6. Root annual. The whole plant very woolly, inſomuch that the heads of flowers are in a manner buried. Stem erect, a foot or eighteen inches in height, branched only at top. Leaves linear-lanceolate, two lines broad, five to ſeven long, and quite entire. Flowers glomerate, uſually terminating, whitiſh. Scales of the calyx linear, awned. Seed downy, except in the hermaphrodites. The flowers are female in the circumference, androgynous in the centre, and very ſmall [p].

Native of Sweden, Germany, France, Switzerland, Carniola, in ſandy ſoils; flowering in july and auguſt.

7. Height about ſix inches; the whole plant hoary, and terminated by an elegant lanuginous ſtar formed of oblong ſpreading leaflets of unequal lengths. In the centre of this is a head of flowers which are hermaphrodite, the corolla yellow and five-cleft, the anthers acuminate; the ſtyle whitiſh, the germ ſtreaked ſmooth dilated at the end and crowned with little briſtles, which when viewed with a magnifier appear feathered, the ſtigma longer than the anthers. Round this principal head on radiating very lanuginous bractes ſit other ſmaller heads in number as far as ſeven, in which ſome of the flowers are female ſmall four-cleft, with a long ſtyle and a bifid ſtigma; others are incomplete, yellow, and deſtitute of genuine ſtamens, ſtyle and germ. The middle head therefore is that of a Gnaphalium, and the ſide ones are thoſe of a Filago [q]. Perennial. It flowers in june and july.

Native of the mountains of Germany, Dauphiné, Switzerland, (where Ray found it on la Dolaz, one of the high points of mount Jura) the Valais, Auſtria, Carinthia, Carniola. Introduced in 1776, by Profeſſor de Sauſſure [r].

β. This differs from the other; 1. in having a ſlender root and ſhort leaves, whereas that has a large root and oblong leaves: 2. in having flowers of a very dark brown violet colour, whereas in the other they are pale yellow.

Native of Italy, as on monte Baldo near Verona, and in Germany. Probably in no wiſe different from the other [s].

PROPAGATION AND CULTURE.

All theſe, except the laſt, are annual plants, and being conſidered as weeds, are never cultivated except in botanic gardens. They may be propagated from ſeeds ſown in the autumn or ſpring, where they are to remain; and require no culture but to be thinned where they are too cloſe, and to be kept clean from weeds.

Filago. See *Athanaſia*, *Gnaphalium*, and *Micropus*.]

Filbert. See *Corylus*.

[Filicastrum. See *Oſmunda*.

Filicifolia. See *Xylophylla*.

Filicis folio. See *Acroſtichum*.

Filicula. See *Acroſtichum*.]

Filipendula. See *Pedicularis* and *Spiræa*.

[FILIX, (*from filum, a thread*) or Fern.

The plants that paſs under this general denomination, conſtitute the firſt order of the claſs Cryptogamia in the ſyſtem of Linneus, called Cryptogamia Filices. The fructification in this natural order differs eſſentially from all others, at leaſt in its ſituation; being generally diſpoſed either in ſpots or lines on the under ſurface of the fronds or leaves. There being no certain diſtinctions in the fructification ſufficient to eſtabliſh the genera, and the parts being too ſmall to be obſerved without the aſſiſtance of conſiderable magnifiers, the genera are chiefly diſtinguiſhed by the diſpoſition of the ſeeds under their covers.

The general ſtructure of the fructification in this order is the following. The *calyx* is a ſcale, ſpringing out of the leaf, opening on one ſide. Under this ſcale, commonly ſupported upon little footſtalks, but ſometimes ſeſſile, are *globules* for the moſt part encompaſſed by an elaſtic ring; theſe burſt with violence, and ſcatter a powder, which is ſuppoſed to be the ſeed. Theſe globules or ſeed-veſſels are covered by a very fine, thin, ſemitranſparent ſkin, which burſts open before the ſeeds are ripe. When they are ripe, the ring or cord endeavours to become ſtraight, and by its elaſticity tears open the capſule, which then forms two hemiſpherical cups, like that of the *Anagallis*. This curious mechaniſm may be obſerved by the aſſiſtance of a good ſingle microſcope, with a reflecting ſpeculum, during the months of ſeptember and october, in *Pteris aquilina*, or common Brakes, and *Aſplenium Scolopendrium* or Hart's-tongue. The powder which is diſperſed in this operation is ſo minute as hardly to be viſible to the naked eye[t]. That it is the ſeed has been proved by actually raiſing plants from that of the Hart's-tongue, by Moriſon; and lately in the moſt ſatiſfactory manner by Mr. John Lindſay, ſurgeon in Jamaica, from Polypodium lycopodioides[u]. Hedwig thinks that he has detected male flowers, or anthers, either ſeſſile, or elſe on a very ſhort filament, ſcattered over the back of the frond, of an ovate or ſubglobular form.

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[f] Lightfoot, Withering, Ray. [g] Linn. ſpec. D'Aſſo, Krocker. [h] Villars. [i] Woodw. Mſs. [k] Stokes in With. [l] Ray. [m] Woodw. Mſs. [n] Linn. [o] Krocker.

[p] Scopoli, Krocker, Leers, Haller. [q] Scopoli. [r] Hort. kew. [s] Ray.

From this ſingularity of the fructification being on the back or lower ſide of the leaf, the older botaniſts named the order in which they ranged the Ferns, *Epiphylloſpermæ* and *Dorſiferæ*.

Since the late diſcoveries of Hedwig and others, Equiſetum, Salvinia, Marſilea, Pilularia, Iſoetes, which ſtood among the Ferns, together with Lycopodium and Porella, which were placed in the order of Muſci by Linneus, have been united to form a new order, entitled Miscellaneæ, which now ſtands firſt of the claſs Cryptogamia, in Linneus's Genera Plantarum, as publiſhed by Schreber.

The uſes of the Ferns are little known. Few of them are eſculent. They have a diſagreeable heavy ſmell. In large doſes they deſtroy worms; and ſome of them are purgative. The aſhes produced by a ſlow incineration of the green plants, contain a conſiderable portion of vegetable alkali, and are generally ſold under the name of Aſh-balls, to make lye for waſhing linen[x]. Common brakes, cut down when fully grown and dried, makes very good litter; and this, with ſome others, forms a thatch more durable than ſtraw.

South America and the Weſt India iſlands furniſh abundance of ſpecies, many of which grow to a great ſize, and others are very ornamental plants in our hot-houſes.

For particulars concerning the genera and ſpecies of this order, ſee *Acroſtichum, Adiantum, Aſplenium, Blechnum, Cænopteris, Hemionitis, Lonchitis, Marattia, Meniſcium, Onoclea, Ophiogloſſum, Oſmunda, Polypodium, Pteris* and *Trichomanes*.

Fingrigo. See *Piſonia*.

Finochio. See *Anethum*.]

Fir-tree. See *Pinus*.

[Fissidens, *Hedw. fund.* 2. 91.—Dicranum. *Schreb. gen. n.* 1644. A genus comprehending ſeveral ſpecies of Moſs, belonging to Linneus's genera of Mnium, Bryum and Hypnum.

Fistula. See *Caſſia*.

Fistularia. See *Pedicularis*.

Fitt-weed. See *Eryngium*.

FLACOURTIA. (*In memory of Stephen de Flacourt, of Orange, who firſt ſketched out in* 1661 *a natural hiſtory of Madagaſcar.*)

L'Herit. ſtirp. nov. t. 30, 31. *Juſſ.* 291. *Lin. gen. Schreb.* 1546.

Claſſ. 22. 11. Dioecia Polyandria.

Nat. order of *Tiliaceæ* Juſſ.

GENERIC CHARACTER.

Male.

Cal. *Perianth* one-leafed five-parted: *parts* roundiſh, obtuſe, almoſt equal, from ſpreading erect.

Cor. none.

Stam. *Filaments* numerous (fifty to one hundred) longer than the calyx, and faſtened to its thickened bottom, ſpreading, capillary. *Anthers* roundiſh.

Pist. the rudiment of a germ and ſtigma at moſt.

Female.

Cal. *Perianth* five-leaved: *leaflets* roundiſh, erect, lying over each other at the edge, blunt.

Cor. none.

Pist. *Germ* ſuperior, ovate, large. *Style* none. *Stigma* flat, ſtellate, with rays from five to nine.

Per. *Berry* globular, fleſhy, umbilicate with the ſtigma, many-celled.

Seeds in pairs, obovate, compreſſed, obſcurely grooved.

ESSENTIAL CHARACTER.

Male. *Cal* five-parted. *Cor.* none. *Stam.* very numerous.

Fem. *Cal.* many-leaved. *Cor.* none. *Germ* ſuperior. *Styles* five to nine. *Berry* many-celled.

SPECIES.

1. Flacourtia Ramontchi.

L'Herit. ſtirp. nov. 59. *t.* 30. *Ait. hort. kew.* 3. 413.

Alamotou. *Flac. mad.* 124.

Flacurtia madecaſſia. *Commerſ. Mſs.*

DESCRIPTION, &c.

It is a ſmall tree or rather ſhrub, very buſhy, thorny, and growing to the height of eight or ten feet. *Stem* erect, branching, round, leprous, aſh-coloured. Branches with their ſubdiviſions alternate, patulous, round, thorny, dotted with tubercles, bay-coloured. Suckers at firſt without thorns, but ſoon acquiring them, ſcarcely pubeſcent, purpliſh. Thorns lateral or axillary, ſolitary, ſubulate, patulous, longer than the petiole, the upper ones gradually ſmaller. *Leaves* alternate, petioled, ſpreading, ovate or oval, ſharp, crenulate-ſerrate, almoſt entire at the baſe, ſmooth and ſhining, of a firm texture, and reſembling thoſe of the Plum: the midrib beneath very little prominent, and the veins hardly viſible; flat, bright green, ſometimes purpliſh about the edges, eighteen to twenty-four lines long, and fifteen to twenty lines broad: petioles one-ſixth of the length of the leaves, round, pubeſcent, red. Racemes terminating, erect, peduncled. Flowers two to ſeven pedicelled. The males ochroleucous, four lines in breadth: in the garden only one or two in a raceme, the lateral flower moſtly abortive: females herbaceous yellowiſh, one or two lines in diameter: in the garden ſolitary. The fruit is the ſize and ſhape of a ſmall Plum, green when young, of a beautiful red when ripe, and finally of a dark violet colour: the ſkin is very thin, and the fleſh tranſparent red, of the ſame conſiſtence with our common Plums: in the middle are a dozen or fourteen ſmall kernels, the ſize of thoſe in the apple, and nearly of the ſame ſhape; they are bitteriſh, like our Apricot kernels, and covered with a tender ſhell. The natives eat the fruit; it is ſweet, but leaves a ſlight ſharpneſs in the mouth. An iſland on the coaſt of Madagaſcar is covered with theſe trees; and becauſe they reſemble the European Plum tree, the ſailors have named the iſland *Iſle aux Prunes*, or *Plum-tree Iſland*.

This tree was firſt obſerved by M. Poivre and M. Commerſon on the iſland of Madagaſcar. Both male and female trees have flowered in the Paris garden, but have been hitherto barren: they have not however yet been obſerved to flower at the ſame time[a].

M. L'Heritier has given two plates, the firſt repreſenting the plant as it appears in the greenhouſe, and the ſecond the plant in its wild ſtate.

It was introduced here in 1775, by Monſ. Richard, and flowers in june and july[b].

Flag, Common. See *Iris*.

——, Corn. See *Gladiolus*.

——, Sweet. See *Acorus*.

FLAGELLARIA. (*From the form of the leaves like a ſcourge.*)

Lin. gen. n. 450. *Reich. n.* 486. *Schreb. n.* 614. *Juſſ.* 41. *Gærtn. t.* 16?

Claſſ. 6. 3. Hexandria Trigynia.

Nat. order of *Tripetaloideæ*. *Aſparagi* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* ſix-leaved, (ſix-parted, *ſyſt.*) equal, (ſpreading-bell-ſhaped, *Juſſ.*): *leaflets* ovate, permanent, the outer ones ſharper, (all concave, *G.*)

Cor. none.

Stam. *Filaments* ſix, filiform, almoſt the length of the calyx. *Anthers* oblong.

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[t] Withering.

[u] Linn. tranſ. 2. 98.

[x] Withering.

[a] L'Heritier and Poivre.

[b] Hort. kew.

Pist. *Germ* ovate, very ſmall. *Style* length of the ſtamens, trifid. *Stigmas* three, ſimple, flattiſh, permanent.

Per. *Drupe* (berried, *G. Berry, ſyſt.*) roundiſh, one-celled, crowned with the flower, (ſuperior, three-celled, *G.* three-ſeeded, two frequently abortive, *J.*)

Seed, a round ſtone or *nucleus.*

ESSENTIAL CHARACTER.

Cal. ſix-parted. *Cor.* none. *Berry* (or Drupe) one-ſeeded, (two cells of the nucleus ſmall and abortive).

SPECIES.

1. Flagellaria indica.
Lin. ſpec. 475. *ſyſt.* 348. *Reich.* 2. 124. *Fl. zeyl. n.* 133. *amœn.* 1. 398. *Rumph. amb.* 5. 120. *t.* 59. *f.* 1. *Rheed. mal.* 7. 99. *t.* 53. *Raii ſuppl.* 573. 1. *Burm. zeyl.* 35. 1. *Lour. cochinch.* 211.
Stem round, climbing; leaves ovate terminated by a tendril.

2. Flagellaria repens.
Lour. cochinch. 212. *Rumph. amb.* 5. 490. *t.* 184. *f.* 1.
Stem angular creeping, leaves jointed in pairs.

DESCRIPTIONS, &c.

1. A ſhrub taller than a man. Branches diſtich, ſcaly or ſheathed at the baſe. Leaves ending in a tendril, as in *Glorioſa,* all protected by a long entire ſheath. Flowers in a panicle at the end of the ſtem. It ſeems to bear a near affinity to the Cane and Ruſhes [c].

Loureiro thus deſcribes it. Stem perennial, round, twenty feet high, climbing, with few branches. Leaves ſimple, oblong-ovate, acuminate, three-nerved, ſmooth, alternate, on ſheathing, unarmed petioles. Flowers white, in a looſe terminating raceme. Calyx ſix-parted. Stamens eight, ſhort. Fruit a ſmooth red berry, juicy, and incloſing one ſeed.

Gærtner (p. 61.) has deſcribed a fruit under the name of *Flagellaria,* which he ſuppoſes to be different from this of Linneus's.

Native of the Eaſt Indies, Cochinchina, and of Guinea. Introduced in 1782, by the Earl of Tankerville and Dr. Pitcairn [d].

2. Stem perennial, twelve feet high, branched, unarmed, ſubparaſitical, or creeping up trees by lateral fibres, but preſerving its original root. Leaves linear, appendicled at the middle joint, ſmooth, alternate, half-ſtem-claſping. Flowers terminating, with a long bundled ſpadix, and a linear common ſpathe. Calyx none. Stamens ſix, dilated at the baſe. Stigma ſeſſile, three-parted. Berry ſmooth, red, incloſing one ſeed.

Native of Cochinchina.—Rumphius has two other ſpecies figured in the ſame plate 184 [e].

PROPAGATION AND CULTURE.

Sow the ſeeds in ſmall pots of light earth, plunge them in the bark-bed: when they are fit to tranſplant, place them ſingle in ſmall pots, ſhading them till they have ſtruck root, and watering them gently.

Flamma. See *Ixora.*]

Flammula. See *Clematis,* [*Pavetta* and *Ranunculus.*

Flax. See *Linum.*

——, Toad. See *Antirrhinum Linaria.*

Flea-bane. See *Conyza, Erigeron,* and *Inula.*

Flea-grass. See *Carex.*

Fleawort. See *Plantago.*

Flix-weed. See *Siſymbrium Sophia.*

Flos Adonis. See *Adonis.*

—— Aeris. See *Epidendrum.*]

—— Africanus. See *Tagetes.*

[—— cæruleus. See *Clitoria.*

—— cardinalis. See *Ipomoea.*

—— clitoridis. See *Clitoria.*

—— Cuculi. See *Cardamine.*

—— Globosus. See *Gomphrena.*]

—— Passionis. See *Paſſiflora.*

[—— pergulanus. See *Pergularia.*

—— Regius. See *Delphinium.*]

—— Solis. See *Ciſtus* and *Helianthus.*

[——-Susannæ. See *Orchis.*]

Flos Trinitatis. See *Viola.*

—— Vestivalis. See *Hibiſcus.*

Flower-De-Luce. See *Iris.*

Flower-Fence. See *Adenanthera.*

Flower-gentle. See *Amaranthus.*

Flowering-Fern. See *Oſmunda regalis.*

Flowering Rush. See *Butomus.*

Fluellin. See *Antirrhinum,* and *Veronica.*

Fluvialis. See *Najas.*

Fly Honeysuckle. See *Halleria* and *Lonicera.*

Fly Orchis. See *Ophrys.*

Foeniculum. See *Anethum, Crithmum, Pimpinella, Seſeli, Siſon.*]

Foenum Burgundicum. See *Medicago.*

——— Græcum. See *Ononis, Trifolium,* and *Trigonella.*

[FONTANESIA. (*So named by Billardiere in honour of Monſ. Desfontaines, of the royal academy of ſciences at Paris.*)

Billardiere ic. ſyr. t. 1.

Claſſ. 2. 1. Diandria Monogynia.

Nat. order of *Sepiariæ. Jaſmineæ* Juſſ.

GENERIC CHARACTER.

Cal. four-parted, inferior, very ſmall, permanent, blunt at the ends.

Cor. two-petalled: *petals* two-parted, parts ovate obtuſe concave.

Stam. *Filaments* two, long, filiform, inſerted into the claws of the corolla. *Anthers* oblong, two-grooved.

Pist. *Germ* ovate. *Style* compreſſed, ſhorter than the ſtamens. *Stigmas* two, inflex-hooked.

Per. *Capſule,* not opening, ſubovate, emarginate, compreſſed-membranaceous, in the centre two-celled (very rarely three-celled, three-winged.)

Seeds ſolitary, oblong-columnar.

ESSENTIAL CHARACTER.

Cal. four-parted, inferior. *Petals* two, two-parted. *Capſ.* membranaceous, not opening, two-celled, cells one-ſeeded.

SPECIES.

1. Fontaneſia phillyreoides.
Billard. ſyr. dec. 1. *p.* 9. *t.* 1.
Leaves ovate-oblong ſharp at both ends, flowers in racemes.

DESCRIPTION, &c.

Stem fruteſcent, erect, twelve feet high. Branches oppoſite, erect, the younger ones quadrangular. Leaves evergreen, oppoſite, veined underneath; the lower ones ovate: petioles ſhort, knee-jointed. Flowers axillary yellow.

The corolla may be conſidered as one-petalled and four-parted, with two of the parts more deeply cut, for the filaments are inſerted into the corolla. It is allied therefore to Fraxinus and Chionanthus: but it differs from the firſt in having a two-celled fruit; from the ſecond in the fruit being a capſule, not a drupe.

Native of Syria, between Laodicea and mount Caſſius [f].

Fontilapathum. See *Potamogeton.*

FONTINALIS, (a fonte. *Theſe moſſes uſually growing in ſprings.*)

Lin. gen. 1190. *Schreb.* 1655. *Dill. muſc.* 254.

Cryptogamia Muſci, or Moſſes.

GENERIC CHARACTER.

Capſule oblong, with the mouth ciliate; opening with an acuminate lid; covered with a ſeſſile, ſmooth, conical *veil*; and included in a pitcher-ſhaped, imbricate *perichætium.*

SPECIES.

Only four ſpecies are recited in Syſt. veget. They are all natives of England, and may be found in Mr. Hudſon's Flora Anglica. The three firſt, viz. *F. antipyretica, minor,* and *ſquamoſa,* are water-moſſes: the laſt, *F. pennata* grows on trees.

Dr. Withering has two more ſpecies, *F. capillacea, Dillen.* 33. 5. *Dickſon,* 2. 1. and *alpina, Dickſ.* 2. 4. 1.

Several new ſpecies have been diſcovered by Swartz in the Weſt Indies; and one in Cochinchina by Loureiro.

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[c] Linn. and Juſſieu.

[d] Hort. kew.

[e] Loureiro.

[f] Billardiere

Fontinalis. See *Bryum*, *Polygonum amphibium*, and *Potamogeton*.

Fool's-Parsley. See *Æthuſa*.

FORSKOHLEA. (*So named in memory of Peter Forſkähl, a Swede; born in 1732; he was Profeſſor at Copenhagen; travelled at the expence of the King of Denmark into Egypt and Arabia; and died in the latter, of the plague, on the 11th of july, 1763.*)

Lin. gen. Reich. n. 639. *Schreb. n.* 687. *mant.* 11. *Gærtn. t.* 68. *Juſſ.* 403. Caidbeja. *Forſk. flor.* 82.

Claſſ. 8. 4. Octandria tetragynia.
—— 10. 4. Decandria pentagynia.
Nat. order of *Urticæ* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* four or five-leaved, erect: *leaflets* linear-lanceolate, parallel, acute, permanent.

Cor. *Petals* eight or ten, rude, ſpatulate, concave, erect, withering, ſhorter than the calyx, the claws the length of the border.

Stam. *Filaments* eight or ten, filiform, each within each petal, elaſtic, the length of the calyx. *Anthers* twin, roundiſh.

Pist. *Germs* four or five, diſtant, oblong, woolly. *Styles* briſtle-ſhaped. *Stigmas* ſimple.

Per. none. (Capſules five, woolly, ovate, acuminate at both ends, compreſſed, one-celled, not opening, *G.*)

Seeds four or five, oblong, compreſſed, attenuated to both ends, interwoven with wool. (Solitary, *Gærtn.* who names capſules, what are here called ſeeds.)

Obs. *The number varies in the parts of fructification, and is extricated with difficulty, on account of the wool in which they are involved.—The number of capſules varies from three to five.* G.

ESSENTIAL CHARACTER.

Cal. four or five-leaved, longer than the corolla. *Petals* eight or ten, ſpatulate. *Peric.* none. *Seeds* five, connected by wool. (*Capſ.* five, woolly. *Seeds* ſolitary, G.)

SPECIES.

1. Forſkohlea tenaciſſima. *Clammy Forſkohlea.*
Lin. ſyſt. 437. *Reich.* 2. 405. *mant.* 72. *ſuppl.* 245. *faſc.* 1. *t.* 1. *Jacqu. hort.* 1. 18. *t.* 48. *Gærtn. fruct.* 332. *Ait. hort. kew.* 2. 121.
F. latifolia. *Retz. obſ.* 3. *n.* 51?
Caidbeja adhærens. *Forſk. ægypt.* 82.
Chamædrifolia tomentoſa. *Pluk. alm. t.* 275. *f.* 6?
Hairy-hiſpid, leaves elliptic awnleſs, calycine ſegments oblong-lanceolate ſharp.

2. Forſkohlea candida. *Rough Forſkohlea.*
Lin. ſyſt. 437. *ſuppl.* 245. *Ait. hort. kew.* 2. 122.
F. ſcabra. *Retz. obſ.* 3. *n.* 49.
Scabrous; leaves elliptic waved awnleſs; calycine ſegments ovate obtuſe.

3. Forſkohlea anguſtifolia. *Narrow-leaved Forſkohlea.*
Lin. ſyſt. 437. *Retz. obſ.* 3. *n.* 50. *Murr. in comm. gott.* 1784. *p.* 24. *t.* 2.
Strigoſe; leaves lanceolate, the teeth thorny-briſtle-ſhaped; calycine ſegments lanceolate-ſubulate.

DESCRIPTIONS, &c.

1. Root annual. Stem two feet high, panicled, round, hiſpid, red; with alternate branches. Leaves alternate, petioled, ovate, marked with lines, and five or ſix ſerratures about the edge, hiſpid, and the hairs of the upper ſurface hooked. Petioles round, ſhorter than the leaves. Flowers axillary, in pairs, ſeſſile, rough-hairy, deciduous with the fruit, when that is ripe[a].

According to Jacquin, the ſtem is a foot or a foot and half high, partly red, partly pale green with blood-red dots, hiſpid with white hairs and upright. Leaves entire at the baſe, looſely ſerrate, ſharp, very pale green, ciliate with ſhort hairs, hooked at the end, whence they adhere to any thing. Petioles round and hiſpid. Bractes lanceolate, acuminate, hirſute. Calyx commonly five-leaved; leaflets flat, unequal, extremely hirſute. Corolla compreſſed, petals uſually eight. The whole ſtyle extremely hirſute.

Native of Egypt. Introduced in 1770, by Monſ. Richard. It flowers in july and auguſt.

2. Stem ſhrubbyiſh, ſmooth, reſembling that of the foregoing, whitiſh and woody at the baſe. Leaves oval, petioled, alternate, with three or four angles or teeth on each ſide, much ſmaller than in the foregoing ſpecies, white-tomentoſe underneath, adhering by the roughneſs on the upper ſurface, as in *F. tenaciſſima*. Flowers axillary, ſeſſile, ſmaller than in the firſt ſpecies: petals white. Segments of the calyx whitiſh, and reſembling a corolla[b].

Native of the Cape of Good Hope. Introduced in 1774. It flowers in june and july. Perennial[c].

3. Annual. Adhering like the others. Stem red. Leaves with four and ſometimes only three ſmall teeth on each ſide, ending in a ſmall ſpine; not white underneath, but adhering by little ſpines on the nerves. Piſtils three[d].

Native of the iſland of Teneriffe. Introduced in 1779. It flowers in july and auguſt[e].

FORSTERA. (*Named in memory of John Reinhold Forſter, the father, and George Forſter, the ſon, who in a voyage round the world collected and deſcribed many new genera and ſpecies of plants.*)

Lin. ſuppl. 59. *Gen. Schreb.* 1379. *Juſſ.* 423.
Claſſ. 20. 1. Gynandria Diandria.

GENERIC CHARACTER.

Cal. *Perianth* double: *outer* inferior, three-leaved, lateral; leaflets oblong, ſharp: *inner* ſuperior, ſix-cleft; leaflets erect, oblong, concave.

Cor. one-petalled, tubulous-bell-ſhaped: *tube* length of the calyx: *border* ſix-parted; *diviſions* oblong, obtuſe, patulous, reflex at the tip, equal.

Nectary two ſmall ſcales, obovate, petal-form, fixed to the ſtyle on both ſides under the ſtigma.

Stam. *Filaments* two, very ſhort, each fixed to the ſtyle between the ſtigma and a ſcale of the nectary under the ſtigma.

Pist. *Germ* inferior oval. *Style* cylindric, erect, the length of the tube of the corolla. *Stigmas* two, broad, ſpreading, ſomewhat bearded.

Per. *Capſule* oval, one-celled.

Seeds numerous, ſhaped like ſaw-duſt, fixed to a columnar receptacle.

ESSENTIAL CHARACTER.

Perianth double: *outer* inferior, three-leaved; *inner* ſuperior, ſix-cleft. *Cor.* tubular.

SPECIES.

1. Forſtera ſedifolia.
Lin. ſyſt. 819. *ſuppl.* 407. *Forſt. act. nov. upſ.* 3. *p.* 184. *t.* 9. *Fl. auſtr. n.* 324.

DESCRIPTION, &c.

Stem herbaceous, proſtrate, aſcending, a hand in height, ſomewhat branched. Leaves imbricate, ſeſſile, obovate, ſharpiſh, quite entire, ſmooth, preſſed to the ſtem, from ſpreading reflex at the tip, without veins, ſmall. Peduncles ſolitary, one-flowered, terminating, erect, red, long. Flowers white, except at the throat and inſide of the calyx, where they are red.

According to Forſter (in Act. upſ.), the ſtem is flexuoſe, jointed, ſlender, brown. Leaves acute, fleſhy. Peduncles filiform, very long, very ſeldom two-flowered.

Native of New Zealand, on the tops of the higheſt mountains[f].

Gærtner has a plant which was given him by Forſter under the name of *Forſtera glabra*, and which he calls *Athecia glabra*. He deſcribes the calyx as five-parted and ſuperior, with linear-lanceolate permanent leaflets. The fruit an inferior berry, ovate, fleſhy, becoming finally coriaceous and wrinkled, crowned with the calycine leaflets, and within them with a flat area, having a little teat in the middle, and one-celled. Seed ſingle, large, of an oblong ſpheroidal form, marked with a depreſſed longitudinal line, reſembling a ſpurious ſuture, produced at the baſe into a conical crooked beak, of a reddiſh bay-colour, ſmooth and very hard. The ſituation of the embryo is ſingular and very unuſual, for it is not only excentrical, or placed without the axis; but one edge of the cotyledons or lobes faces the back, and the other the belly of the ſeed.

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[a] Linn.

[b] Linn. ſuppl. and Retz. [c] Hort. kew. [d] Retz. and Murr.
[e] Hort. kew. [f] Linn. ſuppl.

Forsythia. See *Decumaria.*

FOTHERGILLA. (*In memory of John Fothergill, M. D. an eminent phyſician, and patron of Botany; who cultivated a variety of the moſt curious plants in his garden near London.*)

Lin. gen. Reich. n. 734. *Schreb.* 922. *ſuppl.* 42. *Juſſ.* 408.
Claſſ. 13. 2. Polyandria Digynia.
Nat. order of *Amentaceæ,* Juſſieu.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, bell-ſhaped, cloſe, truncate, ſhort, permanent.

Cor. none.

Stam. *Filaments* very many, filiform, thicker at top, long. *Anthers* minute, erect, quadrangular.

Pist. *Germ* ovate, bifid. *Styles* two, ſubulate, terminating, the length of the ſtamens.

Per. *Capſule* hardened, two-lobed, two-celled; *lobes* two-valved.

Seeds ſolitary, bony.

ESSENTIAL CHARACTER.

Cal. Ament ovate; ſcales one-flowered. *Cor.* calyx-form, one-petalled, five-cleft.

SPECIES.

1. Fothergilla alnifolia.
Lin. ſyſt. 502. *ſuppl.* 267. *Ait. hort. kew.* 2. 241.
α. F. obtuſa. *Broad-leaved Fothergilla.*
Mill. ic. t. 1.
β. F. acuta. *Narrow-leaved Fothergilla.*
F. Gardeni. *Jacqu. collect.* 1. 97.

DESCRIPTION, &c.

A tree, having the appearance and leaves of Alder. Leaves alternate, petioled, wedge-ſhaped, entire, ſerrate at the tip, ſerratures very large and few, the upper ſurface green, the lower hoary, the younger ones white with nap underneath. Flowers in a cloſe ſpike at the end of the ſtem, like an oblong head, and white. Capſules large, ovate, very hirſute, ſharp, two-celled: the valves opening into four points, until the ſeeds are ripe. The flowers come out in the beginning of ſpring from the buds at the end of the branches before the leaves. The flower is an ament. The fruit reſembles that of *Hamamelis,* but the flower is very different[a].

Native of North America. Introduced in 1765, by Mr. John Buſh. It flowers from april to june[b].

β. Jacquin deſcribes this as a branching ſhrub, with ferruginous round branches. Leaves oblong, obſcurely crenate at top, on ſhort petioles, alternate, ſmooth. Spike at the end of the branchlets, ſeſſile, ovate, cloſe. Flowers ſweet-ſmelling, honied, ſeſſile. The one-leaved perianth is an ovate, obtuſe, concave, entire ſcale, with black hairy dots ſcattered over it, and ciliate with black hairs. Corolla none. Filaments about eighteen, white, filiform, thickiſh, almoſt upright, twice as long as the calyx. Anthers roundiſh, twin, yellow. Germ green, roundiſh, bifid. Styles two, awl-ſhaped, upright, the length of the ſtamens. Stigmas ſimple, ſharp. Capſule two-celled. Seeds ſolitary.

Native of Carolina.

Fothergilla, Aubl. See *Melaſtoma.*

Fox-glove. See *Digitalis.*

Fox-grape. See *Vitis vulpina.*

Fox-tail Grass. See *Alopecurus.*]

FRAGARIA, (*of Pliny. So named from the fragrancy of the fruit.*)

Engl. *Strawberry.* Fr. *Fraiſier.*
Lin. gen. n. 633. *Reich. n.* 689. *Schreb. n.* 865. *Tournef.* 152. *Gærtn.* 73. *Juſſ.* 338.
Claſſ. 12. 5. Icoſandria Polygynia.
Nat. order of *Senticoſæ. Roſaceæ,* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, flat, ten-cleft; *diviſions* alternately exterior and narrower.

Cor. *Petals* five, roundiſh, ſpreading, inſerted into the calyx.

Stam. *Filaments* twenty, ſubulate, ſhorter than the corolla, inſerted into the calyx. *Anthers* lunular.

Pist. *Germs* numerous, very ſmall, collected into a head. *Styles* ſimple, inſerted at the ſide of the germ. *Stigmas* ſimple.

Per. none. *Common Receptacle* of the ſeeds (vulgarly called a berry) ovate, pulpy, ſoft, large, coloured, truncate at the baſe, and deciduous.

Seeds numerous, very ſmall, acuminate, ſcattered over the ſurface of the receptacle: (a little compreſſed, ſmooth, glittering, *G.*)

ESSENTIAL CHARACTER.

Cal. ten-cleft. *Pet.* five. *Recept.* of the ſeeds ovate, and like a berry.

SPECIES.

1. Fragaria veſca. *Eſculent Strawberry.*
Lin. ſpec. 708. *Reich.* 2. 537. *hort. cliff.* 192. *upſ.* 133. *fl. ſuec. n.* 450. *Gærtn. fruct.* 350. *Hudſ. angl.* 221. *With.* 529. *Relh. cant. n.* 371. *Lightf. ſcot.* 267. *Hall. helv. n.* 1112. *Neck. gallob.* 223. *Pollich pal. n.* 491. *Leers herborn. n.* 391. *Blackw. t.* 77. *Duham. t.* 1. *Berg. phyt.* 267. *Krock. ſileſ. n.* 789. *Allion. pedem. n.* 1491. *Lour. cochinch.* 325. *Villars dauph.* 3. 560.
Potentilla veſca. *Scop. carn. n.* 625. *Ger. prov.* 470. *n.* 12.
α. Fragaria. *Dod. pempt.* 672. 2. *Ger.* 844. 1. *emac.* 997. 1. *Raii hiſt.* 609. *ſyn.* 254. *Petiv. brit. t.* 40. *f.* 7.
F. vulgaris. *Bauh. pin.* 326. *Lin. lapp.* 209.
F. veſca. *Mill. dict. n.* 1. *Common Wood Strawberry.*
F. ſylveſtris. *Mor. hiſt. ſ.* 2. *t.* 19. *f.* 2. *Ait. hort. kew.* 2. 211.
F. ferens fraga alba & rubra. *Bauh. hiſt.* 2. 394. 3.
F. fructu albo. *Bauh. pin.* 326. *Ger.* 844. 2. *emac.* 997. 2. *Duham. n.* 2. *White Wood Strawberry.*
F. fructu viridi. *Duham. n.* 17. *t.* 9. *Green* or *Pine-apple Strawberry.*
F. alpina. *Duham. n.* 7. *t.* 2. *Alpine Strawberry.*
F. rubra. *Schwenckf.* 1. *p.* 74. *Krock. ſileſ.* 2. 158.
F. fructu hiſpido. *Ger. emac.* 998. *Raii hiſt.* 609. 2. *ſyn.* 254. 2.—F. aculeata. *Park. parad.* 527. *f.* 8. *Rough-fruited Strawberry.*
β. F. fructu parvi pruni magnitudine. *Bauh. pin.* 327.
F. muricata. *Mill. dict. n.* 3.
F. veſca pratenſis. *Ait. hort. kew.* 2. 211.
F. hortenſis major. *Mor. hiſt. ſ.* 2. *t.* 19. *f.* 1?
F. bohemica maxima. *Park. parad.* 527. *f.* 7. *Raii hiſt.* 609. 3.
Le Capiton. *Ducheſne fraiſ.* 145. *Duham. n.* 14, 15, 16. *t.* 8.
Hautboy Strawberry.
γ. F. chiloenſis. *Mill. dict. n.* 4. *Ait. hort. kew.* 211. *Dill. elth.* 145. *t.* 120. *f.* 146.
Le Frutiller. *Duch. fr.* 165. *Duham. n.* 9. *t.* 3.
Chili Strawberry.
δ. F. virginiana. *Mill. dict. n.* 2. *Ait. hort. kew.* 211. *Park. parad.* 528. *Raii hiſt.* 609.
Le Fraiſier ecarlate. *Duch. fr.* 204. *Duham. n.* 11. *t.* 5.
Scarlet or *Virginian Strawberry.*
ε. F. Ananas. *Mill. fig.* 192. *t.* 288. *Ait. hort. kew.* 212.
Le Fraiſier Ananas. *Duch. fr.* 190. *Duham. n.* 12. *t.* 6.
Pine Strawberry.
[ζ. F. caroliniana.
Le Fraſier de Caroline. *Duham. n.* 13. *t.* 7.
Carolina Strawberry.
Creeping by runners.

2. Fragaria monophylla. *Simple-leaved Strawberry.*
Lin. ſyſt. 476. *Reich.* 538. *Curtis magaz. t.* 63. *Ait. hort. kew.* 2. 212.

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[a] Linn. ſuppl. and ſyſt.

[b] Hort. kew.

Le Fraiſier de Verſailles. *Ducheſne fraiſ.* 124. *Duham. n.* 5.

Leaves ſimple.

3. Fragaria ſterilis. *Barren Strawberry.*

Lin. ſpec. 709. *ſyſt.* 476. *Reich.* 538. *Hudſ. angl.* 222. *With.* 530. *Curtis lond.* 3. 30. *Relh. cant. n.* 372. *Lightf. ſcot.* 268. *Hall. helv. n.* 1113. *Neck. gallob.* 223. *Pollich pal. n.* 492. *Krock. ſileſ. n.* 790. *Bauh. pin.* 327. *Lob. ic.* 1. 698. *Ger. emac.* 998. *Petiv. brit. t.* 40. *f.* 8. *Mor. hiſt. ſ.* 2. *t.* 19. *f.* 5. *Vaill. par. t.* 4. *f.* 1. *Raii hiſt.* 611. *ſyn.* 254.

F. minime veſca. *Park. theat.* 758. *Bauh. hiſt.* 2. 395.

Potentilla fragarioides. *Villars dauph.* 3. 561.

Stem decumbent, flowering branches lax.

DESCRIPTIONS, *&c.*

1. This ſpecies is ſufficiently diſtinguiſhed by the long ſlender runners, which it throws out from the root, and by means of which it increaſes abundantly—by its ternate leaves—and its remarkable fleſhy receptacle commonly called a berry, but having the outer ſurface ſtudded with the ſeeds. From the firſt and laſt of theſe characters it obtained the Engliſh name of *Strawberry:* for it is a plant whoſe running ſtems are ſtrewed (anciently *ſtrawed*) over the ground, and whoſe fruit is uſually regarded as a berry.

In German it is *Erdbeere*; in Daniſh *Jordbær:* (theſe convey the ſame idea with the Engliſh name,) "*humi naſcentia fraga:*" in Swediſh *Smultron*, in Smoland *Jordbar* (Earth-berry), in Dalekarlia *Jolebar*, in Gothland *Rodbar*; in French *le Fraſier, la Fraiſe*; in Italian *Fragaria, Fragola, Fravola*; in Spaniſh *Freſera, Freſa*; in Portugueſe *Morangueiro, Fragaria, Morango*; in Ruſſian *Semljaniza.*

I have recited the moſt remarkable varieties; but ſince the cultivation of this delicate and ſalutary fruit has become ſo extenſive, and different parts of the world have furniſhed ſeveral remarkable ones, varieties are daily increaſing, and certainly may be multiplied by the mixture of the farina, and ſowing the ſeeds.

It is obſerved by Monſ. Duhamel, that in our European Strawberries there are generally four ſtamens to each petal, but in thoſe of America five or ſix: ſo that when the flowers of the latter have the regular number of petals, they have from twenty-five to thirty ſtamens; but when they have ſeven petals, the number of ſtamens is from thirty-five to forty-two. In the European Strawberries when any ſupernumerary petals are placed in a row before the regular ones, each diminiſhes the number of ſtamens by one or two; but when they are placed behind the regular petals, the number of ſtamens is not diminiſhed.

α. The common Wood Strawberry of Europe has the leaflets oval-lanceolate, acutely ſerrate; the petioles woolly; the runners ſlender, ſmooth, often tinged with purple: peduncles with two or more flowers. The fruit ſmall, and uſually red; with us it has commonly little flavour, becauſe the plants are too much ſhaded in woods and hedges; the *mountainous* Strawberries of warmer and drier countries, though they uſually grow among buſhes, yet enjoying more ſun, and a drier air and ſoil, are much higher flavoured and larger than ours. The ſubordinate varieties of this are] 1. The White Wood Strawberry, which ripens a little later in the ſeaſon, and is by many perſons preferred to it for its quick flavour, but as it ſeldom produces ſo large crops of fruit as the red ſort, it is not very generally cultivated.

[The Alpine Strawberry is a larger plant than that which grows in our woods, the ſtem higher, the leaves broader, the fruit larger, red and uſually much pointed, ſometimes white. It is well flavoured, and the plants being great bearers from June till the autumn froſts put a ſtop to them, the Alpine Strawberry is very valuable. The reaſon of its long continuance in fruit is, that the runners which it throws out during the ſummer ſhoot up into flower and fruit the ſame year, more freely than the others. Mr. Miller, who makes this a variety of the Scarlet Strawberry, ſays that the Dutch gardeners entitle it *Everlaſting Strawberry.*

The rough-fruited or prickly Strawberry is nothing but a mere accidental variety. The flower is greeniſh; the fruit harſh, rough and prickly, of a greeniſh colour with ſome ſhow of redneſs. John Tradeſcant the elder firſt took notice of it in a woman's garden at Plymouth: her daughter had gathered it in the country and ſet the roots there[a].—Merret afterwards obſerved it in Hyde Park and Hampſtead wood.]

β. The Hautboy Strawberry has been long cultivated in the Engliſh gardens, and is very different from the reſt in leaf, flower and fruit. There is an improved variety of it, commonly called the Globe Hautboy; the fruit of which is larger, and of a globular form. Where theſe are neglected, they degenerate to the common Hautboy; but where the ſoil is good, and the culture well managed, the plants will produce a great quantity of large well-flavoured fruit.

[The Hautboy is very apt to degenerate, and to produce only dry effete fruit. This, according to Monſ. Duhamel, is owing to there being two ſorts of plants, one bearing male, the other female or rather imperfect hermaphrodite flowers; for they have thick, ſhort filaments, with very ſmall effete anthers. The former of theſe, being reputed uſeleſs, are carefully deſtroyed, and hence not only the ſeeds become abortive, but the receptacle, which we commonly call the fruit, ſmall and juiceleſs. This may be remedied, either by planting a few of the male plants, or of the ſcarlet or pine Strawberry among the Hautboys. M. du Cheſne, who has writ a treatiſe in French on the ſubject of Strawberries, having ſowed the ſeeds of Hautboys, had about an equal number of male and female plants.—Retzius alſo informs us, that ſome of the plants produce male flowers, and are conſtantly barren, others hermaphrodite and always fertile.

[The Bohemia Strawberry of Parkinſon ſeems to be the Hautboy; but he mentions nothing of the high muſky flavour peculiar to it; and by Ray's account it ſhould ſeem to be what we now call the Alpine Strawberry; for he ſays it differs in nothing from the Wood Strawberry, but in being nearly double the ſize in all its parts, and that the fruit is not ſo pleaſant, but ſweeter. Parkinſon's relation however is very different: "that it is the goodlieſt "and greateſt, both for leaf next to the Virginian, "and for beauty far ſurpaſſing all, for ſome of the "berries have been meaſured to be near five inches "about."

I know not upon what authority Mr. Miller aſſerts that the Hautboy came originally from America.]

γ. The Chili Strawberry was brought to Europe by Monſ. Frezier, an engineer, who was ſent to America by the King of France; it was firſt planted in the Royal Garden at Paris, whence it was communicated to ſeveral curious perſons in Holland, and in the year 1727, Mr. Miller brought a parcel of the plants to England, which were communicated to him by Mr. George Clifford, of Amſterdam, who had large beds of this ſort growing in his curious gardens at Hartecamp. The leaves are hairy, oval, and of a much thicker ſubſtance than any ſort yet known, and ſtand upon very ſtrong hairy foot-ſtalks; the runners from the plants are very large, hairy, and extend to a great length, putting out plants at ſeveral diſtances. The peduncles are very ſtrong; the leaves of the calyx are long and hairy. The flowers are large, and are often deformed; and ſo is the fruit, which is very large, and when cultivated in very ſtrong land, the plants produce plenty of fruit, which is firm, and very well flavoured; but as it is a bad bearer in moſt places where it has been cultivated, it has generally been neglected.

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[a] Ger. emac.

[In the Chili Strawberry, ſays Monſ. Duhamel, the flowers which we have in Europe are imperfect hermaphrodites, the anthers being ſmall and without pollen; no ſeed therefore is produced unleſs the piſtils be impregnated by the pollen of ſome other, which has perfect flowers: and this has actually been done.

Frezier's account of the fruit is that it uſually attains the ſize of a walnut, but is ſometimes as large as an egg, that it is of a paler red than the European Strawberry, and not ſo quick in its flavour. The flowers conſiſt of more than five or ſix petals, theſe are not heart-ſhaped, but variouſly inflected and ſinuous, they are white but with a ſlight tinge of yellow at the claws; filaments ſhort and broadiſh, anthers from a broad baſe cuſped at the end, at firſt pale but afterwards brown; ſtyles yellowiſh, with a curled ſtigma when viewed through a glaſs granulous. The flowers have ſomething of the ſmell of the Hawthorn. The calyx, peduncles, flowering ſtems, and petioles are very hairy. The leaves on their upper ſurface are dark green and hairy, on their lower whitiſh and lanuginous; the ſerratures about the edge are broad and large.]

δ. The Scarlet Strawberry is the ſort which is firſt ripe, for which reaſon it merits eſteem, had it nothing elſe to recommend it; but the fruit is ſo good, as by many perſons of good taſte to be preferred to moſt others. This was brought from Virginia, where it grows naturally in the woods. It is very different from the Wood Strawberry in leaf, flower and fruit.

[The leaves are dark green and of a more even ſurface than the others; the flowering ſtems are ſhorter, and the fruit is frequently concealed among the leaves. Parkinſon obſerves, that ſcarce one fruit can be ſeen ripe among a number of plants, ſo that probably in his time the culture was not underſtood.

ε. The Pine Strawberry has lately been introduced into the Engliſh gardens. Some affirm that it was brought from Louiſiana, others from Virginia; but Mr. Miller received ſome plants of it from a curious gentleman of Amſterdam, who aſſured him they were brought from Surinam. The leaves have a great reſemblance to thoſe of the Scarlet Strawberry; but are larger, of a thicker ſubſtance, and the indentures of their edges are blunter: the runners are much larger and hairy: the peduncles are ſtronger, the flowers much larger, and the fruit approaches in ſize, ſhape and colour to the Chili Strawberry. As this produces a great quantity of fruit, when the plants are kept clear from runners, and the fruit is very large, it is worthy of cultivation[b].

The Pine Strawberry, according to Monſ. Duhamel is raiſed from the ſeed of the Chili Strawberry. The flower is very large, and the fruit has ſomething of the ſmell and taſte of the Pine-apple. It varies in the form; ſome being ovoid, others oblate ſpheroid, others again irregular; they are much ſmaller than the Chili Strawberry. They are ſmooth and ſhining; the ſhaded ſide yellowiſh white, with a tincture of red, and the ſeeds red; the ſide towards the ſun pale red compoſed of a mixture of red-brown and yellow; the ſeeds red-brown. The fleſh is leſs firm than that of the Chili Strawberry, but it is juicy and has a pleaſant perfumed taſte.

ζ. The Carolina Strawberry greatly reſembles the foregoing, but it is much leſs in all its parts; and leſs hairy; the flower-ſtems are ſhorter; the flower-buds more lengthened out, and leſs ſwoln; the diviſions of the calyx larger, and the little ones ſeldom divided; the petals rather ſmaller and ſeldom more than five in number; the fruit ſmaller, more regular in the form, of a higher colour, and the perfume not ſo pleaſant. The Pine varies little when raiſed from ſeed, whereas this varies much in the flower, fruits, *&c.*[c]

The Wood Strawberry has been cultivated time immemorial. With us, we can go back at leaſt to the time of Richard III. when the Biſhop of Ely cultivated this fruit in the garden of his palace in Holborn, as related in Stow's annals. The paſſage, having been minutely copied by Shakſpeare, is well known.

Thomas Hyll (1593) informs us, that the berries be much eaten at all men's tables in the ſummer, with wine and ſugar; and that they will grow in gardens unto the bigneſs of a mulberry[d].

The other varieties were long before they came into cultivation. Gerarde (1597) makes mention of none but the common Wood Strawberry, with its ſubordinate varieties, the white and the green, which he ſays are rare. To theſe Parkinſon (1629) adds the Virginia, which we now call the Scarlet Strawberry; and the Bohemia, of which he gives the following account—" it hath been with us but of late " days. Maſter Queſter the Poſtmaſter firſt brought " them over into our country; but I know no man " ſo induſtrious in the careful planting and bring- " ing them to perfection in that plentiful manner, " as Maſter Vincent Sion, on the Bank ſide, near " Paris garden ſtairs, who from ſeven roots, in one " year and a half, planted half an acre of ground " with the increaſe from them, beſides thoſe he " gave away to his friends."

After this, no addition ſeems to have been made to our ſtock, until 1727, when Mr. Miller imported the Chili Strawberry which Frezier had brought to Marſeilles about 1712. It flowered in the Eltham garden in the year 1730, but it had not then produced ripe fruit. In 1720, Bradley ſays we have only three ſorts of Strawberries, the Scarlet, the Hautboy or great White Strawberry, and the Wood Strawberry.—Mortimer has the Red Wood, White Wood, Long Red, Polonian, and Green Strawberry; he ſpeaks of the Scarlet as having been lately introduced from New England.

The berries, either eaten alone, or with ſugar, or with milk, are univerſally eſteemed a moſt delicious fruit: they are grateful, cooling, ſubacid, juicy, and have a delightful ſmell. Taken even in large quantities they ſeldom diſagree with the ſtomach. They promote perſpiration, impart a violet ſcent to the urine, and diſſolve the tartarous incruſtations upon the teeth. Perſons afflicted with the gout or ſtone have found great relief by uſing them profuſely. Linneus informs us, that by eating plentifully of them every day, he kept himſelf almoſt free from the gout. Hoffman affirms, that he has known conſumptive people cured by them. The bark of the root is aſtringent, like the Tormentil, and the reſt of its congeners[e].

Monſ. Ducheſne publiſhed a treatiſe on the Strawberry at Paris in 1766.

2. The ſcape or flowering-ſtem of this is longer than it uſually is in the common Wood Strawberry, the petals are ſmaller, and the calyxes are gaſhed[f]. This however is frequently the caſe with the common wild ſort in woods[g]: and the others are very inconſiderable differences, eſpecially in a genus ſo liable to variation as this. Other petty diſtinctions, ſuch as that the leaves are ſmaller in winter, and their ribs leſs branched; the runners more ſlender and productive, the fruit more oblong or pyramidal[h]; will not perſuade us to ſeparate this from the foregoing as a ſpecies. Even the remarkable difference of ſimplicity in the leaves, cannot make us regard it as any thing more than a ſingular variety: for plants raiſed from the runners will ſometimes have ternate leaves, and ſeedling plants will alſo ſometimes have them. It was originally raiſed at Verſailles by M. Ducheſne in the year 1761, from ſeeds of the Wood Strawberry[i].—It agrees with its parent in the time of flowering and fruiting; nor does the form, ſize or flavour of the fruit differ more from that than might be expected from culture.

3. The name of *ſterilis* or *barren* is not given to this ſpecies, becauſe it does not produce perfect ſeed,

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[b] Miller's figures.

[c] Duhamel.

[d] Profitable Arte of Gardening, p. 107.

[e] Wither. arr. Linn. ſucc. Lightf.

[f] Linn. ſyſt.

[g] Reich.

[h] Curtis.

[i] Ibid.

for it certainly does, but becauſe the receptacle is not fleſhy and eatable. To diſtinguiſh this from the eſculent Strawberry with all its varieties, it is ſufficient to obſerve, that though the branches be trailing, yet they never creep or throw out roots; that the leaves are ovate or obovate, bluntly ſerrate, ſilky, and ſilvery-white underneath, with very hairy petioles; that the flower-ſtems are ſmall, weak and hairy, ſuſtaining one or at moſt two flowers, ſmaller and with whiter petals than the foregoing. The whole plant is ſmaller, weaker and more hairy: the petioles and leaflets extremely hairy; the latter on the flowering plants very ſmall, about half an inch in length, on the young plants twice as long. Stem covered with brown ſcales. Peduncles from an inch to an inch and half long, terminated by one flower, and having a ſingle leaf in the middle of it, from the axil of which ſprings another flower. Peduncles and calyxes tinged with red. Corolla three-eights of an inch in diameter: petals roundiſh, frequently emarginate.

This ſpecies is very diſtinct from the other; and according to the obſervation of Curtis, Leers, *&c.* its fructification has a greater affinity with *Potentilla*, between which genus and *Fragaria* this ſpecies ſeems to be the link.—It flowers earlier than the other, namely in march, and is common in woods and hedges, and on ſome heaths; in Switzerland and in Germany as well as Britain. Alſo in Japan.]

PROPAGATION AND CULTURE.

Strawberries in general love a gentle hazelly loam, in which they will thrive and bear greater plenty of fruit than in a light rich ſoil. The ground ſhould alſo be moiſt, for if it is very dry, all the watering which is given to the plants in warm dry ſeaſons, will not be ſufficient to procure plenty of fruit; nor ſhould the ground be much dunged, for that will cauſe the plants to run into ſuckers, and grow luxuriant, and render them leſs fruitful.

The beſt time to remove theſe plants is in october, that they may get new roots before the hard froſt ſets in, which looſens the ground; ſo that if the roots of the plants are not pretty well eſtabliſhed in the ground, the plants are frequently turned out of the ground by the firſt thaw; therefore the ſooner they are planted when the autumnal rains begin, the leſs danger will there be of their miſcarrying; and ſometimes thoſe which are well rooted, will produce a few fruit the firſt year; there are ſome who tranſplant them in the ſpring; but where that is done, they muſt be duly ſupplied with water in the dry weather.

The ground in which theſe are planted ſhould be thoroughly cleaned from the roots of Couch, and all other bad weeds; for as the Strawberry plants are to remain three years before they are taken up, if any of the roots of thoſe bad weeds are left in the ground, they will have time to multiply ſo greatly as to fill the ground, and overbear the Strawberry plants. The ground ſhould alſo be well trenched and made level; then the uſual method is to lay it out into beds of four feet broad, with paths two feet or two feet and a half broad between each; theſe paths are neceſſary for the convenience of gathering the fruit, and for weeding and dreſſing the beds, and alſo for watering the plants; after the beds are marked out, there ſhould be four lines drawn in each, at a foot diſtance, which will leave ſix inches ſpace on each ſide, between the outſide rows and the paths; then the plants ſhould be planted at about a foot diſtance from each other in the rows, in a quincunx order, being careful to cloſe the ground to the roots of the plants when they are planted; and if there ſhould not happen rain ſoon after, the plants ſhould be well watered to ſettle the earth to their roots.

The diſtance here mentioned muſt be underſtood for the Wood Strawberries only, for as the other ſorts grow much larger, their diſtances muſt be proportioned to their ſeveral growths; therefore the Scarlets and Hautboys ſhould have but three rows of plants in each bed, which ſhould be at fifteen inches diſtance, and the plants in the rows ſhould be allowed the ſame ſpace from each other, and the Chili and other large Strawberries muſt have but two rows of plants in each bed, which ſhould alſo be two feet apart in the rows; for as theſe grow very ſtrong, if they have not room to ſpread, they will not be very fruitful.

In chuſing proper plants depends the whole ſucceſs; for if they are promiſcuouſly taken from beds without care, great part of the plants will become barren; theſe are generally called blind, which is when there are plenty of flowers, but no fruit produced; if theſe flowers are well examined, they will be found to want the female organs of generation, moſt of them abounding with ſtamina, but there are few, if any ſtyles; ſo that it frequently happens among theſe barren plants, that ſome of them have a part of an imperfect fruit formed, which will ſometimes ripen; this barrenneſs is not peculiar to Strawberries, but is general to all thoſe plants which have creeping roots, or ſtalks; and the more they increaſe from either, the ſooner they become barren, and this in ſome degree runs through the vegetable kingdom; for trees and ſhrubs which are propagated by cuttings, are generally barren of ſeeds in two generations, that is, when they are propagated by cuttings, which were taken from plants raiſed by cuttings; this I have conſtantly found to hold in great numbers of plants, and in fruit-trees it often happens, that thoſe ſorts which have been long propagated by grafts and buds, have no kernels. But to return to the choice of the Strawberry plants; theſe ſhould never be taken from old neglected beds, where the plants have been ſuffered to ſpread or run into a multitude of ſuckers, nor from any plants which are not very fruitful; and thoſe offsets which ſtand neareſt to the old plants, ſhould always be preferred to thoſe which are produced from the trailing ſtalks at a farther diſtance; and the Wood Strawberry is beſt when the plants are taken freſh from the woods, provided they are taken from fruitful plants, becauſe they are not ſo liable to ramble and ſpread, as thoſe which are taken from plants, which have been long cultivated in gardens.

When the plants have taken new root, the next care is if the winter proves ſevere, to lay ſome old tanners bark over the ſurface of the bed between the plants to keep out the froſt: this care is abſolutely neceſſary to the Chili Strawberry, which is frequently killed in hard winters, where it is expoſed without any covering; therefore where tanners bark cannot eaſily be procured, ſaw-duſt, or ſea-coal aſhes may be uſed; or in want of theſe, if decayed leaves of trees, or the branches of Evergreen-trees with their leaves upon them, are laid over the beds, to prevent the froſt from penetrating deep into the ground, it will ſecure the plants from injury.

The following ſummer the plants ſhould be conſtantly kept clean from weeds, and all the runners ſhould be pulled off as faſt as they are produced; if this is conſtantly practiſed, the plants will become very ſtrong by the following autumn; whereas when this is neglected (as is too frequently ſeen) and all the runners permitted to ſtand during the ſummer ſeaſon, and then pulled off in the autumn, the plants will not be half ſo ſtrong as thoſe where that care has been taken; and there will not be near the ſame quantity of fruit upon them the following ſpring, nor will the fruit be near ſo large and fair; but where proper care is taken of the plants the firſt ſummer, there is generally a plentiful crop of fruit the ſecond ſpring.

As this fruit is very common, there are but few perſons who cultivate it with proper care; therefore I ſhall give ſome directions for the doing it; which, if carefully practiſed, will be attended with ſucceſs.

The old plants of Strawberries are thoſe which produce the fruit, for the ſuckers ſeldom produce any till they have grown a full year; therefore it appears how neceſſary it is to diveſt the old plants of them; for wherever they are ſuffered to remain, they rob the fruitful plants of their nouriſhment in proportion to their number; for each of theſe ſuckers ſends out a quantity of roots, which interfere, and are ſo cloſely matted together, as to draw away the greateſt part of the nouriſhment from the old roots, whereby they are greatly weakened; theſe ſuckers alſo render each other very weak, and hence is the cauſe of barrenneſs; for I have known where the old plants have been conſtantly kept clear from ſuckers, they have continued very fruitful four or five years without being tranſplanted; however, it is the beſt way to have a ſucceſſion of beds, that after three years ſtanding they may be taken up; becauſe by that time they will have exhauſted the ground; and it is always obſerved, that Strawberries planted on freſh land are the moſt fruitful.

The next thing to be obſerved, is in autumn to diveſt the plants of ſtrings, or runners, and all the decayed leaves, and clear the beds from weeds; then the paths ſhould be dug up, and the weeds buried, and ſome earth laid over the ſurface of the beds between the plants; this will ſtrengthen the plants, and prepare them for the following ſpring; and if after this, there is ſome old tanners bark laid over the ſurface of the ground between the plants, it will be of great ſervice to them. In the ſpring, after the danger of hard froſt is over, the ground between the plants in the beds ſhould be forked with a narrow three-pronged fork, to looſen it, and break the clods; and in this operation, the tan which was laid over the ſurface of the ground in autumn will be buried, which will be a good dreſſing to the Strawberries, eſpecially in ſtrong land; then about the end of march, or the beginning of april, if the ſurface of the beds is covered with moſs, it will keep the ground moiſt, and prevent the drying winds from penetrating the ground, and thereby ſecure a good crop of fruit; and the moſs will preſerve the fruit clean, that when heavy rains fall after the fruit is full grown, there will be no dirt waſhed over them, which frequently happens, ſo that the fruit muſt be waſhed before it is fit for the table, which greatly diminiſhes its flavour.

The ſoil in which the Chili Strawberry is found to ſucceed beſt, is a very ſtrong brick earth, approaching near to clay; in this ſoil I have ſeen them produce a tolerable good crop, and the fruit has been extremely well flavoured; and if ſome care be taken to pull off the runners as they are produced, ſo as to leave only the old plants, I make no doubt but theſe plants may be as fruitful as the common Hautboy: this I mention from one or two experiments, which have been made by my direction, and not from theory.

There are ſome perſons who are ſo fond of Strawberries, as to be at any expenſe to obtain them early in the year, and ſhould I omit to give ſome directions for this, they would ſuppoſe the book very defective; therefore I ſhall mention the practice of ſome, who have ſucceeded beſt in the management of theſe fruits.

Where there are any hot walls erected in gardens for the producing early fruit, it is very common to ſee Strawberries planted in the borders, that the fire which is applied for ripening the fruit againſt the walls, may alſo ſerve the purpoſe of bringing forward the Strawberries; but where this is practiſed, the Strawberry plants ſhould be annually renewed, taking up the plants as ſoon as their fruit is over, and all the earth of the borders ſhould be taken out, at leaſt two feet deep, and freſh earth brought in, which will be equally good for the wall trees; but, as was before obſerved, that the old plants of Strawberries only are thoſe which produce the fruit, there ſhould be a ſufficient number of plants brought up in pots, to ſupply the border annually; and the ſame muſt be done if they are to be raiſed in a common hot-bed, or in ſtoves; therefore I ſhall begin with giving directions for raiſing and preparing plants for thoſe purpoſes.

The ſorts which are the moſt proper for forcing early, are the Scarlet, the Alpine, and the Wood Strawberries, for the Hautboy grows too large for this purpoſe. In the choice of the plants, there ſhould be an eſpecial care taken to have them from the moſt fruitful plants, and thoſe which grow immediately to the old plants; they ſhould be taken off in autumn, and each planted in a ſeparate ſmall pot filled with loamy ſoil, and placed in a ſhady ſituation till they have taken root; after which they may be removed to an open ſituation, where they may remain till the middle or end of november, when the pots ſhould be plunged into the ground up to their rims, to prevent the froſt from penetrating through the ſide of the pots; if theſe are placed near a wall, pale, or hedge, expoſed to an eaſt aſpect, or north-eaſt, they will ſucceed better than in a warm ſituation, becauſe they will not be forced too forward; the only care they require, is to ſecure them from being turned out of the pots after froſt. The ſpring following the plants will be ſo far advanced as to have filled the pots with their roots by the end of april, when they ſhould be turned out of the pots, and their roots pared; then planted into penny pots filled with the like loamy ſoil, and plunged into the ground in a ſhady ſituation, where they ſhould remain the following ſummer; during which time they muſt be duly kept clean from weeds, and all the runners muſt be taken off as faſt as they are produced; likewiſe if there ſhould be any flowers come out, they ſhould be pinched off, and not ſuffered to bear fruit, which would weaken the plants, for there cannot be too much care taken to have the plants as ſtrong as poſſible, that they may produce plenty of fruit, without which they are not worth the trouble of forcing.

About the middle of october, or earlier, if the autumn proves cold, the pots ſhould be removed into a warmer ſituation, to prepare them for forcing; for they ſhould not be ſuddenly removed from a very cold ſituation immediately into the ſtove or hot-bed, but be gradually prepared for it; but where they are deſigned for the borders near a hot wall, they may then be turned out of the pots, and planted into the borders, that they may have time to get freſh rooting, before the fires are made to heat the walls; when theſe are planted, they may be placed very cloſe to each other; for as they are deſigned to remain there no longer than till they have ripened their fruit, they will not require much room, as their roots will find ſufficient nouriſhment below, and alſo from the earth which is filled into the ſpaces between the balls of earth, about their roots; and it is of conſequence to get as much fruit as poſſible in a ſmall ſpace, where there is an expenſe to force them early. If the fires are lighted about Chriſtmas, the Strawberries in theſe borders will be ripe the end of march; or if the ſeaſon ſhould prove very cold, it may be the middle of april before they will be fit for the table.

In the management of the plants there muſt be care taken to ſupply them with water when they begin to ſhew their flowers, otherwiſe they will fall off without producing any fruit; and, in mild weather, there ſhould be freſh air admitted to them every day; but as fruit-trees againſt the wall muſt be ſo treated, the ſame management will agree with the Strawberries.

If the Strawberries are intended to be forced in a ſtove, where there are Pine-apples, and no room to plunge them in the tan-bed, then the plants ſhould be tranſplanted into larger pots in ſeptember, that they may be well rooted before they are removed into the ſtove, which ſhould not be till december; but if they are placed under a frame the beginning of november, where they may be ſcreened from the froſt, it will prepare the plants better for forcing; and thoſe who are deſirous to have them very early, make a hot-bed under frames, upon which they place their plants the latter end of october, which will bring them forward to flower, and then they remove the plants into the ſtove; when theſe plants are removed into the ſtove, they ſhould be placed as near to the glaſſes as poſſible, that they may enjoy the full ſun and air; for when they are placed backward, the plants will draw up weak, and the flowers will drop without producing fruit. As the earth in the pots will dry pretty faſt when they ſtand upon the pavement of the hot-houſe, or on ſhelves, the plants muſt be duly watered; but it muſt be done with diſcretion, and not too much given, which will be equally hurtful to them; if theſe plants are properly managed, they will produce ripe fruit in february, which is as early as moſt people will chuſe to eat them.

When the fruit is all gathered from the plants, they ſhould be turned out of the ſtove; nor ſhould thoſe plants which are in the borders near the hot walls be left there after their fruit is gathered, but immediately taken up, that they may rob the fruit-trees of their nouriſhment as little as poſſible.

Where there is no conveniency of ſtoves, or hot-walls for this purpoſe, the fruit may be ripened upon common hot-beds; and though they may not be quite ſo early as with the other advantages, yet I have ſeen great crops of the fruit ripe in april, which were upon common hot-beds under frames, and executed at a ſmall expenſe in the following manner.

The plants were prepared in pots after the manner before directed, and were placed in a warm ſituation the beginning of october; about Chriſtmas the hot-bed was made in the ſame manner as for Cucumbers, but not ſo ſtrong; and as ſoon as the firſt violent ſteam of the dung was over, ſome old rotten dung laid over the hot-bed to keep down the heat, or where it can be eaſily procured, neats dung is preferable for this purpoſe; then the plants ſhould be turned out of the pots, and placed upon the bed as cloſe together as poſſible, filling up the interſtices between the plants with earth, afterwards the plants muſt have air admitted to them every day; and if the heat of the bed is too great, the plants ſhould be raiſed up, to prevent their roots being ſcorched; and if the bed is too cold, the ſides of it ſhould be lined with ſome hot dung: this firſt bed will bring the plants to flower by the end of february, or the beginning of march, by which time the heat of the bed will be ſpent, therefore another hot-bed ſhould be prepared to receive the plants, which need not be ſo ſtrong as the firſt; but upon the hot dung ſhould be laid ſome neats dung about two inches thick, which ſhould be equally ſpread and ſmoothed; this will prevent the heat of the bed from injuring the roots of the plants, upon this ſhould be laid two inches of a loamy ſoil; when this has laid two days to warm, the plants ſhould be taken out of the firſt hot-bed, and turned carefully out of the pots, preſerving all the earth to their roots, and placed cloſe together upon this new hot-bed, filling up the vacuities between the balls with loamy earth: the roots of the plants will ſoon ſtrike out into this freſh earth, which will ſtrengthen their flowers, and cauſe their fruit to ſet in plenty; and if proper care is taken to admit freſh air to the plants, and ſupply them properly with water, they will have plenty of ripe fruit in april, which will be full two months before their natural ſeaſon.

The Alpine Strawberry will ſupply the table the whole ſummer, eſpecially if care be taken in dry ſeaſons to water the plants, without which the bloſſoms are apt to fall off, without producing fruit.

[Thus may a ſucceſſion of this delicious and salubrious fruit be obtained from march or april, and even earlier, by means of a hot-houſe, forcing-frame, hot-walls or hot-beds, and in the open air from june to october and november, ſhould the weather prove mild; for not only the Alpine but the White Wood Strawberry will continue bearing in tolerable abundance until the autumn froſts come on with ſome degree of ſeverity, eſpecially if the ſituation be warm, and the ſoil in which they grow not too light.]

There are ſome perſons ſo curious as to raiſe the plants from ſeeds, by which they have greatly improved ſome of the ſorts; and if this was more practiſed, I am certain it would be found of ſingular ſervice, where the faireſt of the fruit of each kind are choſen. The ſeeds ſhould be immediately ſown when the fruit is eaten; the beſt way is to ſow the ſeed in pots, placing them in the ſhade.

In the ſpring of the year 1724, there was ſcarcely any rain from february till about the middle of july, ſo that moſt of the Strawberries were burnt up; but a copious rain falling in july, they recovered and put out abundance of flowers, which were ſucceeded by fruit that ripened in ſeptember, when the London markets were ſupplied with a great plenty.

[FRAGARIA. See *Comarum*, *Potentilla*, *Sibbaldia*, *Tormentilla*.

FRAGARIÆ AFFINIS. See *Sibbaldia*.

FRAGARIUS. See *Melaſtoma*.

FRANCA. See *Frankenia*.

FRANGULA. See *Caſſine*, and *Rhamnus*.

FRANKENIA. (*So named in honour of John Frankenius, Profeſſor of Botany at Upſala, who firſt enumerated the plants of Sweden in Speculum Botanicum* 1638 *and Speculum Botanicum renovatum.* 1659 *qu.*)
Lin. gen. n. 445. *Reich. n.* 481. *Schreb. n.* 604. *Juſſ.* 303. Franca. *Mich.* 22.
Claſſ. 6. 1. Hexandria Monogynia.
Nat. order of *Calycanthemæ—Caryophylleæ*, Juſſ. *Perſonatæ*, With.?

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, ſubcylindric, ten-cornered, permanent: *mouth* five-toothed, ſharp, patulous.
COR. *Petals* five; claws the length of the calyx; *border* flat, with roundiſh, ſpreading *laminas*.
Nectary with a channelled, acuminate claw, inſerted into each claw of the petals.
STAM. *Filaments* ſix, length of the calyx. *Anthers* roundiſh, twin.
PIST. *Germ* oblong, ſuperior. *Style* ſimple, length of the ſtamens. *Stigmas* three, oblong, erect, obtuſe.
PER. *Capſule* oval, one-celled, three-valved.
SEEDS very many, ovate, very ſmall.
OBS. *Stamens five to ten. Fruit three-celled.* Adans.
Qu. *whether the ſtyle be really ſimple?* Juſſ.

ESSENTIAL CHARACTER.

Cal. five-cleft, funnel-form. *Petals* five. *Stigma* ſix-parted. *Capſ.* one-celled, three-valved.

SPECIES.

1. Frankenia lævis. *Smooth Frankenia* or *Sea Heath.*
Lin. ſpec. 473. *Reich.* 2. 111. *Hudſ. angl.* 137. *With.* 367. *Relh. n.* 259. *Engl. bot. t.* 205.
Franca maritima, ſupina, ſaxatilis, &c. *Mich. gen.* 23. *t.* 22. *f.* 1.
Lychnis ſupina maritima, ericæ facie. *Raii ſyn.* 338.
Erica ſupina marit. anglica. *Park. theat.* 1484. *Petiv. brit. t.* 10. *f.* 11. *Raii hiſt.* 1716.
Polygonum marit. minus, fol. ſerpylli. *Bauh. pin.* 281.—puſillo vermiculato ſerpilli folio. *Lob. ic.* 422. *Ger. emac.* 567. 566. 3.—fruticoſum ſupinum ericoides cinereum, thymi fol. hiſpanicum. *Barrel. ic.* 714. *Bocc. muſ.* 1. *t.* 7. *f.* 11.
Cali f. Vermiculari marinæ non diſſimilis planta. *Bauh. hiſt.* 3. 703. 2.
Leaves linear crowded ciliate at the baſe.

2. Frankenia hirſuta.
Lin. ſpec. 473. *ſyſt.* 344. *Reich.* 111. *Gouan. illuſtr.* 26.
Franca marit. ſup. multiflora, &c. *Mich. gen. t.* 22. *f.* 2.
Nothria hirſuta. *Berg. cap.* 171. *t.* 1. *f.* 2.
Polygonum creticum, thymi folio. *Bauh. pin.* 281. *prodr.* 131.
Stems hirſute, flowers in terminating bundles.

3. Frankenia pulverulenta. *Duſty Frankenia* or *Sea-Heath.*
Lin. ſpec. 474. *Reich.* 112. *Hudſ. angl.* 138. *With.* 368. *Allion. pedem. n.* 1609. *D'Aſſo aragon. n.* 323.
Franca marit. quadrifolia, &c. *Mich. gen.* 23. *n.* 5.

Anthyllis valentina. *Cluſ. hiſt.* 2. 186. *Ger. emac.* 566. 2.—maritima Chamæſyce ſimilis. *Bauh. pin.* 282.

Anthyllidis ſpecies quibuſdam. *Bauh. hiſt.* 3. 373. *f.* 374. 1. *Raii hiſt.* 215.

Alſine maritima ſupina, fol. Chamæſices. *Tourn. inſt.* 665. *Raii ſyn.* 352.

Leaves obovate, retuſe, mealy underneath.

DESCRIPTIONS, *&c.*

1. Root perennial. Stem and leaves thinly ſprinkled with white globular particles. Stems numerous, round, branched, trailing. Leaves in little cluſters, ſmall, fleſhy, rolled back ſo as to appear almoſt cylindrical, with a groove underneath, flatted at the baſe, where they are dilated into a pair of minute, membranaceous ciliate ſtipules. Flowers at the ramifications of the ſtem, and in the middle of a bundle of leaves, ſolitary, ſeſſile: calyx with five, ſix or ſeven ribs, and as many teeth, but rarely more than five: corolla purple, petals wedge-ſhaped, a little ſcolloped at the end. Nectary a yellow ſcale. Filaments flat on one ſide, convex on the other. Style deeply trifid. The flowers are elegant in form and colour, like thoſe of a little red Pink or Campion. The ſtamens and piſtil much reſemble the *Lychnis*, to which this plant is nearly allied, though ſo different in habit[a].

In ſalt marſhes, near Leghorn. In England, Mr. Goodyer found it ſept. 3, 1621, at Burſeldon ferry, Hampſhire: on the coaſts of Eſſex, Suſſex and Kent, abundantly: as in the iſlands of Shepey and Thanet, Lovingland, juſt over the water at Yarmouth, about Thurrington in Eſſex, between Maldon and Goldhanger; in Selſey iſland, Suſſex; near Portſmouth; Tid Goat near Wiſbech; near Lynn in Norfolk.—It flowers in july and auguſt.

2. Stems procumbent, preſſed as it were cloſe to the ground, panicled and dichotomous. Leaves like thoſe of Thyme, ciliate eſpecially at the baſe[b]. Flowers violet-coloured. Native of the South of France, Apulia, Crete, Siberia, and the Cape of Good Hope.

3. Stems lying flat, ſlender, branching, with the knots about a finger's breadth from each other. Leaves four at a joint, with very ſhort hairs underneath, the edges not rolled in; petioles ſhort. Flowers in the axils of the leaves, ſeſſile: calyx tough, rigid, with five angles; teeth upright. Annual[c].

Native of the South of France, Italy and Spain. Found on the coaſt of Suſſex, by Mr. Brewer: between Bognor and Brighthelmſtone, by Mr. Hudſon. It flowers in july.

Gerarde and Ray name it *Valentia Knot-graſs.*

Theſe plants were named *Franca* by Micheli, from Giov. Sebaſt. Franchi, of Lucca, phyſician at Florence to the Grand Duke Coſmo III. Linneus changed the name to Frankenia, in order to perpetuate the name of a perſon, not of much greater celebrity.

FRANKLINIA. See *Gordonia.*]

FRAXINELLA. See *Dictamnus.*

FRAXINUS (*of Pliny, from φραξις, a hedge; or from frago, becauſe it grows in locis fragoſis—both unſatisfactory.*—Ornus *from ορεινος, mountainous.*)

Engl. *Aſh-tree.* Fr. *Freſne.*

Lin. gen. n. 1160. *Reich. n.* 1273. *Schreb. n.* 1597. *Tournef.* 343. *Mich.* 107. *Juſſ.* 105. *Gærtn. t.* 49. Ornus. *Mich.* 103.

Claſſ. 23. 2. Polygamia Dioëcia, or Trioecia. Diandria. *Thunb.* &c.

Nat. order of *Sepiariæ.*—*Jaſmineæ.* Juſſ.

GENERIC CHARACTER.

* *Hermaphrodite.*

CAL. none; or a *Perianth* one-leafed, four-parted, upright, ſharp, ſmall.

COR. none; or *Petals* four linear, long, ſharp, upright.

STAM. *Filaments* two, upright, much ſhorter than the corolla. *Anthers* upright, oblong, four-furrowed.

PIST. *Germ* ovate, compreſſed. *Style* cylindric, upright. *Stigma* thickiſh, bifid.

PER. none, except the cruſt of the ſeed. (Capſule two-celled, leafy, and flatted at top. *G.*)

SEED lanceolate, flatted and membranaceous, one-celled.

* *Female*

The ſame, except that it has no ſtamens.

OBS. F. Ornus *has a calyx and corolla, and is always hermaphrodite.*

F. excelſior *has neither calyx nor corolla. The female has frequently hermaphrodite flowers; and the hermaphrodite has females interſperſed.*

ESSENTIAL CHARACTER.

HERMAPHR. *Cal.* none or four-parted. *Cor.* none or four-petalled. *Stam.* two. *Piſt.* one. *Seed* (or *Capſ.*) one, lanceolate.

FEM. *Piſt.* one, lanceolate.

SPECIES.

1. Fraxinus excelſior. *Common Aſh-tree.*

Lin. ſpec. 1509. *Reich.* 4. 356. *mat. med.* 222. *hort. cliff.* 469. *fl. ſuec. n.* 926. *Hudſ. angl.* 446. *With.* 1149. *Lightf. ſcot.* 641. *Relh. cant. n.* 746. *Hall. helv. n.* 528. *Pollich pal. n.* 947. *Villars dauph.* 3. 799. *Allion. pedem. n.* 1631. *Gærtn. fruct.* 222. *Blackw. t.* 328. *Evel. ſylva. ed. Hunt.* 145. *Bauh. pin.* 416.

Fraxinus. *Dod. pempt.* 771. *Camer. epit.* 64. *Dod. pempt.* 833. *Ger.* 1289. *emac.* 1472. *Lob. ic.* 2. 107. 2. *Hanb.* 1. 9.—vulgatior. *Bauh. hiſt.* 1. 174. *Raii hiſt.* 1702.—vulgaris. *Park. theat.* 1419. 1.

F. Ornus. *Scop. carn. n.* 1249.

β. F. diverſifolia. *Various-leaved Aſh.*

Ait. hort. kew. 3. 445. γ.

With leaves, entire, three-lobed and ternate.

Leaflets lanceolate, ſerrate, ſeſſile; flowers without petals.

2. Fraxinus rotundifolia. *Manna Aſh-tree.*

Ait. hort. kew. 3. 445. *Pluk. alm. t.* 182. *f.* 4.

F. rotund. folio. *Bauh. pin.* 416. *Bauh. hiſt.* 1. 177. *f.* 2. *Raii hiſt.* 1703.

Leaflets roundiſh, acutiſh, doubly ſerrate, ſubſeſſile, flowers with petals.

3. Fraxinus Ornus. *Flowering Aſh-tree.*

Lin. ſpec. 1510. *Reich.* 4. 356. *mat. med.* 222. *hort. upſ.* 304. *cliff.* 470. *Mill. illuſtr.* *Woodv. med. bot.* 104. *t.* 36.

F. Ornus & paniculata. *Mill. dict. n.* 3, 4.

F. florifera. *Scop. carn. n.* 1250.—botryoides. *Mor. prælud.* 265. *Hort. angl.* 33. *t.* 9. *Duham. arb.* 4. *Raii hiſt.* 1704.

F. tenuiori & minori folio. *Bauh. hiſt.* 1. 177. *f.* 1.

F. humilior ſ. altera Theophraſti, min. & ten. fol. *Bauh. pin.* 416.

Leaflets ovate-oblong, ſerrate, petioled, flowers with petals.

4. Fraxinus americana. *American Aſh-tree.*

Lin. ſpec. 1510. *Reich.* 4. 357. *Gron. virg.* 122. *Cateſb. car.* 1. *t.* 80.

F. Novæ Angliæ & Caroliniana. *Mill. dict. n.* 5, 6.

F. canadenſis. *Gærtn. fruct.* 222.

Leaflets quite entire, petioles cylindric.

DESCRIPTIONS, *&c.*

[Trees. Leaves oppoſite, unequally pinnate, ſeldom ſimple. Flowers in panicles at the ends of the branches. *F. Ornus* with four-petalled hermaphrodite flowers. *F. excelſior*, or common Aſh, with apetalous polygamous flowers, the hermaphrodites on one tree, and the females on another[a].]

1. The leaves have generally five pairs of leaflets, (four to ſix) and one odd one, of a dark green. The flowers are produced in looſe ſpikes from the ſide of the branches, and are ſucceeded by flat ſeeds which ripen in autumn.

[The lateral buds produce the flowers, and the terminating one the leaves[b].

Bractes linear, one on the outſide at the baſe of each pedicel. Filaments broad and flat, not ſo long as the anthers, which are of a blackiſh purple colour [c]. There are not only hermaphrodite and female flowers, but alſo male ones, ſo that this ſpecies ſhould ſeem referable to the order trioecia [d]. Care ſhould be taken in obſerving the flowers; for in thoſe which are hermaphrodite, the germ which lies between the two ſtamens, does not grow up till ſome days after they appear, ſo that at firſt they appear to be male flowers. What Linneus calls a ſeed, others call a capſule; the ſeed being covered with a leathery kind of cruſt, which does not ſplit or open.

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[a] Withering, Relhan. Engl. Bot.

[b] Gowan.

[c] Stokes in Withering.

[a] Juſſieu.

[b] Linn. ſpec.

Varieties.

The varieties of the common Aſh-tree are, 1. That with ſimple leaves, which, however, ſometimes has them lobed and even ternate. 2. With pendulous branches, called the *Weeping Aſh*. I have for near forty years known a very fine tree growing naturally ſo, at Gamlingay in Cambridgeſhire; and it is not uncommon in trees of conſiderable age, eſpecially when growing by the water ſide, to ſee the branches hang down. This variety is now become common in the nurſeries, but they are engrafted, and carry too much the appearance of art. Imitations ſeldom are ſucceſsful, and none of the weeping trees will ever vie with the Babylonian Willow.

3. With variegated leaves, both yellow and white; or gold-ſtriped and ſilver-ſtriped, as the nurſerymen call them.

Micheli has ſome other varieties, from the different ſhape of the fruit, the ſize and form of the leaves, &c. *Nov. gen.* 223.

Name, Uſe, &c.

The Aſh in German and Dutch is *Eſche* or *Aſche*; in Daniſh and Swediſh *Aſk*; in French *le Frêne*; in Italian *Fraſſino*; in Spaniſh *Freſno*; in Portugueze *Freixo*; in Ruſſian *Jas, Jaſen, Jaſſen*, which name prevails in the dialects of the Sclavonian.

The Engliſh is from the Saxon *Æſc*. Ray ſays it has its name from the colour of the bark.

We muſt be careful not to confound, as ſome have done, this tree with the Mountain Aſh, which is totally different from it. This has the epithet *excelſior* from the loftineſs of the trunk—that of *mountain*, from the loftineſs of the ſituation which it delights in.

Its uſual form of flowering is in march and april, ſometimes ſo late as may: of leafing from april 22 to may 15. Both are ſometimes much injured by ſpring froſts.

The timber of the Aſh is next in value to the oak, and in ſome places equal to it.] It is hard and tough, and of excellent uſe to the coach-maker, wheel-wright and cart-wright, for ploughs, axle-trees, fellies, harrows, and many other implements of huſbandry; for ladders, oars, blocks for pullies, &c. &c. It makes a very ſweet fuel, with little ſmoke, but is apt to crack and fly in burning.—[Anciently it was in great requeſt for ſpears.

For drying herrings no wood is like it, and the bark is good for the tanning of nets: being not apt to ſplit and ſcale, it is excellent for tenons and mortiſes; alſo for the cooper, turner and thatcher: nothing is like it for palliſade hedges, hop-yards, poles and ſpars; handles and ſtocks for tools, ſpade-trees, &c. When curiouſly veined, the cabinet-makers uſe it, and call it Green Ebony [e].

By a remark in Harriſon's deſcription of England, prefixed to Holingſhed, chap. 19. edit. 1586. it is plain, that the Aſh was then eſteemed the propereſt tree for hop-poles.—" Poles are accounted " to be their greateſt charge (of hops). But ſith " men have learned of late to ſow aſhen keies in " aſh yards by themſelves, that inconvenience in " ſhort time will be redreſſed [f]."

Aſh-pollards are of great ſervice where fuel is ſcarce; a few of them will produce many loads of lop. The loppings make the ſweeteſt of all fires, and will burn well either green or dry; only if the branches are ſuffered to grow too large, the lopping will proportionably injure the tree [g].]

If a wood of theſe trees be rightly managed, it will turn greatly to the advantage of its owner; for by the underwood, which will be fit to cut every ſeven or eight years for hoops, or every fourteen years for hop-poles, &c., there will be a continual income more than ſufficient to pay the rent of the ground, and all other charges, and ſtill there will be a ſtock preſerved for timber, which in a few years will be worth forty or fifty ſhillings the tree.

The beſt ſeaſon for felling the aſh is from november to february; for if it be done either too early in autumn, or too late in the ſpring, the timber will be ſubject to be infeſted with worms, and other inſects; but for lopping pollards, the ſpring is preferable for all ſoft woods. [Mr. Boutcher recommends february.

The aſhes of the wood afford very good pot-aſh. The bark is uſed for tanning calf-ſkin: a ſlight infuſion of it appears of a pale yellowiſh colour when viewed againſt the light, but when looked down upon or placed between the eye and an opake object, it is blue. This blueneſs is deſtroyed by the addition of an acid, and alkalies recover it again. It will give a good, though not beautiful green to cloths which have been blued [h].

In the north of Lancaſhire they lop the Aſh to feed the cattle in autumn, when the graſs is upon the decline; the cattle peeling off the bark [i].—In Queen Eliſabeth's time the inhabitants of Colton and Hawkſhead fells remonſtrated againſt the number of forges in the country, becauſe they conſumed all the loppings and croppings, which were the ſole winter food for their cattle [k]. In foreſts, the keepers browze the deer on ſummer evenings with the ſpray of aſh, that they may not ſtray too far from their walk [l]. The leaves have been gathered to mix with tea; and poor people in ſome places have made a conſiderable advantage by collecting them for this purpoſe [m].—An infuſion of them, from half an ounce to an ounce and an half, is a very good purge; and a decoction of two drams of the bark, or ſix drams of the leaves, has been uſed to cure agues [n].]

If any cows eat of the leaves or ſhoots, the butter which is made of their milk will be rank; which is always the caſe with the butter which is made about Guildford and Godalmin, and in ſome other parts of Surry, where there are Aſh-trees growing about all their paſtures: and in good dairy countries they never ſuffer an Aſh-tree to grow.

[The truth of this fact is doubted by others; for it is certain that there is no taſte in aſh leaves to countenance the aſſertion, and that this is the next tree after the elm which the Romans recommended for fodder [o]. I have alſo paſſed much time in a country where the aſh was almoſt the only tree in the hedge-rows; and yet I never obſerved this rankneſs in the butter.

Cream is apt to turn bitter at the fall of the leaf, and the reaſon is generally thought to be, that the cattle then pick up the decayed leaves, particularly of the Aſh: but the caſe is the ſame in the great low paſtures which are open and without trees, as in upland incloſures, which abound in them. The only way to avoid the ill taſte in butter at that ſeaſon, is to churn oftener, and to ſpend the butter whilſt it is new.

The aſh is, however, a very improper tree for hedge-rows and the borders of arable land: the drip of it is very unfavourable to all other vegetable productions; it exhauſts the ſoil very much; and the roots ſpread widely near the ſurface: ſo that it injures the hedges, and impoveriſhes the crops that are ſown near them.

Nor, though it be a handſome tree, ought it by any means to be planted for protection or ornament, becauſe the leaves come out late, and fall early. The fertile trees alſo generally exhauſt themſelves ſo much in bearing keys or fruit, that their foliage is ſcanty, and their appearance unſightly. The trees, however, which bear female flowers only, have a full and verdant foliage, and make a handſome figure, though late in the ſeaſon[p]. It is well calculated for ſtandards and clumps in large parks and plantations, and for groves and woods[q]. "Fraxinus in ſylvis pulcherrima."—It will grow in very barren ſoil, and in the bleakeſt and moſt expoſed ſituations[r]. It is ſo hardy as to endure the ſea winds well, and may therefore be planted on the coaſt, where few trees will proſper[s].—If planted by ditch ſides, or in low boggy meadows, the roots act as underdrains, and render the ground about them firm and hard; the timber, however, is in this caſe but of little value[t]. It was natural that our remote anceſtors, when the iſland was over-run with wood, ſhould value trees rather for their fruit than their timber: it is no wonder, then, that by the laws of Howel Dda, the price of an oak or a beech ſhould be 120 pence, while the aſh, becauſe it furniſhed no food for ſwine, was valued only at four-pence.

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[c] Withering.

[d] Stokes in With.

[e] Evelyn.

[f] Gentlem. magaz. for 1785. p. 599.

[g] Hunter's Evelyn.

[h] Withering and Stokes.

[i] Stokes in Withering.

[k] Pennant's tour 1772. p. 29.

[l] Gilpin's for. ſcen. 2. 280.

[m] Gentl. mag. as above.

[n] Withering.

[o] Gentl. mag. as above.

The Edda of Woden, however, holds the Aſh in the higheſt veneration; and man is deſcribed as being formed from it. Heſiod in like manner deduces his brazen race of men from the Aſh; and in his Theogony has Nymphs of the name Μελιαι.

It is probably owing to the remains of Gothic veneration for this tree, that the country people, in the ſouth-eaſt part of the kingdom, ſplit young aſhes, and paſs their diſtempered children through the chaſm in hopes of a cure. They have alſo a ſuperſtitious cuſtom of boring a hole in an aſh, and faſtening in a ſhrew-mouſe: a few ſtrokes with a branch of this tree is then accounted a ſovereign remedy againſt cramps and lameneſs in cattle, which are ignorantly ſuppoſed to proceed from this harmleſs animal[u]. In many parts of the highlands of Scotland, at the birth of a child, the nurſe or midwife puts one end of a green ſtick of this tree into the fire, and while it is burning, receives into a ſpoon the ſap or juice which oozes out at the other end, and adminiſters this as the firſt ſpoonful of liquor to the new-born babe[x].

It is not common to ſee the Aſh of a very great ſize: inſtances, however, of large trees are not wanting.—Dr. Plot mentions one of eight feet diameter, valued at thirty pounds.—Mr. Marſham informs us of another in Benel church-yard. near Dunbarton in Scotland, meaſuring in 1768, ſixteen feet nine inches in girt, at five feet from the ground.—Mr. Evelyn ſays that divers were lately ſold in Eſſex, in length one-hundred and thirty-two feet.—Mr. Arthur Young, in his Iriſh tour, mentions ſome of ſeventy and eighty feet in height, which were only of thirty-five years growth. The trunk of one on the bank of the Avonmore was above fourteen feet round, and carried nearly the ſame dimenſions for eighteen feet. An Aſh at Dunganſtown is twelve feet round, and quite clear of branches for thirty feet, where it meaſures ten feet round, and the arms extend in beautiful forms twenty-eight yards. At Tiny-Park is another, the circumference of which in the ſmalleſt part ſomewhat exceeds nineteen feet, or ſix feet four inches diameter. At Luttrelſtown, the ſeat of the Earl of Carhampton, are ſeveral Aſh-trees from eleven to thirteen feet ſix inches round; one here was ſold for 13*l.* At Leixlip caſtle is a row of eighteen Aſh-trees, on a very bleak expoſure, meaſuring from nine to twelve feet round, with fair ſtems of conſiderable height, and fine branching heads. At Donircy near Clare caſtle in the county of Galway is an old Aſh that at four feet from the ground meaſures forty-two feet in circumference, at ſix feet high thirty-three feet; the trunk has long been quite hollow, a little ſchool having been kept in it; there are few branches remaining, but theſe are freſh, and very vigorous. Near Kennity church in the King's county is an Aſh whoſe trunk is twenty-one feet ten inches round, and it is ſeventeen feet high before the branches break out; theſe are of enormous bulk. When a funeral of the lower claſs paſſes by, they lay the corpſe down for a few minutes, ſay a prayer, and then throw a ſtone to increaſe the heap, which has been accumulating round the root.—Finally, in the church-yard of Lochabar in Scotland, Dr. Walker meaſured the trunk of a dead Aſh, which at five feet from the ſurface of the ground, was fifty-eight feet in circumference.

It is pleaſant to obſerve that amidſt the deplorable deſtruction of valuable timber, the planting of this ſo extenſively uſeful tree has lately not been neglected; as will appear from the following account.

20 acres, by Wm. Wollaſton, Eſq. at Great Finborough, Suffolk.
35 acres, by Thos. White, Eſq. at Butsfield, Lancheſter, Durham.
16 acres; and 150, 800 on 32 a. 1 rood. } by Mr. David Day, Frindſbury, Kent.
63,000, on 7 a. 9 perches. } by Edward Loveden Loveden, Eſq. Buſcot, near Farringdon, Berks.
6000, by John Sneyd, Eſq. Belmont, Staffordſhire, between 1784 and 1786.
20,000 on 11 acres. } by Dr. Rd. Watſon, Biſhop of Llandaff, near Ambleſide in Weſtmoreland. 1788.
42,000, by George Roſs, Eſq. Cromarty.
57,500, by the Earl of Fife, in the county of Murray[y].

The facility with which the Aſh is propagated, and adapts itſelf to any ſoil or ſituation, even the worſt; the quickneſs of its growth, and the general demand for the timber in every part of the country, for a variety of rural and oeconomical purpoſes, recommend this tree very much to the planter. As a farther encouragement, Mr. Boutcher has given an inſtance of the great profit of an Aſh plantation, in a ſmall experiment, which he thus relates.

On half a rood of heavy meadow, chiefly barren red clay and moſs, he planted Aſh-trees ſix years old, and eight feet high, in rows four feet aſunder, and two feet diſtance in the row; after four years he cut them down within five or ſix inches of the ground. Having more than he wanted, in ſeven years he ſold half for pollards and hoops for 40*s.* In ſix years he cut them again, and ſold them for 50*s.* In ſix years after this he cut them again, and ſold them at the ſame price. There remained now twenty trees, intended to ſtand for timber, but he was obliged to ſell them at twenty-three years growth for 7*s.* a tree. Thus would an acre of indifferent ground properly ſituated for ſale yield in twenty-three years 115 *l.* 10*s.* without any other expenſe than digging the ground for the firſt five or ſix years, and cutting the coppice. Care ſhould be taken to cut them ſlanting, with a ſharp inſtrument, leaving all the wounds ſmooth and clean. Obſerve that no price is mentioned for the firſt cutting, which he uſed himſelf; and that he found he ſhould have had at leaſt one third more for the price of the laſt cutting. He alſo found that he had planted too thick, and that he ſhould have had more wood, if the rows had been ſix feet aſunder, and the ſets three feet diſtant in the row.]

2. The ſhoots of the Manna Aſh are much ſhorter, and the joints cloſer together than thoſe of the common Aſh: the leaflets are ſhorter, with deeper ſerratures on their edges, and of a lighter green: the flowers come out from the ſide of the branches, are of a purple colour, and appear in the ſpring before the leaves come out. This tree is of humble growth, ſeldom riſing to more than fifteen or ſixteen feet in height in England.

[It was cultivated here in 1697, by the Dutcheſs of Beaufort[z].

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[p] Gentl. mag. for 1785.
[q] Hunter's Evelyn.
[r] Boutcher.
[s] Lightfoot.
[t] Woodw. in With.
[u] Gentl. mag. as above.
[x] Lightf. fl. ſcot.
[y] Tranſact. ſoc. arts, &c.
[z] Hort. kew.

The lower parts of the mountains in Calabria abound with the Manna Aſh, which grows ſpontaneouſly, and without any culture; except that the woodmen cut down all the ſtrong ſtems that grow above the thickneſs of a man's leg. Towards the end of july, the gatherers of manna make an horizontal gaſh, inclining upwards, in the bole of the tree. As the liquor never oozes out the firſt day, another cut is given on the ſecond, and then the woodman fixes the ſtalk of a maple leaf in the upper wound, and the end of the leaf in the lower one, ſo as to form a cup to receive the gum as it diſtills from each ſlaſh. The ſeaſon continues about a month. The men have only three carlines (1*s.* 1 ½*d.*) for every rotolo; which quantity, containing thirty-three ounces and a third, is ſold for twenty-four carlini and three quarters, or ſomewhat more than ten ſhillings; if it be in tubular pieces, the price riſes one third[a]. Theſe pieces are called *Manna in cannoli*, and theſe regular tubes are produced, by applying to the inciſion thin ſtraw, or ſmall bits of ſhrubs, upon which the manna runs as it oozes out[b].

The trees ſucceed beſt in an eaſtern expoſure, in order to warm the juices in the morning, and to inſpiſſate thoſe which the heat has ſweated out in the evening[c].

3. The petioles of this are equal; the leaflets lanceolate and equal. In the common Aſh the petioles are margined; the leaflets ovate, and the odd one larger than the reſt.—Scopoli obſerved hermaphrodite flowers on one tree, and female on another.

Mr. Miller makes two ſpecies out of one; his *F. paniculata* has only or chiefly male flowers. He thus deſcribes them.]—*F. Ornus* is a low tree, about the ſame height as the preceding; the leaves are much ſmaller and narrower than thoſe of our Common Aſh, but are ſerrate, and of the ſame dark colour. The flowers have petals. *F. paniculata* was raiſed (before 1730) by Dr. Uvedale at Enfield, from ſeeds which were brought from Italy by Dr. William Sherard.—The leaves have but three or four pairs of leaflets, which are ſhort, broad, ſmooth, of a lucid green, and irregularly ſerrate; the midrib is jointed, and ſwells where the leaflets come out. The flowers grow in looſe panicles at the ends of the branches, are of a white herbaceous colour, moſtly males, and appear in may.

4. [The fruits or keys are the ſame as in the common Aſh, but much ſmaller, and narrow[d].

Mr. Miller has two ſorts of this, which he thus deſcribes.]—*F. Novæ Angliæ* was raiſed from ſeeds ſent from New England in the year 1724 by Mr. Moore. The leaves have but three, or at moſt four pairs of leaflets, which are placed far diſtant from each other, and the odd leaflet runs out into a very long point, they are of a light green, and have no ferratures on their edges. This tree ſhoots into ſtrong irregular branches, but does not grow to a large ſize in the trunk. *F. caroliniana* was raiſed from ſeeds ſent from Carolina in the year 1724 by Mr. Cateſby. The leaves have ſeldom more than three pairs of leaflets, the lower being the leaſt, and the upper the largeſt; theſe are about five inches long and two broad, of a light green colour, and ſlightly ſerrate; the midrib is taper, and has ſhort downy hairs on it: the ſeeds are broader than thoſe of the common Aſh, and are of a very light colour.

[The firſt of theſe is alſo called the *White Aſh*; and the ſecond the *Red Aſh*. A third named the *Black Aſh*, and other varieties, may be found in the nurſeries.]

PROPAGATION AND CULTURE.

1. The common Aſh propagates itſelf in plenty by the ſeeds which ſcatter in the autumn, ſo that where the ſeeds happen to fall in places where cattle do not come, there will be plenty of the plants come up in the ſpring; but where any perſon is deſirous to raiſe a quantity of the trees, the ſeeds ſhould be ſown as ſoon as they are ripe, and then the plants will come up the following ſpring; but if the ſeeds are kept out of the ground till the ſpring, the plants will not come up till the year after: it is the ſame with all the ſorts of Aſh; ſo that when any of their ſeeds are brought from abroad, as they ſeldom arrive here before the ſpring, the plants muſt not be expected to appear till the next year; therefore the ground ſhould be kept clean all the ſummer where they are ſown, and not diſturbed, leſt the ſeeds ſhould be turned out of the ground, or buried too deep to grow; for many perſons are too impatient to wait a year for the growth of ſeeds, ſo that if they do not come up the firſt year, they dig up the ground, and thereby deſtroy the ſeeds.

When the plants come up, they muſt be kept clean from weeds during the ſummer; and if they make good progreſs in the ſeed-bed, they will be fit to tranſplant by the autumn; therefore there ſhould be ſome ground prepared to receive them, and as ſoon as their leaves begin to fall, they may be tranſplanted. In taking them up, there ſhould be care taken not to break or tear off their roots; to prevent which, they ſhould be taken up with a ſpade, and not drawn up, as is frequently practiſed; for as many of the plants which riſe from ſeeds will out-ſtrip the others in their growth, ſo it is frequently practiſed to draw up the largeſt plants, and leave the ſmaller to grow a year longer before they are tranſplanted; and to avoid hurting thoſe which are left, the others are drawn out by hand, and thereby many of their roots are torn off or broken; therefore it is much the better way to take all up, little or big together, and tranſplant them out, placing the larger ones together in rows, and the ſmaller by themſelves. The rows ſhould be three feet aſunder, and the plants a foot and a half diſtance in the rows; in this nurſery they may remain two years, by which time they will be ſtrong enough to plant where they are to remain; for the younger they are planted out, the larger they will grow; ſo that where they are deſigned to grow large, they ſhould be planted very young; and the ground where the plants are raiſed, ſhould not be better than that where they are deſigned to grow; for when the plants are raiſed in good land, and afterwards tranſplanted into worſe, they very rarely thrive; ſo that it is much the beſt method to make the nurſery upon a part of the ſame land, where the trees are deſigned to be planted, and then a ſufficient number of trees may be left ſtanding upon the ground, and theſe will out-ſtrip thoſe which are removed, and will grow to a larger ſize.

Where people live in the neighbourhood of Aſh-trees, they may ſupply themſelves with plenty of ſelf-ſown plants, provided cattle are not ſuffered to graze on the land, for they will eat off the young plants, and not ſuffer them to grow; but where the ſeeds fall in hedges, or where they are protected by buſhes, the plants will come up and thrive.

[To theſe ſhort and imperfect directions of Mr. Miller, it may not be amiſs to add the following paragraphs from Mr. Evelyn, Dr. Hunter, and Mr. Boutcher.

If you would have a conſiderable wood of Aſh at once, prepare your ground as you would for corn, and ſow good ſtore of keys, ſome crab-kernels, &c. with oats. Take off your crop of corn in its ſeaſon, and the year following the ground will be covered with young aſhes, which will either be fit to ſtand, which I prefer, or be tranſplanted for divers years after. And theſe you will find to be far better than any you can gather out of the woods, eſpecially ſuckers which are worth nothing. The ſooner they are removed, the better; and aſhes of two years thus taken out of the nurſery, ſhall out-ſtrip thoſe often taken out of the hedge. You may keep the keys in ſand for a winter before you ſow them, in a covered airy place.

Gather the ſeeds or keys from healthy young thriving trees in october or november; having prepared the beds, lower them about an inch, by raking ſome of the earth into the alleys; ſow the ſeed moderately thick, and then throw the earth back again lightly with a ſpade, or ſift it over them an inch thick, and rake it level. In ſpring, with a very ſmall light iron rake, the teeth about an inch aſunder, rake off the moſs, pull up the weeds, and ſift a little earth over them again.

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[a] Swinburn.

[b] Philoſ. tranſ. vol. 60.

[c] Symonds in Young's ann. 3. 161.

[d] Linn. ſpec.

The ſecond ſpring, in the firſt open weather in february, rake off the earth as before very gently, ſift freſh over them half an inch thick, and in march and april the young plants will appear in plenty. In october ſift ſome coal-aſhes half an inch thick over them.

Next ſpring prepare ſome beds ſix feet wide, with a path of two feet between each: plant all of a ſize in each bed, at one foot ſquare, firſt ſhortening the tap roots, and alſo the ſide ones[e].

They muſt then be planted out into your nurſery in rows three feet aſunder, and each plant at one foot diſtance, where they are to remain till they are finally planted out[f].

Mr. Boutcher recommends the ſeeds being ſpread in an airy loft, and turned till dry, which will be in three or four weeks, and then mixed with ſand; to be ſown the beginning of april on freſh mellow ſoil, on beds three and a half feet broad, with alleys eighteen inches, and covered three quarters of an inch deep. The ſeeds will not appear till the ſucceeding ſpring; during this time the beds muſt be kept clean, and in february they muſt be raked over: if a little rich mould is thrown over them, it will much promote the growth of the ſeedlings. The following february or march remove them, and plant them in drills eighteen or twenty inches aſunder, and eight or nine inches in the drill. In october remove them again, planting them in lines three and a half feet aſunder, and fifteen or ſixteen inches in the line, where they may remain three years. The trees will now be ſeven or eight feet high, of a proper ſize for extenſive plantations. Where large ones are wanted, remove them every fourth year.

Stocks for budding ſhould be planted out in the nurſery, a foot aſunder, and two feet diſtant in the rows. When they are one year old, and about the thickneſs of a bean ſtraw, they will be of a proper ſize for working. A little after midſummer is the time for the operation, and care muſt be obſerved not to bind the eye too tight. They need not be unlooſed before the end of ſeptember. In march the head of the ſtock ſhould be taken off a little above the eye, and by the end of the ſummer following, if the land be good, they will have made ſtrong ſhoots. The variegated ſorts can be increaſed only in this manner[g].]

2. &c. The other ſorts are commonly propagated in the nurſeries by budding or ingrafting upon the common Aſh; but are not ſo valuable as thoſe which are raiſed from ſeeds, becauſe the ſtock grows much faſter than the grafts; ſo that the lower part of the trunk, ſo far as the ſtock riſes, will often be twice the ſize of the upper; and if the trees ſtand much expoſed to the wind, the grafts are frequently broken off from the ſtock, after they are grown to a large ſize.

F. Paniculata is generally planted for ornament, the flowers making a fine appearance when they are in beauty, for almoſt every branch is terminated by a large looſe panicle; ſo that when the trees are large, and covered with flowers, they are diſtinguiſhable at a great diſtance.

All the other ſorts ſerve to make a variety in plantations, but have little beauty to recommend them; and as their wood ſeems to be greatly inferior to that of the common Aſh, there ſhould be few of theſe planted, becauſe they will only fill up the ſpace where better trees might grow.

[French Honeysuckle. See *Hedyſarum coronarium.*

French Marygold. See *Tagetes.*

Fresh-water Soldier. See *Stratiotes.*

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[e] Evelyn.

[f] Hunter's Evelyn.

[g] Ibid.

Frier's Cowl. See *Arum Ariſarum.*

Fringe-tree. See *Chionanthus.*

Frisea. See *Theſium.*]

FRITILLARIA. (*From Fritillus a cheſs or draught-board, like which the petals of the common Fritillary are checquered. Fritillus, however, is not the board, but the dice-box.*—" Movet arma Fritillo," Juv.)
Lin. gen. n. 411. *Reich. n.* 444. *Schreb. n.* 559. *Tourneſ.* 201. *Juſſ.* 48. *Gærtn. t.* 17.—Corona imperialis. *Tourneſ.* 197, 198. *Juſſ.* 49.
Claſſ. 6. 1. Hexandria Monogynia.
Nat. order of *Coronariæ.*—*Lilia,* Juſſ.

GENERIC CHARACTER.

Cal. none.

Cor. ſix-petalled, bell-ſhaped, ſpreading at the baſe. *Petals* oblong, parallel.
Nectary, an excavation or pit in the baſe of each petal.

Stam. *Filaments* ſix, ſubulate, approximating to the ſtyle, the length of the corolla. *Anthers* quadrangular, oblong, erect.

Pist. *Germ* oblong, three-cornered, obtuſe. *Style* ſimple, longer than the ſtamens. *Stigma* triple, ſpreading, blunt. (Style trifid, with three ſtigmas.)

Per. *Capſule* oblong, obtuſe, three-lobed, three-celled, three-valved, (ſuperior. G.)

Seeds very many, flat, ſemiorbicular on the outſide, in a double row.

Obs. Fritillaria T. *Nectary oblong. Pericarp even: obtuſely three-cornered.*
Imperialis T. *Nectary hemiſphærical. Pericarp ſharp at the edges: hexangular.*

ESSENTIAL CHARACTER.

Cor. ſix-petalled, bell-ſhaped, with a nectareous cavity above the claws. *Stam.* the length of the corolla.

SPECIES.

1. Fritillaria imperialis. *Imperial Fritillary,* or *Crown Imperial.*
Lin. ſpec. 435. *Reich.* 2. 46. *hort. upſ.* 82. *cliff.* 119. *Gærtn. fruct.* 64. *Mill. fig. t.* 105. *Curt. magaz.* 194.
Corona imperialis. *Beſl. eyſt. vern.* V. *t.* 1, 2, 3. *Dod.* 202. *Ger.* 153. *f.* 11, 12. *emac.* 202. *Park. parad.* 27. 29. *f.* 1. *Raii hiſt.* 1105.
Lilium, ſ. Cor. imp. *Bauh. pin.* 79.
Tuſai. *Cluſ. hiſt.* 1, 127, 128.
Cor. imp. ſ. Tuſai. *Bauh. hiſt.* 2. 697. *f.* 2.
Flowers in a raceme, with a coma over them, but naked below; leaves quite entire.

2. Fritillaria perſica. *Perſian Fritillary,* or *Perſian Lily.*
Lin. ſpec. 436. *Reich.* 47. *hort. upſ.* 82. *cliff.* 119.
Lilium perſicum. *Bauh. pin.* 79. *Rudb. elyſ.* 2. 183. *f.* 1. *Dod. pempt.* 220. *Ger.* 152. *emac.* 201. *Park. parad.* 28. 29. *f.* 2. *Raii hiſt.* 1106.—ſ. ſuſianum. *Bauh. hiſt.* 2. 699. *f.* 2.
β. F. racemoſa. *Smaller Perſian Lily.*
Mill. dict. n. 7.
F. ramoſa, ſ. Lil. perſ. minus. *Mor. bleſ.*
Raceme almoſt naked, leaves oblique.

3. Fritillaria pyrenaica. *Black Fritillary.*
Lin. ſpec. 436. *Reich.* 47. *hort. cliff.* 81. *Pallas. itin.* 1. 147.
F. aquitanica. *Mill. dict. n.* 2.
F. fl. minore. *Bauh. pin.* 64. *Raii hiſt.* 1108.
F. pyrenæa. *Cluſ. hiſt.* 2. 256.—ſ. apennina. *Park. parad.* 43. *t.* 41. *f.* 11.
F. aquitanica minor fl. luteo obſoleto. *Ger. emac.* 150. *f.* 3.
Meleagris ſ. Fr. pyrenæa fl. minore. *Bauh. hiſt.* 2. 683. *f.* 1.
Loweſt leaves oppoſite, ſome of the flowers having a leaf interpoſed between them.

4. Fritillaria Meleagris. *Common Fritillary,* or *Checquered Lily.*
Lin. ſpec. 436. *Reich.* 47. *fl. ſuec. n.* 283. *hort. upſ.* 31. *cliff.* 119. *Hudſ. angl.* 144. *With.* 345. *Curtis lond.* 3. 20. *Relh. cant. n.* 264. *Hall. helv. n.* 1235. *Scop. carn. n.* 405. *Jacqu. anſtr.*

auſtr. 5. *app. t.* 32. *Allion. pedem. n.* 1888. *Villars dauph.* 2. 249.

α. F. præcox purpurea variegata. *Bauh. pin.* 64. *Mill. dict. n.* 1. *Common early purple.*

F. vulgaris. *Park. parad.* 40. *Raii hiſt.* 1106.

F. & F. variegata. *Ger.* 122. *f.* 1, 2. *emac.* 149. *f.* 1, 2.

Meleagris. *Renealm. ſpec.* 147. *t.* 146.—ſ. Fr. dilutior & ſaturatior. *Bauh. hiſt.* 2. 681.

β. F. alba variegata. *Bauh. pin.* 64. *Variegated white.*

γ. F. alba. *Park. parad.* 42.—præcox. *Bauh. pin.* 64. *Raii hiſt.* 1107. *Early White.*

δ. F. ſerotina atropurpurea. *Bauh. pin.* 64. *Raii hiſt.* 1107. *Late dark purple.*

F. fl. atrorubente. *Park. parad.* 42?

F. nigra. *Mill. dict. n.* 3?

ε. F. lutea. *Mill. dict. n.* 4.—maxima italica. *Park. parad.* 43. *f.* 8. *Raii hiſt.* 1107. *Yellow.*

ζ. F. umbellata. *Mill. dict. n.* 5.—umbellifera. *Bauh. pin.* 64. *Raii hiſt.* 1108.—hiſpanica umb. *Park. parad.* 44.

All the leaves alternate, ſtem one-flowered.

[5. Fritillaria cantonienſis.
Lour. cochinch. 206.

Leaves three-nerved, the upper ones oppoſite; flowers in pairs, axillary.]

DESCRIPTIONS, *&c.*

1. The Crown Imperial has a large round ſcaly root of a yellow colour, and a ſtrong odour of a fox; the ſtalk riſes to the height of four feet or upwards; it is ſtrong, ſucculent, and garniſhed two-thirds of the length on every ſide, with long narrow leaves ending in points, which are ſmooth and entire; the upper part of the ſtalk is naked, a foot in length; then the flowers come out all round the ſtalk upon ſhort foot-ſtalks, which turn downward, each ſuſtaining one large flower. Above theſe riſes a ſpreading tuft of green leaves, which are erect, and called the Coma. This plant flowers the beginning of april, and the ſeeds are ripe in july.

[Capſule a hexangular priſm, the angles produced into wings; each wing ſcored on the outſide with a deep broad furrow, and furniſhed with a double thick wing; on the inſide a partition in the middle, to each ſide of which the ſeeds are fixed horizontally, and ciliated on both edges of the ſuture with white hairs like whiſkers turned inwards[a].]

The variety with yellow flowers, that with large flowers, and thoſe with double flowers, are the moſt valuable; but that which has two or three whorls of flowers above each other, makes the fineſt appearance; though this ſeldom produces its flowers after this manner the firſt year after removing, but the ſecond and third year after planting, the ſtalks will be taller, and frequently have three tier of flowers, one above another, which is called the Triple Crown. The ſtalks of this ſort frequently run flat and broad, when they produce a greater number of flowers than uſual; but this is only a luxuriancy of nature, not conſtant, though many of the writers have mentioned it as a particular variety.

As this is one of the earlieſt tall flowers of the ſpring, it makes a fine appearance in the middle of large borders, at a ſeaſon when ſuch flowers are much wanted to decorate the pleaſure-garden: but the rank fox-like odour which they emit is too ſtrong for moſt people, and renders the flowers leſs valuable than they would otherwiſe be.

[The beauty, however, of the plant, and the ſplendor of the magnificent pendulous flowers will ever ſecure this a place in large gardens and plantations. The ſingular nectary cannot but engage the attention of the curious obſerver: it is a white glandular cavity at the baſe of each petal, and has a drop of limpid nectareous juice ſtanding in it, when the flower is in vigour. Another of the wonders of nature may be obſerved in the peduncles, which bend down whilſt the plant is in flower, but become upright as the ſeed ripens. This circumſtance, however, is by no means peculiar to this plant, but common to it with many others.]

Varieties.

1. Common Crown Imperial, of a dirty red colour.
2. Yellow Crown Imperial, of a bright yellow. *Mill. fig. t.* 105.
3. Bright red Crown Imperial, called Fuſai.
4. The pale yellow Crown Imperial.
5. The yellow ſtriped Crown Imperial.
6. The large flowering Crown Imperial.
7. The broad-leaved late red Crown Imperial.
8. The double and triple crowned Imperial Crown.
9. The double red Crown Imperial.
10. The double yellow Crown Imperial.
11. The ſilver ſtriped leaved Crown Imperial.
12. The yellow ſtriped leaved Crown Imperial.

There are ſome few other varieties which are mentioned in the catalogues of the Dutch floriſts, but their diſtinctions are ſo minute that they are not diſtinguiſhable, ſo I ſhall paſs them over, as thoſe here inſerted are all that I have ſeen growing either in England or Holland, which deſerved any diſtinction.

[Introduced at Vienna in 1576.

Gerarde had great plenty of it in his garden in 1596; he calls it a rare and ſtrange plant. Parkinſon (in 1629) had not obſerved any variety in the colour of the flower. Lobel, however, enumerates many varieties.—It certainly came into theſe parts of Europe from Conſtantinople, but it is only conjectured by Cluſius that its native country is Perſia.

The Crown Imperial has the ſame name in all the European languages; in German *Kaiſerkrone*, in Daniſh *Keiſerkrone*, in Swediſh *Keiſarkrona*, in French *la Couronne Imperiale* or *la Fritillaire Imperiale*, in Italian *la Corona Imperiale*, in Spaniſh *la Corona Imperial.*]

2. The Perſian Lily has a large round root. Stem three feet high, the lower part cloſely garniſhed on every ſide with leaves, which are three inches long, and half an inch broad, of a gray colour, and twiſted obliquely. Flowers in a looſe ſpike at the top, forming a pyramid: they are ſhorter than the other ſorts, ſpread wider at the brim, and are not bent down; they are of a dark purple colour, and appear in may, but ſeldom produce ſeeds in England.

[The loweſt leaves grow in pairs, three or four together, oppoſite, in whorls[b].

Root the ſize of an orange, of a taſte extremely bitter, but without any remarkable ſmell[c].

Suppoſed to be a native of Perſia; and to have appeared in Europe in 1573. Gmelin found it in Ruſſia. Cultivated here in Gerarde's garden 1596. In his herbal he ſays that it is a denizon in ſome few of our London gardens.—Parkinſon (1629) informs us that it was ſent unto us by the means of divers Turkey Merchants from Conſtantinople; and eſpecially by the procurement of Mr. Nicholas Lete, a worthy merchant, and a lover of all fair flowers.]

β. The ſmall Perſian Lily, [which Mr. Miller makes a diſtinct ſpecies] has a much ſhorter ſtem, and ſmaller leaves; the ſtem branches out at the top into ſeveral ſmall peduncles, each ſuſtaining one dark-coloured flower.

3. The leaves of this are broader, and of a deeper green than the common Fritillary; the lower leaves are oppoſite, but thoſe above alternate. Stem a foot and half high, terminated by two flowers of an obſcure yellow colour, and ſpreading more at the brim than thoſe of the common Fritillary, but turned downwards in the ſame manner. It flowers three weeks after that. It is a native of France and Ruſſia.

4. [*Root* a ſolid bulb or tuber, about the ſize of a hazel nut, white or yellowiſh white, roundiſh, compreſſed, diviſible into ſeveral, incloſed by the withered, wrinkled bulb of the preceding year, as

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[a] Gærtner.

[b] Linn. ſpec.

[c] Bauh. hiſt.

in a caſe. *Stem* from ſix to twelve, fifteen and even eighteen inches in height, advancing conſiderably in length after flowering; it comes out from the ſide of the root, is ſimple, upright, round, ſmooth, glaucous, and not unfrequently purpliſh. *Leaves* three or four, ſometimes five or ſix, graſs-like, diſtantly alternate, half embracing, round on the under, and hollow on the upper ſide, ſomewhat twiſted and glaucous. *Flower* uſually ſingle, ſometimes two, or even three, on the top of the ſtem, large, pendulous, at firſt ſomewhat pyramidal, but afterwards bell-ſhaped; petals checquered with purple and white, or purple and greeniſh yellow; in our wild ones the colour is a dull red checquered with a deeper, but without mixture of either green or yellow; the three outer petals are gibbous at the baſe, the three inner plane: nectary narrow, greeniſh, fleſhy and glandular, connecting the filaments to the petals: filaments twice the length of the germ; anthers flattiſh, with four grooves, and a greeniſh point at the top of each, two-celled, nearly as long as the filaments, becoming ſhorter by one half on the ſhedding of the pollen: germ ſcarce manifeſtly three-cornered; ſtyle downy, round, a little thickened above, divided into three ſegments, which are round, diverging, and marked both within and without with a groove, viſible by a magnifier; ſtigmas ſimple, villoſe: capſule a priſm of three blunt corners[d],] not pendulous, but erect.

Native of the ſouthern countries of Europe. [Found alſo in a wild ſtate near Upſala in Sweden, but eſcaped from a garden. In England it was firſt mentioned by Mr. Blackſtone to grow in Mawde fields near Riſlip common, Middleſex, and to have been obſerved there by Mr. Aſhby, of Breakſpears, above forty years. It has ſince been found between Mortlake and Kew, near Enfield, in a wood near Bromley in Kent; near Bury St Edmunds, and between Laxfield and Stirrup-Street, in Suffolk; Weſthoe near Linton in Cambridgeſhire; near Leiceſter; and in a meadow near Blymhill, in Staffordſhire.

It flowers in april and may, and if the ſeaſon be mild, at the beginning of the former month, or even the end of march.

The common Fritillary is named in German *Kiebitzey*, in Dutch *Kievitſbloem*, in Daniſh *Vibeæg*, in Swediſh *Vipaägg*, in French *la Fritillaire Meleagre* or *Panachee*, *le Damier*, in Italian *Fritillaria*, *Giglio variegato*, *Meleagride*, *Fritillaria ſcaccheggiata*, in Spaniſh *la Fritillaria*, *el Meleagro*.

Gerarde calls it *Turky-hen* or *Guinea-hen flower*, and *Checkered Daffodill*. The curious and painful herbariſt of Paris, John Robin, ſent him many plants for his garden, where they proſpered (as he informs us) as in their own native country; and were then greatly eſteemed for the beautifying of our gardens, and the boſoms of the beautiful.

Some call it, ſays Parkinſon, *Narciſſus Caparonius*, from the firſt finder *Noel Caparon*, an Apothecary then dwelling at Orleans, but ſhortly after murdered in the maſſacre of France. He leaves it to every one's will, to call it in Engliſh either *Fritillaria*, as it is called of moſt, or *checkered Daffodill* or *Guinea-hen flower*; or, as he does, *checkered Lilly*. Lobel makes it a kind of *Tulip*. The country people about Riſlip call the flowers *Snake's-heads*.

Many varieties have been ſent from Spain, Portugal, Italy, &c. The moſt remarkable of theſe are here recited.] Many others have been raiſed from ſeed by the floriſts, which differ in the ſize and colour of their flowers: theſe amount to a conſiderable number in the catalogues of the Dutch floriſts: but as new varieties may be continually produced, and theſe flowers are no longer in ſuch eſteem as they were formerly, it would be to little purpoſe to enumerate them.

[Parkinſon (Parad. a. 1629) has twelve varieties. —1. The Common purple Fritillary. 2. Blood-red. 3. Great purple or red. 4. White. 5. Double bluſh. 6. Pure yellow. 7. Checkered yellow. 8. Great yellow Italian. 9. Small Italian. 10. Small yellow of Portugal. 11. Black. 12. Spaniſh black.

Johnſon in Gerarde (a. 1636) has thirteen, ſome of them different from Parkinſon's.

Ray (a. 1688) enumerates twelve, chiefly from Parkinſon and the two brothers, John and Caſpar Bauhin.]

Mr. Miller reckons as diſtinct ſpecies, beſides 1. α. the common early purple; of which there is a variety with a double flower. 2. δ. *The Black* (n. 3.) ſeldom riſing more than a foot high, the leaves ſhorter than in the foregoing, each ſtalk terminated by three or four flowers, riſing above each other, of a dark purple colour, with yellowiſh ſpots; and flowering three weeks later than the common purple. 3. ε. *The great yellow Italian*, about a foot high, with ſpear-ſhaped leaves four inches long and one broad, ſometimes oppoſite, but generally alternate; the ſtem terminated by one large flower of a yellowiſh colour, chequered with light purple, and flowering the beginning of april. There are two or three ſubordinate varieties of this, which differ in the ſize and colour of their flowers, and the breadth of their leaves. 4. ζ. *Umbellate Fritillary*, a foot and half high, with ſhorter and broader leaves, of a grayiſh colour; the flowers produced round the ſtalks like thoſe of the Crown-Imperial, of a dark purple colour, chequered with a yellowiſh green. This flowers three weeks later than the common purple.

[He does not mention the *white*, (β, γ.) which ſometimes is almoſt without any ſpots or marks; theſe, however, are frequently viſible enough, and in ſome flowers again a faint bluſh-colour may be obſerved.

5. Stem annual, quite ſimple, hard, ſlender, round, upright, a foot and half high. Leaves ſmooth, quite entire, rounded at the baſe, then conical, with a long point. Flowers pendulous, the whole duſky purple, and without ſmell. Corolla thick, ſix-cornered, almoſt cloſed. Style trifid, with ſimple ſtigmas. In colour it agrees with Fr. ſerotina atropurpurea of Bauhin's pinax, 64. n. 8:—in the varying ſituation of the leaves with Fr. pyrenaica of Linneus; but it is a different ſpecies from both. Cultivated about Canton in China[e].]

PROPAGATION AND CULTURE.

1. This may be propagated by ſeeds, or offsets from the root; the firſt is too tedious for moſt of the Engliſh floriſts, becauſe the plants ſo raiſed are ſix or ſeven years before they flower; but the Dutch and Flemiſh gardeners, who have more patience, frequently raiſe them from ſeeds, ſo get ſome new varieties, which reward their labour. The method of propagating theſe flowers from ſeeds being nearly the ſame as for the Tulip, the reader is deſired to turn to that article, where there are full directions for performing it.

The common method of propagating them here, is by offsets ſent out from the old roots, which will flower ſtrong the ſecond year after they are taken from the roots; but in order to have plenty of theſe, the roots ſhould not be tranſplanted oftener than every third year, by which time each root will have put out ſeveral offsets, ſome of which will be large enough to flower the following year, ſo may be planted in the borders of the flower-garden, where they are to remain; and the ſmaller roots may be planted in a nurſery-bed, to grow a year or two according to their ſize; therefore they ſhould be ſorted, and the ſmalleſt roots planted in a bed together, which ſhould remain there two years, and the larger by themſelves to ſtand one year, by which time they will have acquired ſtrength enough to flower, ſo may then be removed into the pleaſure-garden.

The time for taking up theſe roots is in the beginning of july, when their ſtalks will be decayed;

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[d] Curtis, Woodw. Mſſ. Withering.

[e] Loureiro.

and they may be kept out of the ground two months, but they ſhould be laid ſingle in a dry ſhady room, but not in heaps, or in a moiſt place, which will cauſe them to grow mouldy, and rot. The off-ſets ſhould be firſt planted, for as theſe are ſmall, they will be apt to ſhrink if they are kept long out of the ground.

As the roots are large, they muſt not be planted too near other flowers; and when they are planted in beds by themſelves, they ſhould not be nearer than a foot and a half in the rows, and two feet row from row; they ſhould be planted ſix inches deep at leaſt, eſpecially the ſtrong roots: they delight in a light ſoil, not too wet, nor very full of dung; therefore if any dung is laid upon the borders where they are planted, it ſhould be buried pretty deep, ſo as to be two or three inches below the roots.

2, 3, 4. Theſe plants are propagated either by ſeeds, or off-ſets from the old roots; by the firſt of which methods new varieties will be obtained, as alſo a larger ſtock of roots in three years, than can be obtained in twenty or thirty years in the latter method: I ſhall therefore firſt treat of their propagation by ſeeds.

Having provided yourſelf with ſome good ſeeds, ſaved from the faireſt flowers, you muſt procure ſome ſhallow pans or boxes, which muſt have ſome holes in their bottoms to let out the moiſture; theſe you ſhould fill with light freſh earth, laying a few potſheards over the holes, to prevent the earth from ſtopping them; then, having laid the earth very level in the boxes, &c. you muſt ſow the ſeeds thereon pretty thick, covering it with fine ſifted earth a quarter of an inch thick. The time for ſowing the ſeed is about the beginning of auguſt; for if it be kept much longer out of the ground, it will not grow; then place the boxes or pans where they may have the morning ſun until eleven o'clock, obſerving, if the ſeaſon proves dry, to water them gently, as alſo to pull up all weeds as ſoon as they appear; for if they are ſuffered to remain until they have taken deep root into the earth, they would draw the ſeeds out of the ground whenever they are pulled up. Toward the latter end of ſeptember you ſhould remove the boxes, &c. into a warmer ſituation, placing them cloſe to a hedge or wall expoſed to the ſouth; if they are ſown in pots, theſe ſhould be plunged into the ground, but they are beſt in tubs; theſe ſhould be covered in ſevere froſt. In this ſituation they may remain until the middle of march, by which time the plants will be come up an inch high; you muſt therefore remove the boxes, as the weather becomes hot, into a more ſhady ſituation; for while the plants are young, they are liable to ſuffer by being too much expoſed to the ſun: and in this ſhady ſituation they may remain during the heat of the ſummer, obſerving to keep them clear from weeds, and to refreſh them now and then with a little moiſture; but be careful not to give them much water after their leaves are decayed, which would rot their roots. About the beginning of auguſt, if the roots are very thick in the boxes, you ſhould prepare a bed of good light freſh earth, which muſt be levelled very even, upon which you ſhould ſpread the earth in the boxes in which the ſmall roots are contained, equally covering it about one-fourth of an inch thick with the ſame freſh earth: this bed ſhould be ſituated in a warm poſition, but not too cloſe to hedges, walls, or pales, which would cauſe their leaves to be long and ſlender, and make the roots weaker than if placed in a more open expoſure.

In this bed they may remain until they flower, which is generally the third year from ſowing; at which time you ſhould put down a mark to the roots of all ſuch as produce fair flowers, that at the time of taking them out of the ground, which ought to be ſoon after their green leaves are decayed, they may be ſelected into a bed amongſt your old roots of this flower, which, for their beauty, are preſerved in the beſt gardens; but the other leſs valuable flowers may be planted in the borders of the parterre-garden for their variety, where, being intermixed with other flowers of different ſeaſons, they will make a good appearance.

The fine ſorts of this flower ſhould remain undiſturbed three years, by which time they will have produced many off-ſets; and ſhould be taken up when their leaves are decayed, and planted into a freſh bed, taking ſuch of their off-ſets as are large enough to produce flowers to plant in the flower-garden; but the ſmaller roots may be planted into a nurſery-bed until they have obtained ſtrength enough to flower; but you muſt never ſuffer theſe roots to lay out of the ground when you remove them, but plant them again immediately, otherwiſe they will periſh.

During theſe three years which I have adviſed the roots to remain in the beds, the ſurface of the earth ſhould be ſtirred every autumn with a trowel, obſerving not to go ſo deep as to bruiſe the root, and at the ſame time lay a thin cover of very rotten dung or tanner's bark upon the ſurface of the beds; which, being waſhed into the ground, will cauſe the flowers to be larger, as alſo the roots to make a greater increaſe: you muſt alſo obſerve to keep them conſtantly clear from weeds, and thoſe roots which you would preſerve with care, ſhould not be ſuffered to ſeed.

When a ſtock of good flowers are obtained, they may be preſerved and increaſed in the ſame manner as other bulbous rooted flowers, which is by off-ſets ſent out from their roots, which ſhould be taken off every other year from the fineſt ſorts; but the ordinary flowers may remain three years undiſturbed, in which time they will have multiplied ſo much, as that each root will have formed a cluſter; ſo that if they are left longer together, the roots will be ſmall, and the flowers very weak; therefore, if theſe are taken up every other year, the roots will be the ſtronger. Theſe roots may be treated in the ſame manner as Tulips, and other bulbous rooted flowers, with this difference only, that the roots will not bear to be kept out of the ground ſo long; therefore if there ſhould be a neceſſity for keeping them out of the ground any time, it will be beſt to put the roots into ſand to prevent their ſhrinking.

As theſe flowers come out early in the ſpring, they make a pretty appearance in the borders of the pleaſure garden, where they are planted in ſmall clumps; for when they ſtand ſingle in the borders, they make but a poor figure.

Fritillaria Crassa. See *Stapelia.*

[Frog-bit. See *Hydrocharis.*]

FUCHSIA. (*So named in honour of Leonard Fuchs, a famous German Botaniſt, author of Hiſtoria Stirpium in* 1542, *fol. with* 516 *excellent engravings in wood.*)

Lin. gen. n. 128. *Reich. n.* 518. *Schreb. n.* 652. *Plum.* 14. *Juſſ.* 320. Skinera *Forſt.* 29. Dorvallia *Commers.*

Claſſ. 8. 1. Octandria Monogynia.

Nat. order of *Onagræ,* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, funnel-form, coloured, ſuperior, deciduous. *Tube* ovate at the baſe, contracted above it, then gradually widening, patulous, angular. *Border* ſhort, four-parted; *parts* ovate, acuminate, ſpreading.

Cor. *Petals* four, ovate, acuminate, ſeſſile, ſpreading, the ſame length with the parts of the calyx.

Stam. *Filaments* four (or eight) filiform, erect, inſerted into the tube of the calyx below the middle, and a little longer than the tube. *Anthers* twin.

Pist. *Germ* inferior, ovate, below the inſertion of the calyx conſtricted. *Style* ſimple, the length of the ſtamens. *Stigma* obtuſe (club-ſhaped?)

Per. *Berry* ovate, four-grooved, four-celled.

Seeds many, ovate, fixed in a double row to a columnar receptacle in the middle of the berry.

ESSENTIAL CHARACTER.

Cal. one-leafed coloured, bearing the corolla, very large. *Pet.* four, ſmall. *Berry* inferior, four-celled, with many ſeeds.

SPECIES.

1. Fuchſia triphylla. *Three-leaved Fuchſia.*
Lin. ſpec. ed. 1. *app.* 1191. *ed.* 2. 159. *ſyſt.* 361. *Reich.* 2. 160. *Mill. dict.*
F. triphylla, flore coccineo. *Plum. gen.* 14. *ic.* 133. *f.* 1.
F. racemoſa. *Lamarck encycl.* 565.
Peduncles one-flowered, leaves by threes.
2. Fuchſia coccinea. *Scarlet-flowered Fuchſia.*
Ait. hort. kew. 2. 8. *Curtis magaz.* 97.
F. magellanica. *Lamarck encycl.* 565.
Thileo. *Feuillée itin.* 64. *t.* 47.
Leaves oppoſite, ovate, toothletted, petals obovate, obtuſe.
[3. Fuchſia multiflora.
Lin. ſyſt. 361. *Reich.* 161.
Peduncles many-flowered.
4. Fuchſia excorticata.
Lin. ſyſt. 361. *ſuppl.* 217. *Lamarck encycl.* 566.
Skinnera excorticata. *Forſt. gen.* 58. *t.* 29.
Peduncles axillary, one-flowered, leaves ovate, alternate.
5. Fuchſia involucrata.
Swartz prodr. 62.
Flowers involucred.

DESCRIPTIONS, *&c.*

1. Root woody, branched, reddiſh. Stem herbaceous, upright, quite ſimple, reddiſh green, leafy, two feet high at moſt. Leaves lanceolate, entire, pale green, a little firm or coriaceous, ſeſſile, diſpoſed in threes. Peduncles one-flowered, ſcattered, and forming a ſtraight terminating raceme. Flowers large, very fine, of a very bright ſcarlet, having eight ſtamens, not projecting beyond the flower; and the berry is a little larger than an olive, fleſhy, ſoft, reddiſh black, ſomewhat pubeſcent, of a very pleaſant taſte; the ſeeds are ſmall and brown. Plumier obſerved this plant in St. Domingo[a],] and it was afterwards found by Dr. Houſtoun at Carthagena in New Spain, whence he ſent the ſeeds into England, [it muſt have been cultivated here, therefore by Mr. Miller before 1733, in which year Dr. Houſtoun died.

2. This is a ſhrub, growing to the height of ſix or ſeven feet. The leaves are commonly oppoſite, on ſhort petioles, of a fine green, having the veins tinged with red, with a fine down on them. Peduncles axillary, one-flowered, longer than the leaves. Flowers pendulous, bright ſcarlet, with a four-parted calyx, four petals, and eight ſtamens.

Scarlet Fuchſia is a plant of peculiar beauty, producing its rich pendant bloſſoms through moſt part of the ſummer: the petals in the centre of the flower are particularly deſerving of notice; they ſomewhat reſemble a ſmall roll of the richeſt purple-coloured ribband[b].

It is a native of Chili, and was introduced into the royal garden at Kew in 1788, by Captain Firth. It flowers from may to july[c]. Mr. Lee of Hammerſmith is ſaid to have had this plant firſt for ſale[d].

3. This was found in South America by Mutis.

4. This is a very ſmooth tree. Leaves on long petioles, hoary underneath, very finely ſerrate. Flowers pendulous, very large. Germ oblong. Corolla funnel-ſhaped; tube globular at the baſe, then cylindric, and gradually widening into the border, which is eight-cleft, four of the alternate ſegments lanceolate, ſpreading, the other four one-third only the ſize of the others, and erect[e].

According to Forſter, there is no corolla, except four nectaries, which are ovate-lanceolate, erect, interpoſed between the ſegments of the calyx, and only one-third of their ſize. Others call theſe the petals. The tube of the calyx is callous at the baſe, and curved in a little; the ſegments lanceolate, horizontal, only half the length of the tube. Filaments eight, the length of the border; anthers orbiculate, faſtened by the back to the filaments. Style filiform, erect, longer than the calyx. Stigma globular, tubercled. Capſule (Berry?) oblong.

Native of New Zealand. Forſter gave it the name of *Skinnera* from Mr. Skinner of Oxford—"acutiſſimo oculatiſſimoque botanico Oxonienſi," as he expreſſes it[f].

5. Native of Jamaica[g].]

PROPAGATION AND CULTURE.

1. This is propagated by ſeeds, which muſt be ſown in pots filled with rich light earth, and plunged into a hot-bed of tanner's bark, and treated in the ſame way as other ſeeds from warm countries. In about a month or ſix weeks after the ſeeds are ſown, the plants will begin to appear, when they ſhould be carefully cleared from weeds, and frequently refreſhed with water to promote their growth; and when they are about two inches high, they ſhould be ſhaken out of the pot, and ſeparated carefully; then plant each into a ſmall pot filled with light rich earth, and plunge them again into a hot-bed of tanner's bark, being careful to ſcreen them from the ſun until they have taken new root; after which time they muſt have freſh air admitted to them every day in proportion to the warmth of the ſeaſon, and ſhould be frequently watered. As the ſeaſon advances and becomes warm, the glaſſes of the hot-bed ſhould be raiſed higher, to admit a greater ſhare of air to the plants, to prevent their drawing up weak; and when the plants are grown ſo tall as to reach the glaſſes, they ſhould be removed into the bark-ſtove, and plunged into the tan-bed. In winter theſe plants require to be kept very warm, and at that ſeaſon they muſt not have much water, but in ſummer it muſt be often repeated.

Theſe plants are too tender to thrive in the open air in this country, even in the hotteſt part of the year; therefore they ſhould conſtantly remain in the ſtove, obſerving to let in a large ſhare of freſh air in ſummer, but in winter they muſt be kept warm; with this management the plants will produce their flowers, and make a beautiful appearance in the ſtove, amongſt other tender exotic plants.

[The ſecond ſpecies, which we now have in our ſtoves, if it be really different from the firſt, may however be treated in the ſame manner.

Though it will not ſucceed well in the winter, nor be eaſily propagated unleſs in a ſtove, yet it will flower very well during the ſummer months, in a good green-houſe or hot-bed frame. It is eaſily increaſed by layers and cuttings, as well as ſeeds[h].

FUCOIDES. See *Fucus.*

FUCUS (*of Pliny. Hence* fucare, *to dye or paint, ſome of the Fuci or Sea-weeds being uſed for this purpoſe.*)

Claſſ. 24. 3. Cryptogamia Algæ.
Lin. gen. n. 1205. *Schreb.* 1671.

GENERIC CHARACTER.

MALE. *Veſicles* ſmooth, hollow, with villoſe hairs within, interwoven.

FEM. *Veſicles* ſmooth, filled with gelly, ſprinkled with immerſed grains prominent at the tip. *Seeds* ſolitary.

This genus comprehends moſt of thoſe plants which are commonly called *Sea-weeds.* Fifty-eight ſpecies are enumerated in the fourteenth edition of Syſtema Vegetabilium.—Sixty-eight Britiſh ſpecies, beſides many varieties, are enumerated in Dr. Withering's Botanical Arrangements.

They may all be uſed to manure land, or they may be burnt to make kelp, which is an impure foſſil alkali. Many of them make very beautiful ſpecimens for the herbarium, and are often ſeen diſpoſed on paper ſo as to form a ſort of picture.

Some of the ſpecies are eaten, either freſh out of the ſea, or boiled tender, with butter, pepper and vinegar: as *Fucus ſaccharinus, digitatus, palmatus,* &c. If the firſt of theſe be waſhed in ſpring water, and then hung up in a warm place, a ſubſtance like ſugar exſudes from it. The laſt is called by the

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[a] Lamarck.
[b] Curtis.
[c] Hort. kew.
[d] Curtis.
[e] Linn. ſuppl.
[f] Forſt. gen.
[g] Swartz.
[h] Curtis.

Iriſh *Dulleſh*; by the Scotch *Dills*; in Northumberland *Dulls* or *Dulſe*. Being ſoaked in freſh water, it is eaten either boiled or dried, and in the latter ſtate has ſomething of a violet flavour. It is ſold in the ſtreets of Dublin, being dried, and is ſaid to ſweeten the breath, and to kill worms. The poor in the north of Ireland eat it boiled.

Concerning the fructification and mode of propagation of theſe and other marine plants, ſee Reaumur in act. gall. 1711. Gmelin hiſt. Fucorum. Gærtner de fructibus & ſeminibus. And Figures and Deſcriptions of Marine Plants, by Thomas Velley, Eſq.

Fucus. See *Conferva*, *Lichen*, *Ruppia*, *Tremella*, *Ulva*, *Zoſtera*.

FUIRENA. (*So named by Rotböll in memory of George Fuiren, a learned Dane.*)

Lin. gen. Schreb. n. 90. *ſuppl.* 11. *nov. gen. gram.* 25. *Rottb. gram.* 70. *Juſſ.* 26.

Claſſ. 3. 1. Triandria Monogynia.

Nat. order of *Calamariæ*.—*Cyperoideæ*. Juſſ.

GENERIC CHARACTER.

Cal. *Ament* oblong, cylindric, imbricate: *ſcales* channelled, wedge-ſhaped, three-keeled, awned at the tip: *awn* cylindric, ſtraight, ſhorter than the glume. *Flowers* between the ſcales, ſolitary, very ſmall, ſitting on a tubercle. *Glume*, beſides the amentaceous ſcales, none.

Cor. *Glume* three-valved; *valves* petal-ſhaped, obcordate, ſomewhat membranaceous, flat, quite entire, ending in an awn that is bent in.

Stam. *Filaments* three, linear, inſerted into the receptacle between the corolline valves. *Anthers* linear, erect.

Pist. *Germ* large, three-cornered. *Style* filiform. *Stigmas* two, revolute.

Per. none, except the withered corolla, incloſing the ſeed.

Seed three-cornered, naked, without any villoſe hairs.

ESSENTIAL CHARACTER.

Ament imbricate, with awned ſcales. *Cal.* none. *Cor.* with three petal-ſhaped obcordate glumes, ending in a tendril.

SPECIES.

1. Fuirena paniculata.

Lin. ſyſt. 102. *ſuppl.* 105. *Rottb. gram.* 70. *t.* 19. *f.* 3. *Lamarck encycl.* 566.

Scirpus caule pentagono, ad nodos florida. *Sloan. jam.* 1. 121?

DESCRIPTION, &c.

This is a lofty Graſs. Leaves on the ſtem, with looſe, pitcher-ſhaped, hairy ſheaths. Panicles terminating and axillary, compoſed of cylindric, ſcabrous ſpikelets [a]: theſe are oblong, about three lines in length, conglomerate, blackiſh, imbricate with obovate, concave, rigid ſcales, having three keels uniting at top into an awn. It has the appearance of a Scirpus [b].—Native of Surinam, where it was obſerved by Rolander, and of Jamaica.

Fumana. See *Ciſtus*.]

FUMARIA. (*Becauſe it affects the eyes, like ſmoke; hence alſo its Greek name,* Καπνος.)

Engl. *Fumitory*. Fr. *Fumeterre*.

Lin. gen. n. 849. *Reich. n.* 920. *Schreb. n.* 1154. *Tournef.* 237. *Juſſ.* 237. *Gærtn.* 115. *f.* 2. Capnoides. *Tournef.* 237. *Gærtn.* 115. *f.* 3. Cyſticapnos. *Boerh.* 1. 310. *Gærtn.* 115. *f.* 1. Corydalis. *Dillen. gen.* 7. Bicucullatu. *Juſſ. act. gall.* 1733.

Claſſ. 17. 2. Diadelphia Hexandria.

Nat. order of *Corydales*.—*Papaveraceæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* two-leaved: *leaflets* oppoſite, equal, lateral, erect, acute, ſmall, deciduous.

Cor. oblong, tubular, ringent, palate prominent, cloſing the throat.

Upper lip flat, obtuſe, emarginate, reflex. (*The Banner.*)

Nectary the baſe of the upper lip prominent backward, obtuſe.

Lower lip entirely ſimilar to the upper, keeled towards the baſe. (*The Keel.*)

Nectary the keeled baſe, but in this leſs prominent.

Throat four-cornered, obtuſe, perpendicularly bifid. (*The Wings.*)

Stam. *Filaments* two, equal, broad, one within each lip, incloſed, acuminate. *Anthers* three at the end of each filament.

Pist. *Germ* oblong, compreſſed, acuminate. *Style* ſhort. *Stigma* orbiculate, erect, compreſſed.

Per. *Silicle* one-celled.

Seeds roundiſh.

Obs. *The ſtamens are almoſt the only part of the fructification obſerved to be conſtant in this genus.*

Fumaria offic. *has a roundiſh ſilicle, frequently with only one ſeed, and deciduous.* 11 to 14.

Pſeudo-Fumaria Riv. *has an ovate-acuminate, two-valved ſilicle, with a receptacle like a thread interpoſed between the ſutures on both ſides.* 5.

Capnoides *Tourn. has a very long ſilicle, almoſt cylindric, two-valved, with the receptacle as in the foregoing.* 9.

Cyſticapnos *Boerh. has a two-valved pericarp, within a very large inflated calyx.* 15.

Capnorchis *Boerh. The nectary of the lower lip is as prominent as that of the upper.* 1.

ESSENTIAL CHARACTER.

Cal. two-leaved. *Cor.* ringent. *Filam.* two, membranaceous, with three anthers on each.

SPECIES.

* *Corollas with two ſpurs.*

1. Fumaria Cucullaria. *Naked-ſtalked Fumitory.*

Lin. ſpec. 983. *Reich.* 3. 376. *mant.* 437. *hort. cliff.* 351. *Gron. virg.* 103. *Corn. canad.* 127. *Pluk. alm. t.* 90. *f.* 3.

Capnorchis americana. *Boerh. lugdb.* 1. 309.

Bicucullata canadenſis, rad. tuberoſa ſquamata. *Act. gall.* 1733.

Scape naked.

[2. Fumaria ſpectabilis.

Lin. ſpec. 983. *Reich.* 377. *amœn.* 7. *t.* 7. *Gmel. ſib.* 4. 63. *n.* 90.

Flowers two-lobed behind, ſtem leafy.

3. Fumaria fungoſa. *Spongy-flowered Fumitory.*

Ait. hort. kew. 3. 1.

Flowers bigibbous at the baſe; ſiliques linear, ancipital, covered by an inflated fungous corolla, leaves climbing.

* * *Corollas with one ſpur.*

4. Fumaria nobilis. *Great-flowered Fumitory.*

Lin. ſyſt. 636. *Reich.* 377. *Gmel. ſib.* 4. 66. *t.* 34. *Jacqu. hort.* 2. 53. *t.* 116. *Gærtn. fruct.* 2. 163.

Stems ſimple, bractes ſhorter than the flower, undivided.]

5. Fumaria bulboſa. *Bulbous Fumitory.*

Lin. ſpec. 983. *Reich.* 378. *mat. med.* 168. *hort. cliff.* 351. *fl. ſuec. n.* 631. *Scop. carn. n.* 864. *Crantz. auſtr.* 435. *Allion. pedem. n.* 1083. *Villars dauph.* 3. 385.

α. F. bulboſa cava. *Lin. ſpec. fl. ſuec.* γ. *Hollow-rooted Bulbous Fumitory.*

F. bulboſa. *Neck. gallob.* 298. *Krock. ſileſ. n.* 1136. *t.* 35. *Hall. helv. n.* 348. *Dalech. hiſt.* 1293. *Tabern.* 92. *f.* 1—8.—major. *Leers herborn. n.* 548. *Fl. dan. t.* 605. *Blackw. t.* 534.—rad. cava major. *Bauh. pin.* 143. *Raii hiſt.* 975.—fl. purpuraſcente & albo. *Bauh. hiſt.* 3. 204. *f.* 2.

F. cava. *Mill. dict. n.* 7. *Curtis magaz. t.* 232.

F. altera. *Camer. epit.* 891. *Matth.* 722.

Pſeudo-Fumaria. *Rivin. tetr. t.* 72.

Radix cava. *Dod. pempt.* 326.—major. *Cluſ. hiſt.* 1. 271.—purpurea & alba. *Ger.* 931. *f.* 1, 2. *emac.* 1090. *f.* 1, 2.—fl. albo & carneo. *Park. parad.* 275. *n.* 1, 2. 279. *f.* 1. *Mor. hiſt.* 2. 261. *f.* 3. *t.* 12. *f.* 6.

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[a] Linn. ſpec.

[b] Rottb.

Piſtolochia. *Fuchſ. hiſt.* 91.
β. F. bulb. intermedia. *Lin. ſpec.* & ſuec. β.
F. bulboſa. *Pollich. pal. n.* 662.
F. bulb. minor. *Tabern. hiſt.* 94.—tuberoſa minor, rad. non cava. *Mor. hiſt.* 2. 261. *ſ.* 3. *t.* 12. *f.* 8.
F. bulb., rad. non cava minor. *Bauh. pin.* 144.
Radix cava minor. *Dod. pempt.* 327.
γ. F. bulb. ſolida. *Lin. ſpec.* γ.—& fl. ſuec. α. *Hall. helv. n.* 349. *Solid-rooted Bulbous Fumitory.*
F. bulboſa. *Mill. dict. n.* 8.—minor. *Leers herborn. n.* 549.—rad. non cava major. *Bauh. pin.* 144.—rad. ſolida, calcari & fol. criſtato. *Bauh. hiſt.* 3. 205. *Raii hiſt.* 975.
F. ſolida. *Curtis magaz. t.* 231.
F. bulboſa β. *Krock. ſileſ. n.* 1137.
F. bulb. viridis. *Tabern. hiſt.* 94.
Radix cava viridi flore. *Lob. ic.* 760. *Bauh. hiſt.* 3. 205. *f.* 1. *Mor. f.* 7.
Stem ſimple, bractes the length of the flowers.

6. Fumaria ſempervirens. *Glaucous Fumitory.*
Lin. ſpec. 984. *Reich.* 379. *hort. upſ.* 207. *cliff.* 352. *Mill. fig. t.* 78. (Capnoides.)
F. glauca. *Curtis magaz. t.* 179.
F. ſiliquoſa ſempervirens. *Corn. canad. t.* 57. *Mor. hiſt.* 2. 259. *ſ.* 3. *t.* 12. *f.* 1.
Siliques linear, panicled, ſtem erect.

7. Fumaria lutea. *Yellow Fumitory.*
Lin. ſyſt. 637. *Reich.* 379. *mant.* 258. *Mill. illuſtr. Bauh. pin.* 143. *Ger.* 928. 4. *emac.* 1088. 4.—montana. *Dalech. hiſt.* 1294. *Park. theat.* 287. 4. *Mor. hiſt. t.* 12. *f.* 4.
F. Capnoides. *Mill. dict. n.* 4. *fig. t.* 136. *f.* 1.
F. tingitana. *Pluk. alm. t.* 90. *f.* 2.
F. quæ Split dicitur. *Bauh. hiſt.* 3. 203. *f.* 2. *Raii hiſt.* 974.
Capnoides lutea. *Gærtn. fruct.* 2. 163.
Pſeudo-Fumaria flore luteo. *Riv. tetr. t.* 74.
Siliques cylindric; ſtems diffuſed, angles obtuſe.

[8. Fumaria ſibirica. *Siberian Fumitory.*
Lin. ſyſt. 637. *ſuppl.* 314.
F. tenuifolia, flor. luteis. *Amm. rar.* 173. *t.* 20.
Siliques oval, ſtems patulous, leaflets oblong.]

9. Fumaria Capnoides. *White-flowered Fumitory.*
Lin. ſpec. 984. *Reich.* 379. *Hall. helv. n.* 347. *Scop. carn. n.* 865. *Herm. lugdb.*
F. alba. *Mill. dict. n.* 3.
Siliques linear, four-cornered, ſtems diffuſed, acute-angled.

10. Fumaria enneaphylla.
Lin. ſpec. 984. *Reich.* 380. *Bocc. muſ.* 2. 83. *t.* 73. *Raii ſuppl.* 475. *Barrel. ic.* 42.
Leaves triternate, leaflets cordate.

11. Fumaria officinalis. *Common Fumitory.*
Lin. ſpec. 984. *Reich.* 380. *mat. med.* 168. *hort. cliff.* 252. *fl. ſuec. n.* 630. *Hudſ. angl.* 309. *With.* 751. *Curtis lond.* 2. 52. *Lightf. ſcot.* 379. *Hall. helv. n.* 346. *Neck. gallob.* 298. *Scop. carn. n.* 866. *Pollich. pal. n.* 663. *Krock. ſileſ. n.* 1139. *Allion. pedem. n.* 1085. *Blackw. t.* 237. *Mill. fig. t.* 136. *f.* 2. *Woodv. med. bot.* 241. *t.* 88. *Villars dauph.* 3. 386.
Fumaria. *Fuchſ. hiſt.* 338. *Camer. epit.* 890. *Riv. tetr. t.* 1. *Matth.* 1158.—officinarum & Dioſcoridis. *Bauh. pin.* 143.—vulgaris. *Bauh. hiſt.* 3. 201. *Park. theat.* 287. 1. *Raii hiſt.* 405. *ſyn.* 284.—purpurea. *Ger.* 927. 1. *emac.* 1088. 1.—latifolia. *Mor. hiſt. t.* 12. *f.* 9.
Capnos. *Lob. ic.* 1. 757. 1.
Pericarps one-ſeeded, racemed, ſtem diffuſe.

12. Fumaria capreolata. *Ramping Fumitory.*
Lin. ſpec. 985. *ſyſt.* 637. *Reich.* 380. *Gærtn. fruct.* 2. 162. *Hudſ.* 309. 1. β. *With.* 752. *Krock. ſileſ. n.* 1140. *Lightf. ſcot.* 380. *Relh. cant. n.* 510. β. *Ger. prov.* 293. 2. *var.* 2. *Fl. dan.* 340.
F. viticulis & capreolis plantis vicinis adhærens. *Bauh. pin.* 143.
F. major ſcandens, flore pallidiore. *Raii hiſt.* 405. *ſyn.* 204.
Pericarps one-ſeeded, racemed, leaves climbing, ſubcirrhoſe.

13. Fumaria ſpicata. *Narrow-leaved Fumitory.*
Lin. ſpec. 985. *ſyſt.* 637. *Reich.* 380. *Sauv. monſp.* 263. *Villars dauph.* 3. 387.
F. minor tenuifolia. *Mor. hiſt. f.* 11.—caulibus procumbentibus & caducis. *Bauh. pin.* 143. 3.
β. F. fol. tenuiſſimis, flor. albis, circa Monſpelium. *Bauh. pin.* 143. 1. *Segu. veron.* 2. 111.
F. tenuifolia erecta hiſpanica purpurea. *Barr. ic.* 41.
F. minor tenuif. præcox, ſemine lini. *Mor. hiſt.* 2. 262. *ſ.* 3. *t.* 12. *f.* 13.
F. minor ſ. tenuif. ſurrecta. *Bauh. hiſt.* 3. 203. *f.* 1. *Raii hiſt.* 406. *Park.*
Capnos tenuifolia. *Cluſ. hiſt.* 2. 208. *Lob.*
Pericarps one-ſeeded, ſpiked, ſtem erect, leaflets filiform.

14. Fumaria claviculata. *Climbing Fumitory.*
Lin. ſpec. 985. *ſyſt.* 637. *Reich.* 381. *hort. cliff.* 351. *Hudſ. angl.* 309. *With.* 753. *Lightf. ſcot.* 380. *Fl. dan. t.* 340. *Bauh. pin.* 143. 6. *Mor. ſ.* 3. *t.* 12. *f.* 3. *Sowerby engl. bot. t.* 103.
F. alba latifolia. *Park. theat.* 288. 6. *Raii hiſt.* 974. *ſyn.* 335. *Ger.* 929. *f.* 5, 6.—claviculata. *Ger. emac.* 1088. 2.
F. cum capreolis. *Bauh. hiſt.* 3. 204. *f.* 1. *Mor. hiſt. t.* 12. *f.* 3.
Siliques linear, leaves tendril-bearing.

15. Fumaria veſicaria. *Bladdered Fumitory.*
Lin. ſpec. 985. *Reich.* 381. *hort. upſ.* 207. *cliff.* 351. *Pluk. alm. t.* 335. *f.* 3.
Cyſticapnos africana. *Gærtn. fruct.* 2. 161.—ſcandens. *Boerh. lugdb.* 1. *t.* 310.
Siliques globular, acute, inflated, leaves cirrhoſe.

DESCRIPTIONS, &c.

[The leaves are many-parted, ſometimes biternate, and the end of the rachis cirrhoſe. The flowers are in terminating ſpikes[a].

In their flower and fruit they have a great affinity with papilionaceous plants, although that affinity is not very obvious at firſt ſight: and ſome parts of the ſtructure are peculiar to the genus. Thus the poſterior part of the corolla terminates in a nectary like that of the Violet. But the part in which Fumitory differs moſt from the papilionaceous flowers is the calyx, which conſiſts of two ſmall lateral leaves, more like ſtipules. The ſeed-veſſel in ſome ſpecies has not much reſemblance to thoſe of the papilionaceous tribe; and hence Ray divided the genus[b].]

1. Root ſcaly, the ſize of a large hazel nut. Flower-ſtalk eight or nine inches high. [Root-leaves in pairs, triternate, gaſhed, ſmooth, ſlender; with red petioles. Scape ſimple, round, length of the leaf, rufous. Raceme terminating, ſimple, the flowers (four or five) pendulous; pedicels one-flowered, with a pair of bractes to each, oppoſite, ovate, ſharp, red, ſmall, approximating to the flower: calyx ovate, preſſed cloſe, ſmall, white: corolla white; border yellow, two-lipped; lips equal, concave, reflex, ovate, entire; throat cloſed, yellow, the ſides widened at the edge, and moiſtened with nectareous juice: ſpurs equal, diſtant, ſomewhat compreſſed, nearly the length of the corolla: filaments on each ſide three diſtinct. Native of Virginia and Canada. Perennial[c]. It flowers in june and july; and was cultivated by Mr. Miller in 1759[d].

2. This is a fine plant, with very large, handſome flowers. It has the air of *F. bulboſa*, but is bigger in all its parts. The branches proceed from the axils of the leaves, and are but few. Stem erect. The raceme has no bractes. The corolla is the ſize of the laſt joint of the thumb, divided at the back of it into two equal rounded lobes. Native of Siberia[e].

3. Annual.—Native of North America. It flowers from june to ſeptember. Introduced about 1778, by John Fothergill, M. D.[f]

[a] Juſſieu.
[b] Curtis.
[c] Linn. mant.
[d] Hort. kew.
[e] Linn. ſpec.
[f] Hort. kew.

4. Perennial. Very like the next ſpecies, but much larger. Root-leaves ſeven to nine, a ſpan in length, bipinnate. Scapes one or two, oblique, five-cornered. Stem-leaves four, ſeſſile, compound. Raceme very blunt; the flowers directed one way. Bractes ovate-lanceolate, entire. Flowers double the ſize of thoſe in *F. bulboſa*, white, with a yellow border, ſmelling like Cowſlips; the lips neither emarginate nor ſerrate; throat black at the tip; calyx minute, toothed[g]. Capſule when ripe herbaceous, thin, friable. Seed large, lenticular-beaked, very ſmooth, dark and ſhining[h]. Native of Siberia.—It flowers in may. Introduced 1783, by Mr. John Græfer[i].

5. Theſe plants are united ſpecifically by a fleſhy, ſimple root. In variety β. the plants of the firſt year produce entire bractes, which in the following ones become cloven. Buds radical, two, three-valved. Stem ſimple, ſomewhat angular, with a ſingle branch; ſtructure of the leaves decompound; raceme terminating, ſolitary, with bractes between the flowers. Calyx and corolla, &c. very ſmall[k].

α and β, according to Reichard, are two diſtinct ſpecies, not altered by culture. γ. belongs to α, the roots being indifferently hollow or ſolid: α alſo varies with a white flower.

Linneus informs us that the three varieties are all natives of Sweden, but in different provinces; the firſt in Scania, both with a red and a white flower; the ſecond in moſt of the woods of Upland; and the third on the coaſts of Roſlag and Finland.—They may be thus diſtinguiſhed—α has a hollow root, and entire bractes; β a ſolid root, and entire bractes; γ a ſolid root, and gaſhed bractes: the hollow and ſolid-rooted Fumitory never are ſeen together, for they affect different ſoils; the former flowers fourteen days later, and the latter has entire bractes the firſt year. But there are many characteriſtic and eſſential marks common to them all, which are hardly to be found in the other ſpecies of this genus. Thus the calyx in theſe is ſcarcely viſible to the naked eye: the root is a bulb, fibrous at bottom, gemmiparous at top: the ſtem is ſimple without branches, except that a ſingle one ſometimes comes out from the uppermoſt ſcale of the bud: there are commonly two or three leaves on the ſtem: there is a gemmeous membrane from the root, incloſing the plant before it unfolds: and laſtly, a broad leafy bracte under each flower[l].

Others make only two varieties, or perhaps ſpecies, ſuppoſing that α and β are one and the ſame: the root at firſt nearly globular, ſolid, and putting forth fibres from every ſide; becoming afterwards hemiſpherical, and hollow underneath; only two leaves on the ſtem; bractes quite entire, ſhorter than the flowers; corollas either white or purple.—γ. The other has the bulb of the root ſmaller, always ſolid, and obovate, putting forth fibres only at the baſe; leaves more numerous, (four to ſix) uſually more tender and narrower; bractes cloven like parallel fingers, the length of the flowers; corollas purple, ſmaller than the others; and the whole plant lower. Tranſplanted into a garden with the former, it did not in ten years acquire any hollowneſs in the root, nor did the cloven bractes ever become entire[m].—According to Curtis, the ſolid-rooted Fumitory rarely exceeds three or four inches in height, and produces its ſpike of purple flowers in april; it does not vary much in colour. The hollow-rooted Fumitory has a much larger root, hollow like a ſhell; the plant grows to twice the ſize of the other, and bears a foliage and flowers proportionably larger; the bractes, which in that aſſume a kind of fingered appearance, in this are entire, or but ſlightly indented; and it flowers about three weeks earlier. There are three principal varieties of it in point of colour—white, bluſh-coloured and purple.

[As this ſpecies is found in moſt parts of Europe from Sweden to Italy, Linneus remarks, as a ſingularity, that it does not grow wild in England. I gathered the hollow-rooted variety in Savoy on the 15th of march, 1779, in flower. In our gardens they appear early in april. Cultivated in 1596, by Gerarde[n].]

Mr. Miller ſays that the ſolid-rooted Bulbous Fumitory is common in many of our old gardens, but that the hollow-rooted one is now rarely to be found in them. He gives them as diſtinct ſpecies.

6. Annual. Stem upright, a foot and half high, round, and very ſmooth, ſending out ſeveral branches at top. Leaves ſmooth, branching, pale, divided like the common ſort, but the leaflets larger and more obtuſe. Flowers in looſe panicles from the ſides of the ſtem, and at the extremities of the branches, of a pale purple colour, with yellow chaps or lips. Pods taper, narrow, an inch and half long, containing many ſmall black ſhining ſeeds. It flowers during ſummer.

[Native of North America. Cultivated in 1683, by Mr. James Sutherland[o].

7. This is very like the ninth ſpecies, but it is perennial. The ſpur of the corolla is rounded, and ſhorter by half than the tube. The racemes have no bractes[p].]

Mr. Miller adds, that the ſtalks of this have blunt angles, whereas thoſe of the ninth are acute; that they are of a purpliſh colour; and that the flowers grow in a looſer panicle, on longer pedicels.

[The root ſtrikes deep into the ground. Stems many, ſucculent, diffuſed, about ſix inches high. Leaves on long, branching petioles, compoſed of many irregular leaflets, trifid at the top. Peduncles axillary, naked, longer than the leaves, ſupporting eight or nine flowers, of a bright yellow colour, in a looſe ſpike. The leaves continue green all the year, and the flowers in ſucceſſion from april to october; ſo that this ſpecies deſerves a place in every garden. It is peculiarly proper for rock-work, old walls and buildings, in which the ſeeds often lodge of themſelves, being thrown to a conſiderable diſtance by the elaſticity of the pods[q].

Native of Barbary. Cultivated 1596, by Gerarde[r].

8. Annual. Stems herbaceous, branching, five-cornered, brittle. Leaves alternate, ſuper-decompound, with oblong leaflets. Flowers yellow. Pods oval, compreſſed, ſmooth, ſomewhat elaſtic. Native of Siberia[s].

9. Annual. Stem four-cornered at the baſe. Leaves ſuperdecompound, the terminating leaflets larger, and ſemitrifid; the middle ſegment lobed; petioles three-cornered. Racemes naked. Pedicels ſhorter by half than the corollas, blackiſh at the tip. Corollas whitiſh, with the wings yellow at the tip, and drawn to a point: filaments two, with two anthers only on each, cloſe to the ſtigma when in full perfection, and full of orange-coloured pollen: ſtyle cylindric, ſlender, with a bent ſtigma[t].

There is a ſucceſſion of the flowers from may to october: and this, as well as the ſeventh, is proper for walls, old buildings and rock-work.—Native of the South of Europe. Cultivated in 1596, by Gerarde[u].]

10. This has weak trailing ſtems, which are much divided, and leaflets divided into three parts, each of which has three heart-ſhaped lobes: the flowers are produced in ſmall looſe panicles from the ſide of the ſtalks; they are of a greeniſh white, and appear moſt of the ſummer months.

Native of Spain and Italy, upon old walls and in rocky places.

11. [*Root* annual. *Stems* from nine to ſeventeen inches in height, ſpreading, angular, enlarged at the joints, branched, ſmooth, tender, and ſomewhat

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[g] Linn. ſyſt. [h] Gærtner. [i] Hort. kew.
[k] Linn. ſpec. [l] Linn. ſuec.
[m] Leers, Krocker, Haller.

[n] Hort. kew. [o] Ibid. [p] Linn. mant. & ſyſt.
[q] Mill. fig. [r] Hort. kew. [s] Linn. ſuppl.
[t] Scopoli. [u] Hort. kew.

flexuoſe. *Leaves* alternate, petioled, glaucous, ſmooth, ſomewhat fleſhy, ſuperdecompound, the laſt diviſion bifid or trifid, the extreme ſegments lanceolate. *Flowers* alternate, in very long ſpikes, on very ſhort pedicels, under each of which is a lanceolate, membranaceous bracte, purple at top. The calyx has little teeth about the edges. Corolla reddiſh, tipped with deep purple, ſometimes pale purple or white[x].

It is a common weed in corn fields, gardens, and on ditch banks; flowering from april to auguſt and even later.

Kine and ſheep eat it: to the latter it is accounted ſalubrious.

The leaves are ſucculent, ſaline and bitter. The expreſſed juice in doſes of two or three ounces, with whey is uſeful in hypochondriacal, ſcorbutic and cachectic habits. It corrects acidity, and ſtrengthens the tone of the ſtomach. Hoffman prefers it to all other medicines as a ſweetener of the blood. There is no doubt of its utility in obſtructions of the viſcera, and the diſeaſes ariſing from them. The celebrated Boerhaave frequently preſcribed it in the black jaundice and bilious cholics. An infuſion of the leaves is uſed as a coſmetic to remove freckles, and clear the ſkin; and Dr. Cullen has experienced its good effects in many cutaneous diſorders, which may be called *Lepra*[y].

12. This ſeems to be nothing more than a variety of the foregoing. Mr. Hudſon can perceive no difference except in the colour of the flowers, which in this is white with a purple tip. It climbs, not by tendrils, but by the bending or twiſting of the petioles, but Louis Gerard attributes this wholly to its ſituation in hedges or among buſhes. Dr. Stokes however has obſerved the ſtem ſometimes trailing, and interweaving its branches among the graſs, very much branched, ſometimes three feet long, the bloſſoms pale red. The ſtems are longer and weaker; the leaves more diſtant, and not ſo finely divided, the extreme diviſions broader and blunter than the foregoing: the ſpikes of flowers are on longer peduncles, but with fewer flowers on a ſpike[z]. All theſe differences may alſo be owing to ſituation.

Krocker has deſcribed this plant very minutely, and ſays particularly that the ſtems are remarkably weak, and the ends of the branches finer than a briſtle, that the caſe is the ſame with the petioles and rachis of the leaves, and peduncles of the flowers; that theſe fine extremities twiſt about neighbouring ſhrubs, graſs or other plants, and keep ſuch faſt hold as to be ſeparated with difficulty; but that real tendrils are ſeldom or ever to be found, or if there be any ſuch, they are very ſhort, weak and uſeleſs. Conſidering that the ſubſtance of the whole plant is more tender than in the foregoing; the ſtem more diffuſed, twiſting at the extremities, and never ſtanding erect of itſelf; the racemes almoſt always lateral and very ſhort; the flowers very ſmall, whitiſh, and green only at the tip; the partial peduncles thicker than the common ones; the leaves on longer petioles, larger and more tender, with their rachis or common petiole twiſted and doing the office of tendrils, and even ſometimes terminating in real tendrils; he is rather inclined to think that this is a diſtinct ſpecies. It differs from *F. claviculata* in the abſence of genuine tendrils; and in having three-lobed leaves, the lobes bifid or trifid; whereas thoſe of *F. claviculata* are pinnate, the pinnas entire, and ſmaller than in this ſpecies.

Native of Provence, Sileſia, and Britain. Linneus remarks, as a ſingularity, that this does not occur in Sweden, where the foregoing is very common, not only in corn fields, but among buſhes.]

13. Annual. The ſtalks more erect than in the common ſort; the leaves are very finely divided, and the flowers grow in a looſe ſpike; they are of a deep red colour, and appear about the ſame time.

[The flowers grow very cloſe together in the ſpike; and the leaves are glaucous[a].

This plant is minutely deſcribed by Ray, who was well acquainted with it in its place of natural growth.—Root ſlender, ſimple, white, ſtraight, with few fibres, bitter and hot. Stems many, the middle one larger and firmer than the reſt, about nine inches in height, ſtreaked, hollow. Spikes of flowers ſhort and thick, opening one after the other from the bottom upwards, beautiful with a variety of colours, light and dark purple, greeniſh yellow, white and fleſh-colour. Seeds flatted like thoſe of flax, ſmooth and ſhining. The leaves are ſmaller than in the other ſpecies, like Camomile: thoſe that proceed from the root are on longer petioles, but the ſegments are ſhorter; thoſe on the ſtem have ſhorter petioles but longer ſegments. Both ſtems and leaves are covered with a glaucous bloom. There is little or no bitterneſs in the leaves.

Linneus ſuſpects that this may be a hybridous plant; and is of opinion, that whoever ſhall determine this and the following to be varieties of the 11th or common Fumitory can hardly err; the fruit indicating that they are one and the ſame.

Native of Spain, Portugal, Italy, and the South of France.—Cultivated here in 1714[b]. It flowers with us in july and auguſt. Ray ſays it flowers in ſummer, whereas Linneus aſſerts that the flowers are vernal.

14. *Root* annual. *Stems* three-cornered, ſlender, and unable to ſupport themſelves, purpliſh at the baſe. *Leaves* glaucous, paler beneath, pinnate, terminated by branched tendrils; leaflets two to five, inverſely ovate, ovate-lanceolate or lanceolate, ending in a ſharp flexible point, alternate, petioled. *Flowers* few (about five, ſeldom more than two coming to perfection) in ſhort terminating ſpikes, corolla pale, greeniſh white or ſtraw coloured. Seeds generally three, in oblong, pointed, ſmooth pods[c].

Native of Denmark and Britain, in woods and moiſt hedges, boggy and rocky places in a ſandy ſoil, on the banks of lakes and rivers, and on the thatch of cottages. As on Blackheath and about Charlton and Greenwich. At Snareſbrook near Woodford, Eſſex. On the banks of the Trent near Ouſeley in Staffordſhire. In the hedges between Bala in Merionethſhire and Pimble-mear. Above Great Malvern tower. About Birmingham. Rocks of Stonehall, near Rawdon, ſeven miles from Leeds. Thorpe near Norwich. In the quarries at Inner-Keith, in Scotland. Near Whitwick in Leiceſterſhire. Kendal in Weſtmoreland. Flowering from the end of may to the end of july.]

15. This is an annual plant, with trailing ſtalks, which are two or three feet long, dividing into many ſmaller ones, with ſmall branching leaves, like thoſe of common Fumitory, but ending in tendrils. Flowers in looſe panicles, from the ſide of the ſtalks, of a whitiſh yellow colour.

[The terminating leaflets are protracted into tendrils. Peduncles oppoſite to the leaves, bearing one to four flowers. Siliques ovate, large, inflated, pendulous—or rather, lanceolate, covered with a hollow, berried pericarp[d].

It is thus, more accurately, deſcribed by Gærtner: Pericarp double, compoſed of the rind or outer involucre, ariſing from the germ itſelf, and of the capſule within the involucre. Involucre large, ſomewhat leathery, inflated, globular, acuminate at the end, two-valved; the valves cohering with the capſule by means of a thready cellular ſubſtance. Capſule placed in the axis of the involucre, oblong, acuminate to both ends, a little flatted, membranaceous in the middle, very thin, diaphanous, but at each ſide thickened, ſuberous, opake, one-celled, valveleſs, burſting irregularly by the involucre when it opens. Seeds numerous rounded-kidney-form, towards the navel ſlightly flatted, dark-coloured, very ſmooth and ſhining, fixed to the thickened edges of the capſule.

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[x] Woodw. Mſs. and Withering.

[y] Withering, Lightfoot, Haller, Woodw. Mſs.

[z] Woodw. Mſs.

[a] Linn.

[b] Hort. kew.

[c] Wither. Lightf. Woodw. Mſs. and Engl. bot.

[d] Linn. ſpec.

Native of the Cape of Good Hope. Cultivated in the Chelſea garden, in 1696. It flowers in july[d].]

PROPAGATION AND CULTURE.

1. This is propagated by offsets from the root; it loves a ſhady ſituation and a light ſoil; the beſt time to tranſplant the roots is in autumn, when the leaves are decayed, for it ſhoots pretty early in the ſpring, therefore it would not be ſafe to remove them at that ſeaſon.

4, 5. Are propagated by offsets, as other bulbous-rooted flowers; theſe are very pretty ornaments to borders in a ſmall flower-garden. They are extreme hardy, but do not increaſe very faſt, ſeldom producing ſeeds with us; and their bulbs do not multiply very much, eſpecially if they are often tranſplanted. They love a light ſandy ſoil, and ſhould be ſuffered to remain three years undiſturbed, in which time they will produce ſeveral offsets. The beſt ſeaſon for tranſplanting them is from may to auguſt, when the leaves begin to die off; for if they are taken up when the leaves are freſh, it will greatly weaken their roots.

6, 7, 8, 9, 10, 12, 13, 14. If the ſeeds of theſe are permitted to ſcatter, the plants will come up without any trouble, and require no other care but to thin them where they are too cloſe, and to keep them clean from weeds.

Theſe thrive beſt on old walls and buildings and on rocks; they ſcatter their ſeeds from their elaſtic pods, and require no care in the cultivation.

11. Is a common weed in gardens.

15. This is propagated by ſeeds, which ſhould be ſown upon a moderate hot-bed in the ſpring; and when the plants are fit to remove, they muſt be each planted in a ſmall pot filled with light earth, and plunged again into the hot-bed, where they muſt be ſhaded from the ſun till they have taken new root; after which they ſhould have a large ſhare of air admitted to them at all times in mild weather, to prevent their drawing up weak; and as ſoon as the ſeaſon is favourable, they ſhould be inured to bear the open air, to which they may be removed the beginning of june, when they may be ſhaken out of the pots, preſerving all the earth to their roots, and planted in a warm border, where their ſtalks ſhould be ſupported with ſticks to prevent their trailing on the ground; and in july the plants will flower, and continue a ſucceſſion of flowers till the froſt deſtroys the plants; the ſeeds ripen in autumn.

[FUMARIA BULBOSA. See *Adoxa*.

FUMITORY. See *Fumaria*.

———, Bulbous. See *Adoxa*.

FUNARIA. A genus of Moſs. *Schreb. gen. n.* 1650. The ſame with *Koelreutera* of Hedwig, *fund.* 2. 95. It contains ſome of Linneus's Mniums.

FUNGI. (*Fungus* from σπογγος, on account of its ſpongy nature.) *Muſhrooms.*—Cryptogamia Fungi, the laſt order in the laſt claſs of Linneus's ſyſtem, and kept together as one claſs under every arrangement.

We know ſo little yet about the fructification of Funguſſes, that we are obliged to take the characters from the general external form. It is evident, that they are vegetables, and produce ſeed, by which they have been propagated, and they ſeem to belong to the claſs Monoecia. Hedwig has made ſome important diſcoveries reſpecting the fructification of Funguſſus, by the uſe of high magnifiers; and thinks he has diſcovered ſtamens in the threads which appear on the edge of the cap or pileus, on the membrane or volva, or on the ſtem itſelf. The ſeeds are a dark powder in the gills of the Agarics; in the Boleti the ſeeds are within the membrane that lines the tubes; in Peziza cyathoides they appear to be incloſed in a ſort of pod. The black powder in the Lycoperdon and Mucor was taken for animalcules by Baron Munckhauſen, and thus the Fungi were on the verge of migrating into the claſs of Zoophytes. According to the Baron, theſe globules, which appear black, are ſemitranſparent, and contain a black particle. If they be mixed with water and kept in a warm place, they preſently ſwell, and are changed into ovate animalcules, that in a few days unite and form a maſs of a pretty firm texture, which is the Fungus.

Mr. Ellis however has ſhewn ſatisfactorily that the motion of theſe globules was occaſioned by a number of very minute animalcules feeding upon them, and theſe being much ſmaller than the globules, are difficult to detect, on which account the Baron ſeems to have overlooked them[a].

Many of the Fungus tribe are much eſteemed in foreign countries as a luxurious food, on account of their high flavour. We in England almoſt confine ourſelves to the Agaricus campeſtris, which we call excluſively Muſhroom, the Morell, and the Truffle: which are particularly treated of, under the articles AGARICUS, PHALLUS, and LYCOPERDON. In Ruſſia we are told that they are eaten almoſt indiſcriminately, ſalted and thus kept for winter uſe. That many have ſuffered diſeaſe, and ſome even death from eating voraciouſly or incautiouſly of Funguſſes is certain; it is doubtful however whether many of them be really poiſonous, in the ſtrict and proper ſenſe of the word[b]. A great variety of inſects feed on the different ſpecies, particularly the *larvæ* or maggots, of many of the *Muſcæ* or Fly genus[c]. Some Funguſſes have been found of conſiderable uſe in ſtopping external hæmorrhages; and the acrimonious qualities of others will probably at ſome future period be turned to good account[d].

For farther particulars of this tribe, ſee *Agaricus, Boletus, Clathrus, Clavaria, Helvella, Hydnum, Lycoperdon, Mucor, Octoſpora, Peziza, Phallus, Sphæria.*

FUNGI eſculenti. See *Phallus*.
——— parvi. See *Lichen byſſoides*.
FUNGILLI. See *Lichen ericetorum*.
FUNGOIDASTER. See *Helvella*.
FUNGOIDES. See *Agaricus, Clavaria, Helvella, Peziza*.
FUNIS crepitans. See *Ciſſus*.
——— murænarum. See *Melaſtoma*.
——— muſarius. See *Uvaria*.
——— quadrangularis. See *Meniſpermum*.
——— urens. See *Tragia*.
FU-RAN. See *Epidendrum*.

FUSANUS. (*From* Fuſain, *which is the French name for Euonymus or Spindle-tree.*)
Claſſ. 23. 1. Polygamia Monoecia.
Nat. order of *Elæagni*, Juſſieu 75.

GENERIC CHARACTER.

* *Hermaphrodite.*

CAL. *Perianth* one-leafed, turbinate, half-five-cleft (four-cleft, *Berg.*): *clefts* ovate-acute, from flat ſpreading, with the tips gibboſe-uncinate, ſomewhat concave.

COR. none.

STAM. *Filaments* four, linear, grooved in the middle, a little longer than the germ, inſerted into the calyx near it, and occupying the ſinus of it. *Anthers* roundiſh, compreſſed, four-lobed, erect.

PIST. *Germ* large, turbinate, almoſt inferior, wide at top, from flat ſomewhat concave, ſtriated, quadrangular, with four hollowed ſinuſes, each on each ſide of the germ ſolitary. *Style* thick, very ſhort, ſubquadrangular. *Stigmas* four, obtuſe cruciform, ſmall.

PER. Drupe.

* *Male.*

CAL. *&c.* as in the hermaphrodite, but the fruit abortive.

ESSENTIAL CHARACTER.

HERM. *Cal.* five-cleft. *Cor.* none. *Stam.* four. *Germ* inferior. *Stigmas* four. *Drupe.*

MALE. *Cal.* &c. of the former. *Fruit* abortive.

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[d] Hort. kew.

[a] Wither. arr. 3. 31. to 34. Philoſ. tranſ. 51. 138. Gentl. mag. for 1773. p. 316. Hedwig.

[b] Withering. [c] Curtis. [d] Withering.

SPECIES.

1. Fuſanus compreſſus. *Flat-ſtalked Fuſanus.*
Linn. ſyſt. ed. 13. 765. *Reich.* 4. 330. *Ait. hort. kew.* 3. 433.
Theſium Colpoon. *Linn. ſuppl.* 161. *ſyſt. ed.* 14. 250.
Colpoon compreſſum. *Berg. cap.* 38. *t.* 1. *f.* 1.

DESCRIPTION, *&c.*

This is a tree, with compreſſed and ancipital branches. Leaves oppoſite, obovate, blunt with a point, flat, quite entire, ſmooth, on ſhort petioles. Racemes from the axils of the branches, erect, compreſſed, ſcarcely longer than the leaves. The number of parts in the flower four or five[e]. The fruitful tree has a three-leaved involucre at the baſe of the germ with five glands[f].

According to Juſſieu, it is a glaucous ſhrub, with oppoſite branches. The leaves are ſuboppoſite, entire, and ſcarcely nerved. The flowers ſmall, in terminating panicles, ſome of them five-cleft, and moſtly males.

The younger Linneus ſees no neceſſity for ſeparating it from the Theſiums[g]. Juſſieu doubts whether it may not be more nearly allied to the Rhamni.

Native of the Cape of Good Hope. Introduced in 1766, by Mr. Francis Maſſon[h].

PROPAGATION AND CULTURE.

Increaſed by cuttings, planted early in the ſummer in a good loamy earth, in pots, ſet in a glaſs-caſe or hot-bed, ſhaded and watered gently till they have ſtruck root.]

FURZE. See *Ulex.*

[FUSTICK WOOD. See *Morus tinctoria.*]

G.

[GÆRTNERA. (*In memory of Joſeph Gærtner, M.D. F.R.S. Acad. Imp. Petrop. Memb. author of a moſt excellent work on the fruits and ſeeds of plants. Stutg.* 1788. *& Tub.* 1791. *qu.*)
Lin. gen. Schreb. n. 735.——Hiptage. *Gærtn. introd.* 129. *fruct.* 2. *t.* 116. Baniſteriæ ſp. *Sonnerat. it.* 2. *t.* 135.
Claſſ. 10. 1. Decandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-parted, permanent: *diviſions* oblong, obtuſe, ſpreading, nearly equal.

COR. *Petals* five, roundiſh, large, flat, ſpreading, torn and ciliate on the edge, nearly equal, with very ſhort claws.

STAM. *Filaments* ten, filiform, very ſlightly coaleſcent at the baſe; nine ſlender, erectiſh, ſhorter than the corolla, the tenth thicker, the length of the petal, bent in at top. *Anthers* parallelopiped, nine equal ſmall, the tenth on the longer filament a little larger.

PIST. *Germ* ſuperior, three-toothed, ſmall. *Style* filiform, lateral, bent in, the length of the greater ſtamen, permanent. *Stigma* ſharp.

PER. *Capſule?* woody, having four wings, one-celled. *Wings* lanceolate, widening towards the tip, obtuſe: one very large, upright; two ſmaller, patulous; the fourth very ſmall, aſcending.

SEED ſingle, roundiſh.

ESSENTIAL CHARACTER.

Cal. five-parted, the leaflets having on the outſide a ſingle marginal gland. *Cor.* five-petalled, ſomewhat unequal, toothletted, furniſhed with very ſhort claws. *Seed-veſſel* nearly globoſe, with four wings.

SPECIES.

1. Gærtnera racemoſa.
Vahl ſymb. 3. 58. *Roxb. corom.* 1. 19. *t.* 18.
Hiptage Madablota. *Gærtn. fruct.* 2. 169.
Baniſteria benghalenſis. *Lin. ſyſt.* 247. *fl. zeyl. n.*
Baniſteria tetraptera ſ. Madablota. *Sonner. it. ind.* 2. 238. *t.* 135. (very good).
Molina racemoſa. *Cavan. diſſ.* 9. *t.* 263.
Sida-poa. *Rheed. mal.* 6. *t.* 59. Koenig.
Vedal-chittoo of the Telingas.

DESCRIPTION, *&c.*

According to Rheede (in hort. malab.) four of the petals are white, and the fifth yellow. The ſeed-veſſel (Samara) is nearly globular, or inverſely parabolical, leathery, thin, of a yellowiſh bay colour, marked on the ſide with the rudiment of the ſtyle; on the top it has a ſmall triangular creſt, and on the edge it has three very long leathery wings of an ovate-lanceolate ſhape, the middle one larger than the others. Seed kidney-form-globular, wrinkled, gibbous, ferruginous-reddiſh[i].

It is a large climbing woody ſhrub, flowering in the wet and cold ſeaſon. It is cultivated all over the coaſt of Coromandel, on account of the beauty and fragrance of its flowers[k].

Native of the Eaſt Indies, in the Circar mountains. See *Baniſteria benghalenſis,* which is the ſame plant.

Gærtnera Pangati of Retzius, 6. *p.* 24. Pongati, hort. mal. 11. 24. is Sphenoclea zeylanica of Gærtner 1. 113. t. 24.

GAHNIA. (*So named by Forſter in honour of Henry Gahn, author of* Fundamenta Agroſtographiæ.)
Linn. gen. Schreb. n. 606. *ſuppl.* 31. *nov. gen. gram.* 34. *Forſt. gen.* 26. *Juſſ.* 27.
Claſſ. 6. 1. Hexandria Monogynia.

GENERIC CHARACTER.

CAL. *Glume* one-valved, ovate-lanceolate, convolute, two or five-flowered, *Forſter.*—two-valved, one-flowered: *valves* lanceolate, channelled, acuminate; the outer longer, broader, *L.*

COR. *Glume* two-valved, ſhorter than the calyx: *valves* ovate-lanceolate, acuminate, concave; the outer a little longer, *F.*

Nectary two-valved, hyaline, involving the filaments: *outer valve* larger, ovate, concave, three-toothed at the tip, *F.* (wedge-ſhaped with a point, *L.*) half the length of the corolline glume; *inner* ovate, entire, very ſmall.

STAM. *Filaments* ſix, capillary, ſhort, after flowering elongated. *Anthers* linear, acuminate.

PIST. *Germ* oblong. *Style* filiform, erect, longer than the calyx, bifid. *Stigmas* in each diviſion of the calyx two, capillary, curved back.

PER. none.

SEED ſingle, oblong, *F.* ſubangular, ſmooth, ſurrounded by the elongated filaments, ſo as to be double the length of the corolline glume, permanent, *L.*

OBS. *Flowers panicled. Calycine glumes in the loweſt panicles frequently none. Stamens in the flowers ſeven and eight, but the uppermoſt flowers are always ſix-ſtamened,* F.—*Allied to* Schoenus, *L. So much, that the genus ought probably to be aboliſhed.*

ESSENTIAL CHARACTER.

Glume two-valved, irregular. *Nect.* two-valved, involving the filaments. *Stigma* dichotomous.

SPECIES.

1. Gahnia procera.
Lin. ſyſt. 345. *ſuppl.* 211. *Forſt. in nov. act. upſ.* 3. 178. *flor. auſtral. n.* 158. *nov. gen.* 52. *t.* 26.
Panicles ſpiked ſeveral elongated, florets ſix-ſtamened.
2. Gahnia ſchoenoides.
Forſt. flor. auſtral. n. 159.
Culms flexuoſe, panicles compound ſpiked rigid ſubſolitary.

DESCRIPTIONS, &C.

1. Culm half a fathom in height, round, ſmooth, upright, reclining at top, the thickneſs of a pigeon's

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[e] Linn. ſuppl. [f] Syſt. [g] Suppl. [h] Hort. kew.

[i] Gærtner. [k] Roxburgh.

quill. Leaves ſword-ſhaped, longer than the culm, narrow, briſtle-ſhaped at the tip, reclining, concave at the baſe, ſheathing, rough at the edge with rows of minute ſpinules, alternate. Panicles in ſpikes, ſtiff, ſeveral, from the ſheaths of the leaves, coming out in whorls at each joint of the culm, purple. Flowers purple, in involucres half an inch in length. Seeds brown. Number of ſtamens in the lower flowers ſeven or eight, but the upper ones have always ſix. The lower panicles are often deſtitute of involucres, and therefore bear naked flowers.

Native of New Zealand[l]; found in Duſky bay april 11th, 1773.

2. Native of Otaheite[m]. It may probably be a Schoenus.

Gaidarothymo. See *Stachys ſpinoſa.*

Gaillarda. See *Galardia.*

Galactia. See *Clitoria.*]

Galanga and Galangale. See *Kæmpferia* and *Maranta.*

GALANTHUS. (*From* γαλα & ανθος, *milk and flower: ſo called from the milky whiteneſs of the corolla.*)

Lin. gen. n. 401. *Reich.* 433. *Schreb.* 547. *Juſſ.* 55.

Claſſ. 6. 1. Hexandria Monogynia.

Nat. order of *Spathaceæ.—Narciſſi,* Juſſ.

GENERIC CHARACTER.

Cal. *Spathe* oblong, obtuſe, compreſſed, gaping on the flat ſide, withering.

Cor. *Petals* three, oblong, obtuſe, concave, lax, patulous, equal.—*Nectary* cylindric, three-leaved, half the length of the petals; leaflets petal-ſhaped, parallel, emarginate, obtuſe.

Stam. *Filaments* capillary, very ſhort. *Anthers* oblong, acuminate, ending in a briſtle, convergent.

Pist. *Germ* globular, inferior. *Style* filiform, longer than the ſtamens. *Stigma* ſimple.

Per. *Capſule* oval-globular, obtuſely three-ſided, three-celled, three-valved.

Seeds ſeveral, globular.

ESSENTIAL CHARACTER.

Pet. three concave. *Nect.* of three ſmall emarginate petals. *Stigma* ſimple.

SPECIES.

1. Galanthus nivalis. *Snow-drop.*

Lin. ſpec. 413. *ſyſt.* 316. *Reich.* 2. 15. *hort. cliff.* 134. *upſ.* 73. *Hudſ. angl.* 140. *With.* 340. *Sowerby engl. bot. t.* 19. *Hall. helv. n.* 1254. *Scop. carn. n.* 391. *Jacqu. auſtr.* 4. *t.* 313. *Krock. ſileſ. n.* 497. *Berg. phyt.* 35.

Leucoium bulboſum trifolium minus. *Bauh. pin.* 56.

L. bulb. minus triphyllon. *Bauh. hiſt.* 2. 591. *Raii hiſt.* 1144.

L. bulb. præcox minus. *Cluſ. pann.* 181, 182. *Ger.* 120. 1. *emac.* 147. *Park. par.* 109. *Mor. hiſt. ſ.* 4. *t.* 9. *f.* 23.

L. bulb. triphyllum. *Dod. pempt.* 230.

DESCRIPTION, &c.

[The bulb of the Snowdrop is coated and truncate. Leaves yellowiſh at the baſe, callous at the tips. Scape half a foot or a ſpan in height, ancipital, ſtriated, involved at the baſe in a pair of leaves: ſheath whitiſh, truncate, involving the leaves and ſcape. The peduncle uſually comes out from the left cell of the ſpathe, is weak, and wrinkled below the germ. Flowers ſolitary, pendulous: petals milk-white. Nectary (or inner ſmaller petals) having on the outſide above the middle a green heart-ſhaped ſpot, and on the inſide ſix yellowiſh green lines. Anthers opening at the tip; filaments twice their length, and ſpringing each from a cavity which has a rim round it. Capſule half an inch long. Seeds oblong, four to twelve in one cell, each adhering to the receptacle by its proper hook[n]. It varies with double flowers.

Native of Switzerland, Auſtria, Sileſia, England, &c. in meadows. Common in orchards, where it is probably a relique of cultivation. At the foot of Malvern hills, where no traces of buildings or gardens are to be found. Near Cirenceſter[o]; &c.: but it is very doubtful whether this, and ſeveral other bulbous plants were originally indigenous.—It flowers uſually in february, hence its name in ſome places of *Fair Maids of February.* In the Rev. Gilbert White's Naturaliſt's Calendar the Snowdrop is marked to blow from jan. 10 to feb. 5; and this year 1796, whilſt I am writing on jan. 25, it is in flower, but the ſeaſon has been uniformly and remarkably mild, the thermometer from 51° to 55°.]

PROPAGATION AND CULTURE.

Theſe flowers are valued for their early appearance in the ſpring, for they uſually flower in february when the ground is often covered with ſnow. The ſingle ſort comes out the firſt, and though the flowers are but ſmall, yet when they are in bunches, they make a very pretty appearance; therefore theſe roots ſhould not be planted ſingle, as is ſometimes practiſed by way of edging to borders; for when they are ſo diſpoſed, they make very little appearance. But when there are twenty or more roots growing in a cloſe bunch, the flowers have a very good effect; and as theſe flowers thrive well under trees or hedges, they are very proper to plant on the ſides of the wood-walks, and in wilderneſs-quarters; where, if they are ſuffered to remain undiſturbed, the roots will multiply exceedingly. Theſe may be taken up at the end of june, when the leaves decay, and may be kept out of the ground till the end of auguſt, but they muſt not be removed oftener than every third year.

Galanthus. See *Leucoium.*

[GALARDIA. (*Named firſt Gaillardia, by Monſ. Fougeroux de Bondaroy, from Monſ. Gaillard of Charentonneau, who to the duties of the magiſtracy, adds, as a relaxation, the culture of plants, and the ſtudy of botany.* Act. gall.)

Lin. gen. Schreb. n. 1323. *Lamarck encycl.* 2. 590. *Juſſ.* 189.

Gaillardia. *Fougeroux de Bondaroy in act. gall.* 1786. *t.* 1, 2. Calonnea. *Buchoz.*

Claſſ. 19. 2. Syngeneſia Polygamia Fruſtranea.

Nat. order of *Corymbiferæ.*

GENERIC CHARACTER.

Cal. *Common* of two rows of ſcales: *ſcales* linear, flat, acute, about twelve in each row: the *outer* longer, reflex; the *inner* erect.

Cor. *Compound* radiate. *Corollets* hermaphrodite, numerous in the convex diſk. *Females* about twelve, much longer, ſpreading, in the ray.

Proper in the *hermaphrodites* tubular-funnel-form, with a five-toothed border.—In the *females* ligulate, wider outwards, half-three-cleft.

Stam. to the hermaphrodites *Filaments* five, capillary, very ſhort. *Anther* cylindric, tubular.

Pist. to the hermaphrodites *Germ* turbinate-angular. *Style* filiform, the length of the corollet. *Stigmas* two, ſpreading. Females *Germ* very ſmall. *Style* none. *Stigma* none.

Per. none. Calyx unchanged.

Seeds in the hermaphrodites ſolitary, angular, crowned with the five-leaved *calycle:* leaflets lanceolate, erect, awned. In the females none.

Rec. convex, (flat, *Juſſ.*) chaffy. *Chaffs* briſtle-ſhaped.

ESSENTIAL CHARACTER.

Recept. chaffy. *Seed* crowned with the five-leaved calycle (eight-chaffed, *Juſſ.*). *Cal.* of two rows of ſcales, almoſt equal.

SPECIES.

1. Galardia alternifolia.

Gmel. ſyſt. 1259.

G. bicolor. *Lamarck encycl.* 2. 590.

Gaillardia pulchella. *Foug. in act. gal.* 1786. 1.

Calonnea pulcherrima. *Buchoz. t.* 126.

DESCRIPTION, &c.

Stem from a foot to eighteen inches high, ſtraight, branched, ſlightly hiſpid, tinged with purple. Root-leaves oblong-ſpatulate, with large notches, a little rough to the touch, ſpread on the ground. Stem-leaves alternate, embracing, oblong, having a few blunt indentures along the edge, bright green, and ſlightly villoſe; the upper ones are almoſt entire. Peduncles ſimple, naked, long, terminating, bearing one handſome flower, purple and yellow, two inches in diameter. Scales of the calyx ciliate or hiſpid at the baſe, the inner ones ſmalleſt. Hermaphrodite florets hiſpid on the outſide. Receptacle ſlightly convex. Seeds turbinate, crowned with from five to eight ſharp, ſcarioſe chaffs which form the egret.

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[l] Forſter in act. upſ.

[m] Forſter.

[n] Scopoli.

[o] Withering.

This fine plant has been cultivated a few years in the royal garden at Paris[p].

M. Fougeroux informs us that M. le comte d'Eſſales brought the ſeeds from Louiſiana, and that the plants had produced ſeeds in the Paris garden in 1784 or thereabouts. It is an annual, and flowers in july and auguſt, and continues to the end of october.

Galarips. See *Allamanda.*

GALAX. (Γαλαξ, *Milk: which was probably the original noun, ſince it forms* γαλακτος *in the genitive.*)
Lin. gen. n. 276. *Reich.* 296. *Schreb.* 382. *Juſſ.* 420. Viticella. *Mitch.* 24.
Claſſ. 5. 1. Pentandria Monogynia.

GENERIC CHARACTER.

Cal. *Perianth* ten-leaved: outer leaflets alternate, ſhorter, lanceolate, reflex; inner longer, lanceolate, acute, upright.

Cor. one-petalled, ſalver-ſhaped: *tube* cylindric, length of the calyx; *border* flat, five-cleft, ſegments obtuſe.

Stam. *Filaments* ſhort. *Anthers* roundiſh converging within the throat of the corolla.

Pist. *Germ* ovate, villoſe. *Style* filiform, ſemibifid, length of the ſtamens. *Stigmas* roundiſh.

Per. *Capſule* ovate, one-celled, two-valved, coloured, elaſtic.

Seeds two, large, convex, ovate, callous, as it were ſingle two-lobed.

ESSENTIAL CHARACTER.

Cal. ten-leaved. *Cor.* ſalver-ſhaped. *Capſ.* one-celled, two-valved, elaſtic.

SPECIES.

1. Galax aphylla.
Lin. ſpec. 289. *Reich.* 1. 562. *Gron. virg.* 34.
Viticella. *Mitch. gen.* 24.
Anonymos ſ. Belvedere. *Clayt. n.* 4. *Gron. virg.* 25.

DESCRIPTION, &c.

This plant is a native of Virginia, as yet very rare and little known in Europe. Leaves all radical. Stem naked, ſimple, probably woody. Flowers in a looſe, terminating ſpike[q].

GALAXIA. (Γαλαξιος κυκλφ, *is the milky way; thus* γαλαξιον φυτον, *is a milky plant.*)
Lin. gen. Schreb. n. 1103. *Thunb. nov. gen.* 50. *Cavan. diſſ.* 6. 340. *t.* 189. *Juſſ.* 57.
Claſſ. 16. 1. Monadelphia Triandria.
Nat. order of *Enſatæ. Irides*, Juſſ.

GENERIC CHARACTER.

Cal. *Spathe* one-valved, membranaceous, converging.

Cor. one-petalled, ſuperior. *Tube* filiform, long, erect, a little widened at top. *Border* ſix-parted: *parts* obovate, obtuſe, ſpreading; the three outer ones having a nectareous pit.

Stam. *Filaments* three, united in a cylinder. *Anthers* ovate.

Pist. *Germ* inferior, obtuſely triangular, ſmooth. *Style* filiform, a little longer than the ſtamens. *Stigmas* three, filiform-many-parted, ſpreading.

Per. *Capſule* oblong-ſubcylindric, three-grooved, three-celled, three-valved.

Seeds very many, globular, very ſmall.

ESSENTIAL CHARACTER.

Spathe one-valved. *Cor.* one-petalled, ſix-cleft; tube capillary. *Stigma* many-parted.

SPECIES.

1. Galaxia ovata.
Lin. ſyſt. 609. *Thunb. nov. gen.* 51. *fig. prodr. cap.* 10. *Cavan. diſſ.* 6. 341. *t.* 189. *f.* 2. *Lamarck encycl.* 591.
Ixia Galaxia. *Lin. ſuppl.* 93.
Leaves ovate.

2. Galaxia graminea.
Lin. ſyſt. 609. *Thunb. nov. gen.* 51. *fig. prodr. cap.* 10. *Cavan. diſſ.* 6. 341. *t.* 189. *f.* 3. *Lamarck encycl.* 592.
Ixia fugaciſſima. *Lin. ſuppl.* 94.
Leaves linear-filiform.

DESCRIPTIONS, &c.

1. Root filiform, fixed to an ovate netted comoſe bulb; there are uſually ſeveral of theſe conglomerate. Stem none. Root-leaves heaped ſheathing ovate obtuſe ſlightly veined longitudinally flat ſmooth, the edge ſomewhat cartilaginous. The calyx is a very thin ſheath. The corolla is variegated with yellow purple and violet. The capſule is ſmooth. It flowers from june to ſeptember.

2. Root as in the preceding. Leaves radical, in bundles, broader at the baſe, then linear, briſtle-ſhaped at the tip, entire, channelled, ſmooth, very nearly an inch in length. Flowers radical, among the ſheathing leaves, in bundles, ſeſſile, with a long capillary tube, the length of the leaves. Corolla yellow, varying with a yellow tube and a violet-coloured border.

Theſe are both natives of the Cape of Good Hope, where they were found by Thunberg[r].

Cavanilles adds a third ſpecies found by Commerſon in the ſtraits of Magellan. Being doubtful whether it belongs to this genus, he names it *Galaxia obſcura.*

Galbanum. See *Bubon.*]

Gale. See *Liquidambar* and *Myrica.*

GALĔGA. (*An Italian word*, q. herba Gallica.)
Lin. gen. n. 890. *Reich.* 963. *Schreb.* 1206. *Tourn.* 222. *Juſſ.* 359. Indigo. *Iſnard. act. gall.* Cracca. *Syſt. nat.*
Claſſ. 17. 4. Diadelphia Decandria.
Nat. order of *Papilionaceæ* or *Leguminoſæ.*

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, tubular, ſhort, half-five-cleft; teeth ſubulate, nearly equal.

Cor. Papilionaceous: *banner* large, ovate, reflex at the end and on the ſides; *wings* oblong, having an appendage, and being almoſt the length of the banner; *keel* oblong, compreſſed, ſtraight, towards the end gibbous below, ſharp above.

Stam. *Filaments* diadelphous (ſimple and nine-cleft). *Anthers* oblong.

Pist. *Germ* ſlender, oblong. *Style* ſlender, ſhorter than the germ, aſcending. *Stigma* a very ſmall dot at the end.

Per. *Legume* very long, compreſſed, acuminate, ſcored with oblong ſtreaks between the ſeeds.

Seeds ſeveral, oblong-kidney-ſhaped.

ESSENTIAL CHARACTER.

Cal. with ſubulate teeth, nearly equal. *Legume* with oblique ſtreaks, between the ſeeds.

SPECIES.

1. Galega officinalis. *Officinal Galega*, or *Goat's-Rue.*
Lin. ſpec. 1062. *Reich.* 3. 521. *mat. med.* 174. *hort. cliff.* 362. *upſ.* 208. *Hall. helv. n.* 394. *Mill. fig.* 137.
Galega. *Lob. ic. Ger.* 1068. *emac.* 1252. *Bauh. hiſt.* 2. 342. *Raii hiſt.* 911. *Riv. tetr. t.* 72.— vulgaris. *Bauh. pin.* 352. *Mor. hiſt.* 2. 91. *ſ.* 2. *t.* 7. *f.* 9. *Park. theat.* 417. *Blackw. t.* 92.
β. G. africana. *Mill. dict. n.* 2.
G. afr. flor. majoribus, ſiliquis craſſioribus. *Tournef. inſt.* 399.
Legumes ſtiff upright; leaflets lanceolate, ſtreaked, naked.

[2. Galega cinerea.
Lin. ſpec. 1062. *Reich.* 3. 522. *amœn.* 5. 403. *Brown. jam.* 289. *Vahl ſymb.* 2. 84.
Legumes ſtiff ſpreading, racemes oppoſite to the leaves, pedicels ſolitary; leaflets villoſe underneath, ſtipules lanceolate.

3. Galega littoralis.
Lin. ſyſt. 679. *Reich.* 3. 522.

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[p] Lamarck.

[q] Ibid.

[r] Cavanilles.

Vicia littoralis. *Jacqu. amer.* 206. *t.* 124. *pict.* 101. *t.* 192.
Legumes in racemes, the whole villoſe-tomentoſe.]

4. Galega virginiana.
Lin. ſpec. 1062. *Reich.* 3. 522. *amœn.* 3. 18. *hort. cliff.* 498. *Gron. virg.* 111. (Clitoria). *mant. gen.* 210. (Erebinthus). *Pluk. alm. t.* 23. *f.* 2. (Cicer).
Legumes back-ſickled compreſſed villoſe ſpiked, calyxes woolly, leaflets oval-oblong acuminate.

[5. Galega villoſa.
Lin. ſpec. 1063. *Reich.* 3. 522. *Fl. zeyl. n.* 299. (Cracca). *Pluk. alm. t.* 59. *f.* 6. (Securidaca).
β. Coronilla zeylanica, &c. *Burm. zeyl.* 78. *t.* 33.
Legumes back-ſickled villoſe pendulous racemed lateral, leaflets ſmooth lanceolate.

6. Galega ſpinoſa.
Lin. ſyſt. 679. *ſuppl.* 335.
Legumes ſolitary back-ſickled compreſſed, ſtipules ſpineſcent, leaflets wedge-ſhaped hoary, ſtem diffuſed.

7. Galega maxima.
Lin. ſpec. 1063. *ſyſt.* 679. *Reich.* 3. 523. *fl. zeyl. n.* 300. *amœn.* 3. 19. *Burm. zeyl.* 228. *t.* 108. *f.* 2. (Vicia).
Legumes ſtiff aſcending ſmooth, ſtipules lanceolate, leaflets oblong ſmooth ſtreaked.

8. Galega grandiflora. *Roſe-coloured Galega.*
L'Herit. ſtirp. nov. 2. *t.* 44. *Ait. hort. kew.* 3. 70. *Vahl ſymb.* 2. 84.
Legumes ſpreading, ſtipules ovate-lanceolate, leaflets oblong almoſt naked awned.

9. Galega pallens. *Pale-coloured Galega.*
Ait. hort. kew. 3. 70.
Legumes ſtiff ſpreading ciliate, ſtipules awl-ſhaped, leaflets (nine to eleven) oblong ſharp pubeſcent underneath.

10. Galega piſcatoria. *Woolly Galega.*
Ait. hort. kew. 3. 71.
Legumes ſtiff aſcending ſubvilloſe, ſtipules awl-ſhaped, leaflets (eleven to thirteen) oblong blunt ſomewhat hairy underneath, peduncles ancipital.]

11. Galega purpurea. *Purple Galega.*
Lin. ſpec. 1063. *Reich.* 3. 523. *fl. zeyl. n.* 301. *amœn.* 3. 19. *Burm. zeyl.* 77. *t.* 33.
Legumes ſtiff aſcending ſmooth racemed terminating, ſtipules awl-ſhaped, leaflets oblong ſmooth.

[12. Galega caribæa.
Lin. ſyſt. 679. *Reich.* 3. 523. *Jacqu. amer.* 212. *t.* 125. *pict.* 101. *t.* 193.
Legumes ſtiff ſmooth pendulous racemed, leaflets ſmooth mucronate, ſtem ſhrubby.

13. Galega coerulea.
Lin. ſyſt. 679. *ſuppl.* 335.
Racemes terminating many-flowered contracted, leaflets (eight to ten pairs) elliptic, ſtem ſcabrous.

14. Galega tinctoria.
Lin. ſpec. 1063. *Reich.* 3. 523. *fl. zeyl. n.* 302. *amœn.* 3. 19.
Spikes lateral peduncled, legumes ſtiff pendulous, leaflets emarginate villoſe underneath.

15. Galega ſenticoſa.
Lin. ſpec. 1063. *Reich.* 3. 523. *fl. zeyl. n.* 303. *amœn.* 3. 19.
Legumes in pairs lateral ſmooth, leaflets emarginate ſilky underneath; ſtem ſhrubby.

16. Galega pulchella.
Scop. fl. inſubr. 3. *t.* 21. *Vahl ſymb.* 2. 85.
G. ſtricta. *Ait. hort. kew.* 3. 70.
Legumes ſtraight villoſe; pendulous, racemed; ſtipules awl-ſhaped; ſtandards above and leaves underneath villoſe.]

17. Galega fruteſcens.
Mill. dict. n. 3. *Houſt. Mſs.*
Leaflets ovate, flowers panicled axillary, ſtem ſhrubby.

[18. Galega tomentoſa.
Vahl ſymb. 2. 84.
Lathyrus tomentoſus. *Forſk. deſcr.* 135.
Legumes ſtiff aſcending villoſe racemed oppoſite to the leaves, pedicels in threes, leaflets ſilky underneath, ſtipules awl-ſhaped.

19. Galega toxicaria.
Swartz prodr. 108.
G. fruteſcens, fol. ſericeis. *Plum. ic.* 126. *t.* 235.
Cytiſus 2. *Brown. jam.* 296.
Spikes terminating peduncled, legumes cylindric pedicelled ſpreading, ſtem and leaflets hoary-tomentoſe.

DESCRIPTIONS, &c.

1. Root perennial, compoſed of many ſtrong fibres, which are frequently jointed. Stems channelled, hollow, from two to three, or even five feet in height. Leaves unequally pinnate, compoſed of five or ſeven (Haller ſays nine or ten) pairs of ſmooth, entire leaflets. Flowers terminating, in looſe ſpikes; they are of a pale blue colour, appear in june, and are ſucceeded by taper pods, about an inch and half in length, and ripening towards the end of auguſt.

There is a variety with white, and another with variegated flowers.

β. The African plant has larger leaves, compoſed of eight or ten pairs of leaflets, broader and blunter; the flowers are larger, the ſpikes longer, and the ſeed-pods much thicker.

Goat's-Rue is accounted cordial, ſudorific and alexipharmic. Mr. Boyle celebrates its virtues in peſtilential and malignant diſeaſes.

Native of Spain, Italy, Hungary, and Africa. Cultivated by Gerarde in 1596[a]. He names it *Italian Fitch* and *Goat's-Rue.*

By ſome miſtake, this plant is ſet down by Parkinſon, as having been found wild near Linton in Cambridgeſhire, where it was certainly never ſeen growing wild by any perſon.

2. This is a ſmall herbaceous plant, ſomewhat of an aſh colour, ſeldom growing above eleven or twelve inches in height. It is common among the buſhes in all the Savannas about Kingſton in Jamaica[b].

3. Stems round, branched, villoſe, procumbent unleſs it be ſupported by neighbouring ſhrubs. Tendrils none. Stipules lanceolate-acuminate, villoſe, quite entire. Leaves unequally pinnate; the midrib villoſe, grooved, two or three inches long; leaflets about ſix pairs, oblong, attenuated at the baſe, blunt, quite entire. Racemes ſimple, ſtiff, ſubterminating, with a peduncled flower or two frequently in the axil of the leaf. Flowers fleſh-coloured, inodorous. Legumes villoſe, ſharp, brown, an inch and half long. Seeds variegated.

Native of Carthagena in America, on ſandy ſhores[c]: and every where between the Tropics[d].]

4. Root perennial. Stem annual, three feet high. Leaflets generally ſeven or nine. The whole plant is covered with a ſilvery down. Flowers red, in ſpikes at the ends of the branches. Legumes ſilvery.

[Stem erect in its place of native growth, which is in North America. Flowers three or four[e].

5. Plant procumbent. Stem round. Leaflets (thirteen to ſeventeen) blunt with a point, ſtreaked at an acute angle, the lower ones ſhorter and obovate. Spike terminating, peduncled. Calyxes gray with hairs. Stipules briſtle-ſhaped[f].

Native of the Eaſt Indies.

6. Stems or branches white with down. Stipules in pairs, ſpreading. Peduncles axillary, ſolitary, ſhort, one-flowered. Flowers upright, ſmall. Legume hanging down.

Found in Coromandel by König[g].

7. This is the largeſt of the genus. Stem angular, ſmooth, changing ſituation variouſly between the joints. Leaflets between oval and lanceolate, blunt with a point, ſubpetioled, beautifully ſtreaked at an acute angle, underneath. Racemes terminating, very long; with ovate, acuminate, alternate bractes; within each are three filiform peduncles ſupporting as many flowers, with banners broader than the leaves. Calyxes ſmooth. Legumes like thoſe of the Vetch.

Native of Ceylon[h].

[a] Hort. kew.
[b] Browne.
[c] Jacquin.
[d] Forſter.
[e] Linn.
[f] Linn. zeyl.
[g] Linn. ſuppl.
[h] Linn. zeyl.

8. Stem ſhrubby, round, branched, having very minute hairs ſcattered over it. Leaves unequally pinnate: leaflets in ſix pairs, on ſhort petioles, the outmoſt larger, outwardly a little wider, awned, the upper ſurface ſmooth, the lower appearing hairy when magnified. Petiole ſcarcely pubeſcent. Stipules ovate, nerved, purpliſh. Peduncles terminating, erect, elongated: flowers at the top, oppoſite, approximating, nodding. Bractes ovate-oblong, acute, purpliſh, deciduous. Calyx tomentoſe-ſilky. Corolla purple: banner ſmooth above. Legume compreſſed, cloſely ciliate about the edge.—G. virginiana differs from this in the ſtem being villoſe, the leaves having ten or twelve pairs of leaflets, not wider outwards, the bractes awl-ſhaped, and the legumes every where villoſe[i].

Native of the Cape of Good Hope, whence it was introduced by Mr. Francis Maſſon in 1774[k].

9. Native of the Cape of Good Hope. Introduced by Mr. Fr. Maſſon in 1787. It flowers in july[l].

10. Native of India and the South Sea iſlands. Introduced in 1778, by Patrick Ruſſell, M. D. It flowers in june and july[m].

11. Perennial. Stem leſs angular and ſtraighter than the ſeventh, reddiſh. Leaflets (thirteen to ſeventeen) blunt with a point, ſtreaked at an acute angle. Flowers narrower than the leaves. Bractes ovate; within each two flowers with capillary peduncles. Legumes like thoſe of the Vetch, aſcending at the tip, compreſſed, a little toroſe[n].]

Mr. Miller ſays, this plant was annual here; that it had an herbaceous ſtalk, two feet high; that the leaves had eight or nine pairs of leaflets; that the peduncles came out oppoſite to theſe; and that the flowers were ſmall, purple, in a looſe ſpike, and ſucceeded by ſlender erect pods. He received the ſeeds from Ceylon and many other parts of the Eaſt Indies.

[It was cultivated in 1768, by him; and flowers in july and auguſt[o].

12. This is an upright, branched ſlender ſhrub, two feet high. Stipules briſtle-ſhaped, entire. Leaves unequally pinnate, three inches long, often diſtich: leaflets about ten pairs, oval-oblong, blunt with a briſtle-ſhaped point, quite entire, ſmooth on both ſides. Racemes axillary, looſe, ſimple, ſtiffly ſpreading, ſolitary, longer than the leaves, ſix-flowered or thereabouts. Flowers inodorous, red and white variegated. The two upper ſegments of the calyx leſs deeply cut, and ſhorter than the others, and the loweſt ſegment longer than any. Banner obtuſe, emarginate, ſpreading very much, on a ſhort claw; keel roundiſh-ſickled, acuminate. Style ſlightly hirſute, riſing almoſt at a right angle. Legume linear, flat, blunt with a point, tranſverſely grooved between the ſeeds, brown, ſmooth, pendulous, or even bent back to the raceme by the incurved peduncle. Seeds black, ſhining.

Native of the Caribbee iſlands[p].

13. Branches ferruginous, tubercled with black dots, on the top of the ſtem tomentoſe. Leaflets blunt. Stipules awl-ſhaped. Racemes upright, reſembling thoſe of Aſtragalus Alopecuroides; flowers numerous, heaped, blue.—Found in South America by Mutis[q].

14. A very handſome plant. Stems naked, flexuoſe, ſmooth, angular. Leaflets eleven, oblong, blunt, ſmooth above, ſilky underneath, hairy, ſtreaked, the lower ones ſhorter. Peduncles from each axil, naked, ſpiked at the end, the length of the leaves, ſmooth. Calyxes ſubvilloſe. Legumes like thoſe of Lathyrus.—It is from this plant that the inhabitants of Ceylon prepare their Indigo, which yields a dye of a pale blue colour[r].

15. This is a woody ſhrub, with a roundiſh ſtem, and a brown bark. Leaflets uſually nine, obovate, ſtreaked. Legumes like thoſe of Orobus.

Native of Ceylon[s].

16. Root annual or biennial. Stem reddiſh brown, ſomewhat villoſe, at a ſmall diſtance from the root producing branches which ſubdivide into others: branchlets ſtreaked, ſomewhat angular, villoſe, and ſometimes ſo copious, that they ſeem to weigh down the whole plant. Leaflets about five pairs, equal, oblong-lanceolate, on both ſides, eſpecially underneath, cloſely pubeſcent; uſually acuminate, but ſome of them obtuſe, and even ſlightly emarginate. The common petiole is grooved; the partial ones are very ſhort, round, ſomewhat villoſe, yellowiſh green. Stipules ſlender, villoſe, ſtraight, acuminate. Peduncles from the upper axils, uſually two together, ſeldom three, villoſe, reddiſh, ſhorter than the calyx; which is ſublabiate, villoſe, permanent, tinged with yellow. Corolla purple; banner rounded, emarginate, with an ovate, white ſpot at the baſe, and ſtreaked with white lines; villoſe at the back, eſpecially near the baſe; claw very ſhort, greeniſh yellow: wings oval, twice as long as the calyx, with ſhort claws, and forming almoſt a right angle with the banner: keel ſubovate, acuminate, two-valved, the valves cohering above the middle. Germ hoary; ſtyle cylindric; ſtigma almoſt globular. Legume pedicelled, at firſt ſlightly ſickle-ſhaped, but afterwards ſtraight, almoſt cylindric, villoſe, an inch in length. Seeds ovate brown. It differs from G. *tinctoria* in having the leaflets villoſe on both ſides, and not all emarginate; the flowers not in ſpikes, and the legumes by no means pendulous. Nor can it be referred to G. *ſenticoſa*, as appears from the deſcription in *Flora zeylanica*.—It flowered at Pavia the 21ſt of july 1783, and the ſeeds ripened on the 5th of ſeptember[t].

Native of the Cape of Good Hope, whence it was introduced here in 1787[u].

Vahl ſays, it differs from G. grandiflora in having the branchlets angular and villoſe, the leaflets villoſe underneath, the ſtipules awl-ſhaped, ſmall, villoſe, the bractes awl-ſhaped.]

17. Mr. Miller has not deſcribed it. He informs us that it was diſcovered by Dr. Houſtoun at Campeachy, whence he ſent the ſeeds to Europe.

[18. Stem villoſe-tomentoſe, angular. Leaflets from four to ſix pairs, an inch long, linear, obtuſe, mucronate, acute at the baſe, ſmooth above. Peduncles oppoſite to the leaf, a long ſpan in length. Flowers remote, on villoſe pedicels. Bractes in pairs, awl-ſhaped, ſhorter than the pedicel. Calyx villoſe. Banner villoſe, cinereous on the outſide. Legumes two inches long.—It differs from G. cinerea only in having narrower ſtipules, and the legumes in threes at each tooth of the peduncle[x].

19. This is a ſpreading ſhrubby plant, riſing generally to the height of five or ſix feet. The leaves and branches, well pounded, and thrown into a river or pond, very ſoon affects the water, and intoxicates the fiſh, ſo as to make them float on the ſurface, as if dead: moſt of the large ones recover after a ſhort time, but the greateſt part of the ſmall fry periſh on theſe occaſions.

It is a native of South America, whence it has been introduced to Jamaica, and cultivated there, on account of its intoxicating qualities[y].]

PROPAGATION AND CULTURE.

1. This is propagated by ſeeds, ſown either in ſpring or autumn in an open ſituation. When the plants come up, keep them clean from weeds till they are ſtrong enough to remove; then take them carefully up, and plant them in a ſpot well dug and cleared, in rows a foot and half diſtant, and one foot aſunder in the rows; watering them till they have taken new root. Hoe the ground frequently between the plants; and dig it in the ſpring between the rows. If the ſtalks are cut down every year, before the ſeeds are formed, the roots will continue the longer, eſpecially on a light dry ſoil.—Or if the ſeeds be permitted to ſcatter, the plants will come up without any care.

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[i] Vahl. [k] Hort. kew. [l] Ibid. [m] Ibid. [n] Linn. zeyl. [o] Hort. kew. [p] Jacquin. [q] Linn. ſuppl. [r] Linn. zeyl. [s] Ibid.

[t] Scopoli. [u] Hort. kew. [x] Vahl. [y] Browne.

4. This plant, although it is tolerably hardy, yet it is with difficulty preſerved in gardens; for the ſeeds rarely ripen in England, and the plants are often deſtroyed by froſts in winter. The only method in which I have been able to keep the plants, has been by potting them, and placing them in a common frame in winter, where they enjoyed the free air in mild weather, but were protected from froſt; in this way I have kept it three years, but it has not ripened ſeeds here.

The other ſorts from the Eaſt and Weſt Indies may be propagated by ſeeds ſown on a hot-bed in the ſpring. When the plants are ſtrong enough, tranſplant each of them into a ſeparate ſmall pot, and plunge them into a hot-bed of tanner's bark, ſhading them till they have taken new root. Then treat them as other tender plants, preſerving them through the winter in the bark-ſtove. They will flower in july, and perfect their ſeeds in ſeptember.

If the plants are brought forward early in the ſpring, and the ſummer proves warm, the ſeeds may ripen here.

[Galega. See *Æſchynomene, Caſſia, Orobus, Sophora.*

Galegæ affinis. See *Æſchynomene* and *Caſſia.*]

GALENIA. (*So named by Linneus from the famous phyſician Claudius Galenus, born at Pergamus one hundred and thirty-three years before the Chriſtian era.*)

Lin. gen. n. 492. *Reich. n.* 534. *Schreb. n.* 673. *Juſſ.* 84. Sherardia. *Ponted. epiſt.* 14.

Claſſ. 8. 2. Octandria Digynia.

Nat. order of *Succulentæ. Atriplices,* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* very ſmall, four-cleft, concave: *diviſions* oblong.

Cor. none.

Stam. *Filaments* eight, capillary, ſcarcely the length of the calyx. *Anthers* twin.

Pist. *Germ* roundiſh. *Styles* two, ſimple, reflex. *Stigmas* ſimple.

Per. *Capſule* roundiſh, two-celled.

Seeds two, oblong, angular.

ESSENTIAL CHARACTER.

Cal. four-cleft. *Cor.* none. *Capſ.* roundiſh, two-ſeeded.

SPECIES.

1. Galenia africana. *Upright* or *ſhrubby Galenia.*
Lin. ſyſt. edit. 13. 310. *edit.* 14. 375. *ſuppl.* 227. *Mill. illuſt. ic. Boerh. lugdb.* 2. 267.
Erect, ſhrubby; leaves linear, fleſhy.

[2. Galenia procumbens. *Trailing Galenia.*
Lin. ſyſt. 375. *ſuppl.* 227.
Procumbent; leaves ovate channelled, patulous and recurved at the tip.]

DESCRIPTIONS, &c.

Stem four or five feet high, ſending out many weak branches. Leaves very narrow, placed irregularly on every ſide, of a light green, with a furrow running longitudinally through the middle. Flowers in looſe panicles from the ſides and at the ends of the branches, very ſmall, and making little appearance.

[It is a ruſtic ſhrub, with the air of *Tetragonia,* but all the parts minute, and the whole of it obſcurely papilloſe or bladdery. Stem round, with a few reflex little briſtles. Leaves oppoſite, ſeſſile, perennial. Flowers ſeſſile, white, in a dichotomous panicle[a].

Native of the Cape of Good Hope. Cultivated in 1752, by Mr. Miller. Flowering from june to auguſt[b].

2. Found at the Cape of Good Hope, by Thunberg[c].]

PROPAGATION AND CULTURE.

Theſe plants will not live through the winter in the open air in England, but muſt be placed in the green-houſe, or under a frame, with other hardy exotic plants, where they may have a large ſhare of air in mild weather, for they only require to be protected from froſt. In the ſummer they may be expoſed in the open air, with other plants of the ſame country, and in dry weather they muſt be frequently watered. They may be propagated by cuttings, which if planted during any of the ſummer months and watered frequently, will take root in five or ſix weeks, and may then be treated as is directed for the old plants.

Galeobdolon. See *Galeopſis.*

GALEOPSIS. (*From* γαλη, *a cat, and* οψις, *aſpect; the flowers gaping like the open mouth of an animal.*)

Lin. gen. n. 717. *Reich.* 775. *Schreb.* 972. *Juſſ.* 114. Tetrahit. *Dill. gen.* 3. 4. Galeobdolon. *Dill. gen.* 4.

Claſſ. 14. 1. Didynamia Gymnoſpermia.

Nat. order of *Verticillatæ* or *Labiatæ.*

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, tubular, five-toothed, ending in awns the length of the tube, permanent.

Cor. monopetalous, ringent: *tube* ſhort: *border* gaping: *throat* a little wider than the tube, at the length of the calyx above the baſe of the upper lip putting out on each ſide an acuminate toothlet, concave underneath: *upper lip* roundiſh, concave, ſerrate at the tip; *lower* trifid, the lateral diviſions roundiſh, the middle one larger, emarginate, notched.

Stam. *Filaments* four, ſubulate, concealed beneath the upper lip, two of them ſhorter. *Anthers* roundiſh, bifid.

Pist. *Germ* quadrifid. *Style* filiform, length and ſituation of the ſtamens. *Stigma* bifid, acute.

Per. none. *Calyx* ſtiff, ſtraight, containing the ſeeds in the bottom.

Seeds four, three-ſided, truncate.

Obs. G. Ladanum *has the upper lip of the corolla ſcarcely notched; it is reflex a little at the tip.*

ESSENTIAL CHARACTER.

Cor. upper lip notched a little, vaulted: lower has two teeth above.

SPECIES.

1. Galeopſis Ladanum. *Red Dead-nettle,* or *Nettle-hemp. Narrow-leaved Allheal* or *Ironwort.*
Lin. ſpec. 810. *Reich.* 3. 51. *mant.* 411. *hort. cliff.* 314. *fl. ſuec. n.* 524. *Hudſ. angl.* 256. *With.* 607. *Relh. cant. n.* 433. *Hall. helv. n.* 266. *Scop. carn. n.* 727. *Pollich pal. n.* 558. *Neck. gallob.* 253. *Krock. ſileſ. n.* 931. *Villars dauph.* 2. 386.
Sideritis arvenſis anguſtifolia rubra. *Bauh. pin.* 233.—arv. rubra. *Park. theat.* 587. *Raii ſyn.* 242.
Ladanum ſegetum fol. latiore. *Riv. mon. t.* 24. *Petiv. brit. t.* 33. *f.* 11.—quorundam fl. rubro. *Bauh. hiſt. Raii hiſt.* 566.
Lamium arv. annuum anguſtifolium rubrum verticillis ſpinoſis. *Mor. hiſt.* 3. 386. *ſ.* 11. *t.* 12. *f.* 18.
Internodes of the ſtem equal, whorls remote, calyxes not pungent; leaves linear-lanceolate, almoſt naked.

[2. Galeopſis villoſa. *Hairy Dead-nettle* or *Nettle-hemp. Yellow Ironwort.*
Hudſ. angl. 256. *With.* 608. *Relh. cant. n.* 434. *Hall. helv. n.* 267.
G. Ladanum β. *Reich.* 5. 2.
G. Lad. majus. *Krock. ſileſ. n.* 932.
G. dubia. *Leers herborn. n.* 453.
Ladanum ſeg. fol. latiore. *Riv. mon. t.* 24.
Sideritis lutea. *Petiv. brit. t.* 33. *f.* 10.—arv. latifolia hirſuta lutea. *Raii ſyn.* 242.
Internodes equal, whorls remote, leaves lanceolate ſerrate, villoſe.]

3. Galeopſis Tetrahit. *Common Dead-nettle* or *Nettle-hemp* or *hemp-leaved Dead-nettle.*
Lin. ſpec. 810. *Reich.* 3. 52. *mant.* 411. *hort. cliff.* 314. *fl. ſuec. n.* 523. *lapp.* 237. *Hudſ. angl.* 257. *With.* 608. *Lightf. ſcot.* 310. *Relh. cant. n.* 435. *Engl. bot. t.* 207. *Hall. helv. n.* 268. *Scop. carn. n.* 728. *Pollich pal. n.* 559. *Neck. gallob.* 253. *Gunn. norv. n.* 75. *Krock. ſileſ. n.* 933. *Villars dauph.* 2. 387.
Lamium cannabino fol. vulgare. *Raii ſyn.* 240.

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[a] Linn. ſyſt.

[b] Hort. kew.

[c] Linn. ſuppl.

Cannabis ſpuria. *Ger.* 573. *emac.* 709. *Raii hiſt.* 561. *Riv. mon. t.* 31. *Petiv. brit. t.* 33. *f.* 8. *Mor. t.* 12. *f.* 13.

β. *Lin. ſpec.* 810. *Reich.* 52. *fl. lapp.* 192. *Hall. helv. n.* 269. *Hudſ.* 257. δ. *With.* 609. δ. *Lightf.* 310. β.

G. cannabina. *Pollich. pal. n.* 560. *Krock. ſileſ. n.* 934.

G. ſpecioſa. *Mill. dict. n.* 3.

Lamium cannabino fol. fl. amplo luteo, labio purpureo. *Raii ſyn.* 241. *hiſt.* 561. *n.* 14. (Cannabis ſpuria). *Pluk. alm. t.* 41. *f.* 4.

Cannabis ſpuria fl. majore. *Riv. mon.* 32.

γ. Lamium cannabinum, flor. albis, verticillis purpuraſcentibus. *Raii ſyn.* 241. *Hudſ.* and *With.* β.

δ. Cannabis ſpuria fl. albo magno eleganti. *Morr. pin.* 19. *Raii ſyn.* 240. *Hudſ.* and *With.* γ.

Galeopſis proſtrata. *Villars dauph.* 2. 388.

Internodes thickened at top; upper whorls almoſt contiguous; calyxes ſomewhat pungent.

4. Galeopſis Galeobdolon. *Yellow Dead-nettle* or *Nettle-hemp.*

Lin. ſpec. 810. *ſyſt.* 535. *Reich.* 3. 53. *fl. ſuec. n.* 525. *Lightf. ſcot.* 310. *Pollich. pal. n.* 561. *Leers herborn. n.* 455. *Krock. ſileſ. n.* 935. *t.* 23.

Galeobdolon luteum. *Hudſ. angl.* 258. *With.* 610.

G. Galeopſis. *Relh. cant.* 436. *Curtis lond.* 4. *t.* 40.

Leonurus Galeobdolon. *Scop. carn. n.* 705.

Cardiaca. *Hall. helv. n.* 275.

Lamium Galeobdolon. *Crantz. auſtr.* 262.

L. fl. luteo. *Riv. mon. t.* 20. 2.

L. luteum. *Ger.* 567. 2. *emac.* 702. 2. *Park. theat.* 606. *Raii hiſt.* 560. *ſyn.* 240. *Petiv. brit. t.* 33. *f.* 6.

L. folio oblongo luteum. *Bauh. pin.* 231. *Mor. hiſt. ſ.* 11. *t.* 11. *f.* 5, 6.

Galeopſis ſ. Urtica iners fl. luteo. *Bauh. hiſt.* 3. 323. 1.

Urtica iners tertia ſ. Lamium fl. luteo. *Dod. pempt.* 153. 3. *Lob. ic.* 1. 521. 1.

Six flowers in a whorl; involucre of four leaves: (flowers ſix to twelve, with an involucre of as many leaves as flowers).

DESCRIPTIONS, *&c.*

[Stem herbaceous four-cornered. Leaves oppoſite. Flowers in whorls.

1. Root annual. Stem upright, a foot high, purpliſh, ſomewhat hairy or nearly ſmooth, brachiate, the knots ſcarcely ſwoln. Leaves petioled, entire or ſlightly and diſtantly toothed, acuminate, naked or a little hairy, of a pale green colour. About eighteen flowers in a whorl. Calyx hairy, teeth a little unequal, hardly to be called thorny or pungent; they are acuminate, and terminate in awns as long as the teeth. Corolla reddiſh purple, and ſomewhat villoſe; upper lip toothed; lower lip bent back, irregularly notched, with two oval yellow ſpots within, but underneath and on the outſide many ſmall white globules. Frequent in corn fields, in a calcareous ſoil, flowering from june to auguſt [a].

Monſ. Villars has a ſpecies, which he calls *intermedia*, becauſe it ſeems to be a connecting link between this and G. Tetrahit. The calyx has no awns like this, but the flowers are only half the ſize of thoſe of Tetrahit, which are ſmaller than thoſe of Ladanum. The whole plant is viſcid. It is not Ladanum ſegetum of Rivinus, but it approaches to it a little. The ſtem is from eight to ten inches high; the branches leſs frequent than in Ladanum; the leaves oval, blunt, villoſe and toothed; the flowers red, ſeldom white, extending little beyond the calyx.

2. Root annual branched. Stem thicker, higher, and more branched than the foregoing, purpliſh, obſcurely quadrangular, grooved and villoſe. Leaves much broader, the ſerratures more in number and more regular, thoſe next the root ovate, thoſe on the ſtem lanceolate, acuminate, villoſe or ſilky, with ſtraight veins. Whorls more and nearer to each other. Calyx more hairy, the teeth ending in ſtiff awns. Corolla pale yellow and villoſe, of a deeper yellow about the throat: upper lip toothed, often variegated with pale purple, lower notched or ſcolloped, ſometimes alſo variegated with purple. This has very much the air of the foregoing, of which Linneus makes it only a variety; it differs however in the breadth, ſerratures, veins, and hairineſs of the leaves, as well as in the colour of the flowers [b].

Native of Germany, Switzerland, and England, as in ſandy corn fields of Cambridgeſhire, Nottinghamſhire, Yorkſhire and Lancaſhire, and about Bangor in Wales: flowering in july and auguſt.

3. Root annual. Stem upright, covered with ſtiff hairs, ſwoln under the joints. Leaves ovate-acuminate, ſerrate, hairy and rough eſpecially on the upper ſurface, two inches or more in length, and near half an inch in breadth; the petioles hairy, grooved above, and near an inch long. Flowers ſeſſile, ſeventeen or eighteen in a whorl; each whorl ſupported by a pair of leaves, and ſubulate, thorny bractes. Calyx ſtreaked, villoſe, the teeth terminated by ſharp awns, as long again as thoſe of *G. Ladanum.* Corolla twice as long as the calyx, either purple or white, with a ſpot on the lower lip variegated with purple and yellow; upper lip notched or ſcolloped, villoſe on the outſide; ſegments of the lower emarginate and ſmooth: nectaries ovate, obtuſe, at the baſe of the germ: anthers greeniſh, ſingularly two-lobed and hairy; ſtyle white; ſtigma red; both ſmooth. The ſwoln part of the ſtem, and the teeth of the calyx are covered with ſmall glands [c].

Every part of the plant is rough with very ſharp prickles, and has a ſtrong ſmell when bruiſed.

In corn fields, and on the borders of them, on waſte grounds, in coppice woods, &c. flowering in july and auguſt. In Yorkſhire they call it *Dea Nettle,* which I ſuppoſe is a corruption of Dead Nettle, and confounds it with Lamium.

β. The flower of this variety is large and elegant, above double the ſize of the foregoing, the corolla four times as long as the calyx, ſtraw-coloured, and the lower lip ſpotted with purple. Haller, Miller, Pollich, and Krocker, make it a ſeparate ſpecies; but the ſtructure of the whole plant being the ſame, Linneus will not allow it to be any thing more than a variety. All the parts are much larger and ſofter [d].

In Germany, Switzerland, Sweden, &c. In Great Britain, in the northern counties, as about Keighley, Settle, &c. Alſo in Eſſex, at the bottom of Ribton lane, near Woodford.

γ. Corolla white ſlightly tinged with red, and the lip marked with yellow, riſing from a purple calyx. Joints of the ſtem red. Leaves narrower, of a deeper green, and the whole air different from the common ſort. Mr. Doody obſerved this many years near the Neat-houſes, and in the way from thence to Chelſea.

δ. Corolla white and very large.—Obſerved by Merret along the ditches from Scrooby to Sherwood foreſt, and by Mr. Lawſon on the ſkirts of Croſs-Fell and other places of Weſtmoreland and Cumberland [e].

Monſ. Villars has a new ſpecies, under the name of *G. proſtrata.* He refers to Merret, but ſays that the flowers are yellow. Its low, ſimple, villoſe ſtem, and its large flowers, ſeem to make it a diſtinct ſpecies, in the opinion of Monſ. Villars; but it ſeems much diſpoſed to vary.

Dr. Smith obſerved a remarkable variety at Matlock in 1788, with the terminating flowers always regularly four-cleft and ſalver-ſhaped, with four equal ſtamens, whilſt all the reſt had their proper form.

4. With reſpect to this ſpecies there has been a great diverſity of opinion. Haller makes it a *Car-*

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[a] Linn. Hudſ. With. Woodw. Mſs.

[b] Krocker and Hudſon. [c] Pollich, Lightf. Wither. Woodw. Mſs.
[d] Linn. ſuec. Pollich, Woodw. Mſs. [e] Ray ſyn.

diaca, Scopoli a *Leonurus*, and Crantz a *Lamium*. Mr. Hudſon has created a new genus for it under the name of *Galeobdolon*, in which he has been followed by Mr. Curtis and Mr. Relhan. I am averſe from dividing the genera of plants, as I find them conſtituted by Linneus, without great neceſſity, and therefore leave this in the genus *Galeopſis*. Root perennial. Stems ſeveral, ſomewhat hirſute, furrowed, thoſe producing flowers are nearly upright, from a foot to two feet in height, the barren ſtems, after flowering time is paſt, extend to a great length, and creep. Leaves petioled, ſlightly hirſute, eſpecially at the edges, unevenly ſerrate, and veiny; the lower ones heart-ſhaped, the upper ones ovate, pointed and ſeſſile. The whorls have from ſix to twelve ſeſſile flowers, protected by an involucre, of as many briſtle-ſhaped leaves as there are flowers. Calyx ſlightly hirſute, marked with ten raiſed lines, alternately ſtronger and fainter; the teeth nearly equal and acuminate; the uppermoſt upright, and at a diſtance from the reſt, the two lowermoſt ſpreading open, and ſomewhat turned back. Corolla yellow, with the middle ſegment of the lower lip tawny, marked with three lines; the whole lower lip beautifully ſpotted with tawny or deep orange: tube a little longer than the calyx, purple and hairy within: upper lip upright, long, villoſe, edged with villoſe hairs, entire or nearly ſo; lower lip ſhorter, the lateral ſegments ovate, acuminate, with the outer ſide bent back; the middle one longer, ſtraight and acuminate. Filaments yellow: anthers two-lobed and purpliſh, fleſhy or glandular on the back part: pollen whitiſh. Style purple. Seeds browniſh black, ſomewhat ſhining, oblong, convex on the outer ſide, three-cornered on the inner.

Native of Sweden, Germany, Switzerland, Auſtria, Carniola, Italy, Britain, &c. In ſome parts of the iſland frequent, as in Charlton, Hampſtead, and ſome other woods near London; in Kent, Eſſex, Cambridgeſhire, Suffolk, Norfolk, Worceſterſhire, Staffordſhire, Warwickſhire.

It flowers in may and june.

It is found with variegated leaves[f].]

PROPAGATION AND CULTURE.

All the ſpecies, except the laſt, being annual, muſt be propagated from ſeeds, but being common weeds, are ſeldom cultivated in gardens; [though the firſt variety of the third ſpecies makes no bad appearance, and was therefore not unaptly named *ſpecioſa* by Mr. Miller. As weeds among corn they are not very injurious, nor difficult of extirpation.

The fourth ſort is perennial, and may be propagated plentifully by the runners, which it throws out too abundantly. When the foliage is variegated, it makes a beautiful appearance in a garden. This being a wood plant, ſhould not be too much expoſed to the ſun.

GALEOPSIS. See *Lamium*, *Nepeta*, *Phlomis*, *Spermacoce*, *Stachys*.]

GALIUM. *From* γαλα, *milk*, *ſome ſpecies having the property of curdling milk.*)

Lin. gen. n. 125. *Reich.* 132. *Schre* 162. Gallium. *Tournef.* 39. *Juſſ.* 196. Aparine. *Tournef.* 39. *Gærtn. t.* 24.

Claſſ. 4. 1. Tetrandria Monogynia.

Nat. order of *Stellatæ*. *Rubiaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* very ſmall, four-toothed, ſuperior—in ſome ſpecies none.

COR. one-petalled, wheel-ſhaped, four-parted, ſharp, without any tube.

STAM. *Filaments* four, ſubulate, ſhorter than the corolla. *Anthers* ſimple.

PIST. *Germ* twin, inferior. *Style* filiform, half-two-cleft, length of the ſtamens. *Stigmas* globular.

PER. *Berries* two, dry, globular, united.

SEEDS ſolitary, kidney-form, large.

OBS. Aparine Tourn. *has a hiſpid fruit, and* Gallium *a ſmooth one.*

Some ſpecies have two ſtyles.

ESSENTIAL CHARACTER.

Cor. one-petalled, flat. *Seeds* two, roundiſh.

SPECIES.

* *With a ſmooth fruit.*

[1. Galium rubioides. *Madder-leaved Ladies Bedſtraw.*
Lin. ſpec. 152. *Reich.* 1. 299. *Scop. carn. n.* 146. *Pollich pal. n.* 148. *Krock. ſileſ. n.* 214.
Leaves in fours lanceolate-ovate equal ſcabrous underneath, ſtem erect.]

2. Galium paluſtre. *White Ladies Bedſtraw.*
Lin. ſpec. 153. *Reich.* 299. *Fl. ſuec. n.* 126. *lapp.* 52. *Hudſ. angl.* 67. *With.* 149. *Relh. cant. n.* 123. *Hall. helv. n.* 719. *Pollich pal. n.* 149. *Leers herborn. n.* 110. *Neck. gallob.* 34. *Fl. dan. t.* 423. *Krock. ſileſ. n.* 215. *Villars dauph.* 2. 332.
Gallium album. *Ger.* 967. 2. *emac.* 1126. 2? *Bauh. hiſt.* 3. 721? *Raii hiſt.* 481.—paluſtre album. *Bauh. pin.* 335.
Molluginis vulgatioris varietas minor. *Park. theat.* 565? *Raii ſyn.* 224. *Petiv. brit. t.* 30. *f.* 5.
Leaves in fours obovate unequal, ſtems diffuſed.

[3. Galium trifidum.
Lin. ſpec. 153. *Reich.* 299. *Fl. dan. t.* 48. *Krock. ſileſ. n.* 216.
Leaves in fours linear, ſtem procumbent ſcabrous, corollas trifid.

4. Galium montanum. *Mountain Ladies Bedſtraw.*
Lin. ſpec. 155. *ſyſt.* 150. *Reich.* 300. *Hall. helv. n.* 714. *Pollich pal. n.* 155.
Leaves in fours or thereabouts linear ſmooth and even, ſtem weak ſcabrous.

5. Galium procumbens. *Trailing Ladies Bedſtraw.*
With. Bot. arr. edit. 2. 151.
G. montanum. *Hudſ. angl.* 67. *Relh. cant. n.* 126. *Petiv. brit. t.* 30. *f.* 6. *Villars dauph.* 2. 317. *t.* 7.
Mollugo montana minor Gallio albo ſimilis. *Raii hiſt.* 482. *ſyn.* 224.
Leaves on the flowering ſtem in ſixes, lanceolate and ſlightly hairy; the reſt generally in fours, obovate; ſtem proſtrate, ſmooth.

6. Galium lucidum.
Allion. pedem. n. 21. *t.* 77. *f.* 2.
G. corrudæfolium. *Villars dauph.* 2. 320?
Leaves four to ſix rigid ſubulate bowed upwards, flowers panicled terminating, larger than the fruit, which is wrinkled.

7. Galium tinctorium.
Lin. ſpec. 153. *Reich.* 300.
Leaves on the ſtem in ſixes and linear, on the branches in fours, ſtem flaccid, one or two flowers on a peduncle.

8. Galium uliginoſum. *Marſh Ladies Bedſtraw.*
Lin. ſpec. 153. *Reich.* 300. *Fl. ſuec. n.* 127. *Hudſ. angl.* 68. *With.* 151. *Relh. cant. n.* 124. *Hall. helv. n.* 713. *Pollich pal. n.* 150. *Krock. ſileſ. n.* 217. *Villars dauph.* 2. 333. *Barrel. ic.* 82. *Thunb. jap.* 58.
Aparine paluſtris minor pariſienſis, fl. albo. *Vaill. par.* 14. *Raii ſyn.* 225.
Rubia quædam minor. *Bauh. hiſt.* 3. 716. 2.
Leaves in ſixes lanceolate, ſerrate-prickly backward mucronate ſtiff, corollas larger than the fruit.

9. Galium ſpurium. *Corn Ladies Bedſtraw.*
Lin. ſpec. 154. *Reich.* 301. *hort. upſ.* 28. *Hudſ. angl.* 68? *With.* 152? *Relh. cant. n.* 125. *Leers herborn. n.* 113. *Krock. ſileſ. n.* 218? *Villars dauph.* 2. 330.]
Aparine ſemine læviore. *Raii hiſt.* 484. *ſyn.* 225. *Mill. dict.* 1.
A. lævis. *Park. theat.* 567. 2.
A ſem. lævi. *Vaill. par. t.* 4. *f.* 3.
A fol. brevioribus & ſemine læviore. *Mor. hiſt.* 3. 332. 3.
Leaves in ſixes lanceolate keeled ſcabrous prickly backwards, joints ſimple.

[10. Galium tricorne. *Three-horned Ladies Bedſtraw.*
With. bot. arr. 153.
V. Aparine. *Lin. ſpec.* 1491. *Fl. ruſt. t.* 122.
A. vulgaris ſem. minori. *Vaill. par. t.* 4. *f.* 4.

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[f] Curtis, Hudſ. Wither. Woodw. Mſs. Linn.

G. hiſpidum. *Gærtn. fruct.* 109. *Hall. helv. n.* 725.
Leaves from ſix to eight; peduncles lateral, almoſt naked, trifid, pedicels bowed back; fruit tubercled.

11. Galium anglicum. *Engliſh Ladies Bedſtraw.* *Hudſ. angl.* 69. *With.* 153.
Aparine minima. *Raii ſyn.* 225. *t.* 9. *f.* 1.—ramoſior. *Mor. hiſt.* 3. 333. 4.
Leaves about ſix, lanceolate, acuminate, reflex, ciliate-prickly; ſtems ſpreading, rough with prickles, pointing backwards; corollas ſmaller than the fruit.

12. Galium ſaxatile. *Rock Ladies Bedſtraw.* *Lin. ſpec.* 154. *ſyſt.* 150. *Reich.* 301. *hort. cliff.* 34. *Hall. helv. n.* 718. *Krock. ſileſ. n.* 219. *Juſſieu act. par.* 1714. *t.* 15. *Villars dauph.* 2. 325.
G. helveticum. *Weigel obſ.* 24.
Leaves in ſixes obovate obtuſe; ſtem very much branched, procumbent.

13. Galium pyrenaicum. *Pyreneau Ladies Bedſtraw.* *Lin. ſyſt.* 150. *ſuppl.* 121. *Gouan bot.* 5. *t.* 1. *f.* 4.
Leaves in ſixes, flowers lateral oppoſite ſubſeſſile ſolitary.

14. Galium minutum. *Small Ladies Bedſtraw.* *Lin. ſpec.* 154. *Reich.* 302. *hort. upſ.* 28. *Gmel. ſib.* 3. 169. *n.* 45.
Leaves in eights lanceolate mucronate ſerrate-prickly ſmooth incurved, fruits reflex.

15. Galium puſillum. *Dwarf Ladies Bedſtraw.* *Lin. ſpec.* 154. *Reich.* 302. *Krock. ſileſ. n.* 220. *Hudſ. angl.* 69. *With.* 154. *Sowerby, Engl. bot. t.* 74. *Villars dauph.* 2. 324. *t.* 8.
Rubeola ſaxatilis. *Bauh. pin.* 334. *prodr.* 145.
Aparine minima ſ. Rubia ſaxatilis minima. *Magn. monſp.* 291.
Leaves in eights hiſpid linear acuminate; fruit ſmooth; peduncles dichotomous.]

16. Galium verum. *Yellow Ladies Bedſtraw,* or *Cheeſe-rening.*
Lin. ſpec. 155. *ſyſt.* 150. *Reich.* 302. *hort. cliff.* 34. *fl. lapp.* 61. *ſuec. n.* 123. *mat. med.* 50. *Hudſ. angl.* 69. *With.* 155. *Curtis lond. n.* 63. *Lightf. ſcot.* 115. *Relh. cant. n.* 127. *Fl. ruſt. t.* 54. *Hall. helv. n.* 710. *Scop. carn. n.* 153. *Pollich pal. n.* 152. *Neck. gallob.* 85. *Krock. ſileſ. n.* 221. *Blackw. t.* 435. *Miller fig. t.* 139. *Berg. phyt.* 2. 63. *Plenck, ic. t.* 54. *Thunb. jap.* 59.
Gallium. *Dod. pempt.* 355. *f.* 1. *Camer. epit.* 368.—luteum. *Bauh. pin.* 335. *Ger.* 967. 1. *emac.* 1126. 1. *Raii hiſt.* 482. *ſyn.* 224. *Mor. hiſt. ſ.* 9. *t.* 21. *f.* 1.—vulgare. *Park. theat.* 564. 1. *Petiv. brit. t.* 30. *f.* 8.
Gallion verum. *Bauh. hiſt.* 3. 720. 1.
Leaves in eights linear grooved, flowering branches ſhort.

17. Galium erectum. *Upright Ladies Bedſtraw.* *Hudſ. angl.* 68. *With.* 152.
Leaves moſtly in eights, lanceolate, with fine prickly ſerratures; panicles trichotomous; ſtem flaccid.

18. Galium Mollugo. *Great Ladies Bedſtraw.* *Lin. ſpec.* 155. *Reich.* 303. *hort. cliff.* 34. *fl. ſuec. n.* 125. *Hudſ. angl.* 68. *With.* 155. *Relh. cant. n.* 128. *Hall. helv. n.* 711. *Scop. carn. n.* 155. *Pollich. pal. n.* 154. *Neck. gallob.* 84. *Krock. ſileſ. n.* 224. *Fl. dan. t.* 455. *Plenck, ic. t.* 55.
Gallium ſ. Mollugo montana. *Ger. emac.* 1127. 4. quoad ic.
Mollugo belgarum. *Lob. ic.* 802.—vulgaris, &c. *id.* 802.—vulgatior. *Park. theat.* 565. *Raii hiſt.* 481. *ſyn.* 223. *Petiv. brit. t.* 30. *f.* 4.
Rubia anguloſa aſpera. *Bauh. hiſt.* 3. 716. 1.
Leaves in eights, ovate-linear, ſubſerrate, ſpreading very much, mucronate, ſtem flaccid, branches ſpreading.

[19. Galium ſylvaticum. *Wood Ladies Bedſtraw.* *Lin. ſpec.* 155. *ſyſt.* 150. *Reich.* 303. *Hall. helv. n.* 712. *Pollich pal. n.* 153. *Leers herborn. n.* 116. *Krock. ſiles. n.* 222. *Blackw. t.* 168.
Rubia ſylvatica lævis. *Bauh. hiſt.* 3. 716. 4. *Raii hiſt.* 481.
Mollugo vulgatior. *Mor. t.* 22. *f.* 1.—montana. *Park. theat.* 564. 3.
G. ſ. Mollugo montana. *Ger.* 968. 4. quoad deſcr.
Leaves in eights ſmooth and even but ſcabrous underneath; a pair of floral leaves on capillary peduncles; ſtem ſmooth and even.]

20. Galium linifolium. *Flax-leaved Ladies Bedſtraw.* *Mill. dict. n.* 8. *Ait. hort. kew.* 1. 144. *Barrel. ic.* 583. (Rubia).
Leaves in ſevens or thereabouts linear-lanceolate ſmooth and even, peduncles capillary, ſtem upright four-cornered.

[21. Galium rigidum. *Rigid Ladies Bedſtraw.* *Ait. hort. kew.* 144.
Leaves whorled linear ſcabrous above, panicles divaricate, ſtem upright round hairy and roughiſh.

22. Galium ariſtatum. *Bearded Ladies Bedſtraw.* *Lin. ſyſt.* 150. *Reich.* 304.
G. lævigatum. *Lin. ſpec.* 1667. *Villars dauph.* 2. 327.
G. bericum. *Turra diar.* 1764. *p.* 119.
Rubia lævis linifolia, flor. albis montis virginis. *Bocc. muſ.* 83. *t.* 75.
Leaves in eights lanceolate ſmooth and even, panicle capillary, petals awned.

23. Galium ſcabrum. *Lin. ſyſt.* 151. *Jacqu. auſtr.* 5. *t.* 422. *With.* 154.
Leaves about eight ſcabrous mucronate, flowering branches ſubtrichotomous.

24. Galium ſylveſtre. *Pollich. pal. n.* 151. *Krock. ſileſ. n.* 223. *Hall. helv. n.* 715.
G. aſperum. *Schreb. ſpicil.*
G. Boccone. *Allion. pedem. n.* 24? *Bocc. muſ. t.* 107. *Barr. ic.* 57?
G. album minus. *Vaill. par.* 78.
Leaves ſix to nine, linear-lanceolate, quite entire, awned; ſtems angular decumbent.

25. Galium hieroſolymitanum. *Lin. ſpec.* 156. *Reich.* 304. *amœn.* 4. 451.
Leaves in tens lanceolate-linear, umbels faſtigiate.]

26. Galium glaucum. *Glaucous Ladies Bedſtraw.* *Lin. ſpec.* 156. *ſyſt.* 151. *Reich.* 304. *mant.* 330. *Hall. helv. n.* 716. *Scop. carn. n.* 152. *Jacqu. auſtr.* 1. *t.* 81. *Fl. dan. t.* 609. *Krock. ſileſ. n.* 226. *Bocc. muſ.* 2. *t.* 116. *Allion. pedem. n.* 29.
Rubia montana anguſtifolia. *Bauh. pin.* 333. *prodr.* 145. *Raii hiſt.* 480.
Leaves linear, peduncles dichotomous, ſtem ſmooth and even.

[27. Galium cinereum. *Allion. pedem. n.* 22. *t.* 77. *f.* 4. *Villars proſp. p.* 202.
Leaves in ſixes linear rigid ſerrate-prickly, ſtems ſmooth flexuoſe filiform ſomewhat woody at bottom, branchlets upright leafleſs with about three flowers.

28. Galium tenuifolium. *Allion. pedem. n.* 23. *Villars proſp. p.* 19. *Ger. prov.* 226. *n.* 2.
Leaves ſix to eight linear grooved rigid, ſlightly and finely ſerrate, with a ſmall prickle at the end; ſtems diffuſely branched, each branch terminated by a panicle; peduncles two or three-flowered.]

29. Galium purpureum. *Purple Ladies Bedſtraw.* *Lin. ſpec.* 156. *Reich.* 305. *hort. cliff.* 34. *Hall. helv. n.* 721.
G. nigro-purpureum montanum tenuifolium. *Col. ecphr.* 1. 298. *Bauh. pin.* 335.
Leaves linear-briſtle-ſhaped, peduncles capillary longer than the leaves.

30. Galium rubrum. *Red Ladies Bedſtraw.* *Lin. ſpec.* 156. *Reich.* 305. *hort. cliff.* 34. *Scop. carn. n.* 154. *Pollich. pal. n.* 156. *Allion. pedem. n.* 20. *Krock. ſileſ. n.* 227. *Bauh. pin.* 335. *Mor. hiſt.* 3. 332. *Cluſ. hiſt.* 2. 175. *Park. theat.* 564. 2. *Raii hiſt.* 482.
G. ſprengerianum. *Bauh. hiſt.* 3. 721. *f.* 2.
Leaves linear patulous, peduncles very ſhort.

** *With a hiſpid fruit.*

31. Galium boreale. *Croſs-leaved Ladies Bedſtraw.*
Lin. ſpec. 156. *Reich.* 305. *fl. lapp.* 60. *ſuec. n.* 124. *hort. cliff.* 64. *Hudſ. angl.* 70. *With.* 156. *Lightf. ſcot.* 116. *Sowerby engl. bot. t.* 105. *Hall. helv. n.* 722. *Scop. carn. n.* 151. *Jacqu. vind.* 24. *Krock. ſileſ. n.* 228. *Villars dauph.* 2. 329.
Rubia pratenſis lævis acuto fol. *Bauh. pin.* 333. *prodr.* 145. *Raii hiſt.* 478. *Pet. brit. t.* 30. *f.* 7. *Bauh. hiſt.* 3. 716. 3.
Mollugo montana erecta quadrifolia. *Raii ſyn.* 224. *Bauh. hiſt.* 716. *f.* 3?
Leaves in fours lanceolate three-nerved ſmooth, ſtem upright.

[32. Galium piloſum. *Hairy Ladies Bedſtraw.*
Ait. hort. kew. 145.
Leaves in fours nearly oval hairy nerveleſs, ſeeds hairy.

33. Galium rotundifolium. *Round-leaved Ladies Bedſtraw.*
Lin. ſpec. 156. *Allion. pedem. n.* 31. *Krock. ſileſ. n.* 229. *t.* 42. *Jacqu. auſtr. t.* 94. *Hall. helv. n.* 727. *Villars dauph.* 2. 333. *Thunb. jap.* 59. (See Aſperula lævigata.)
Rubia quadrifolia vel rotundifolia lævis. *Bauh. pin.* 334. *prodr.* 145. *Raii hiſt.* 478.
Leaves in fours ovate obtuſe terminating in a very ſhort prickle, ciliate about the edge, three-nerved; ſtem procumbent.

34. Galium maritimum. *Sea Ladies Bedſtraw.*
Lin. ſyſt. 151. *Reich.* 305. *mant.* 38. *Allion. pedem. n.* 37. *Gouan illuſtr.* 5?
Leaves in fours hiſpid, peduncles one-flowered, fruits villoſe.

35. Galium bermudianum.
Lin. ſpec. 153. *Reich.* 306. *Gron. virg.* 16. (Aparine) *ed.* 2. 18. *Pluk. alm.* 224. *Raii ſuppl.* 261. 2. (Rubia).
Leaves in fours linear obtuſe, branches very much ſubdivided.

36. Galium græcum. *Candia Ladies Bedſtraw.*
Lin. ſyſt. 151. *Reich.* 306. *mant.* 38. *Alp. exot. t.* 166.
Leaves about ſix linear-lanceolate, ſtems woody, the whole plant rough with hairs.]

37. Galium Aparine. *Common rough Ladies Bedſtraw. Cleavers* or *Gooſegraſs.*
Lin. ſpec. 157. *Reich.* 306. *fl. ſuec. n.* 128. *Hudſ. angl.* 70. *With.* 157. *Lightf.* 117. *Relh. n.* 129. *Curt. lond.* 2. 9. *Hall. helv. n.* 723. *Scop. carn. n.* 157. *Pollich. pal. n.* 157. *Neck. gallob.* 83. *Leers herborn. n.* 117. *Krock. ſileſ. n.* 230. *Fl. dan. t.* 495. *Blackw. t.* 39. *Sabb. hort.* 1. *t.* 78. *Berg. phyt.* 2. 39. *Gærtn. fruct.* 110. *t.* 24. *f.* 1. (Aparine). *Plenck, ic. t.* 56.
Aparine. *Dod. pempt.* 353. *Fuchſ. hiſt. t.* 50. *Bauh. hiſt.* 3. 713. *Ger.* 963. 1. *emac.* 1122. 1. *Raii hiſt.* 484. *ſyn.* 225. *Mill. dict.*—vulgaris. *Bauh. pin.* 334. *Park. theat.* 567. *Mor. hiſt. ſ.* 9. *t.* 22. *f.* 1. *Petiv. brit. t.* 30. *f.* 11.
Leaves in eights lanceolate, keels ſcabrous with prickles pointing backwards, joints villoſe.

38. Galium pariſienſe.
Lin. ſpec. 157. *Reich.* 307. *Relh. cant. n.* 130. *Villars dauph.* 2. 332. *Barr. ic.* 58.
Aparine minima. *Raii ſyn.* 225. *t.* 9. *f.* 1? See G. anglicum. n. 11.
Leaves linear, peduncles two-flowered.

[39. Galium megaloſpermum.
Allion. pedem. n. 35. *t.* 79. *f.* 4.
Leaves in fives elliptic acuminate finely ſerrate, peduncles two-flowered, fruits large wrinkled.]

40. Galium ſaccharatum.
Allion. pedem. n. 39. *Villars dauph.* 2. 331.
Aparine ſem. coriandri ſaccharati. *Park. theat.* 567. *Raii hiſt.* 484. *n.* 3. *Mill. dict. n.* 2.

[41. Galium umbroſum.
Forſt. fl. auſtr. n. 500.

42. Galium viſcoſum.
Vahl ſymb. 2. 29.
Lower leaves in fours obovate, upper ones in ſixes, linear-lanceolate ſerrate, keel and ſtem ſmooth.

43. Galium paſchale.
Vahl ſymb. 2. 29. *Forſk. deſcr.* 203.
Leaves in nines or thereabouts linear-lanceolate rugged backwards, peduncles axillary, elongated trichotomous.

44. Galium aparinoides.
Vahl ſymb. 2. 30. *Forſk. deſcr.* 30.
Leaves in ſixes oblong, on the edge and along the keel prickly backwards, joints ſmooth.

45. Galium album.
Vahl ſymb. 2. 30.
Leaves in eights or thereabouts oblong unarmed rugged on the edge, ſtem pubeſcent even.

46. Galium microcarpum.
Vahl ſymb. 2. 30.
Leaves in ſixes or thereabouts, lower ones oblong, upper ones briſtle-ſhaped, peduncles trifid.

47. Galium tuberoſum.
Lour. cochinch. 79.
Leaves in fives lanceolate, peduncles heaped axillary.

48. Galium cruciatum. *Croſs-wort.*
Eng. bot. 143.
G. Cruciata. *Scop. carn. n.* 100. *Wither. arr.* 149.
Valantia Cruciata. *Lin. ſpec.* 1491. *Hudſ. angl.* 441. *With.* 1139. *Relh. cant. n.* 739. *Villars dauph.* 2. 334.
Cruciata. *Raii ſyn.* 223.—hirſuta. *Bauh. pin.* 335. *Blackw.* 76. *Ger.* 965. *emac.* 1123. 1. *Park.* 566. *Mor. hiſt. ſ.* 9. *t.* 21. *f.* 1.
Leaves in fours ovate hairy, ſtem ſimple above, hairy, bunches of flowers lateral with two leaves, flowers polygamous, fruit ſmooth.]

DESCRIPTIONS, &c.

Root uſually dying red, in moſt of the ſorts perennial. Stems herbaceous, four-cornered. Leaves ſeſſile, in whorls or ſurrounding the ſtem in form of a ſtar. Flowers either terminating in a kind of panicle, or elſe axillary. Fruit ſmooth, wrinkled or ſet with hooked ſtiff hairs or prickles.

1. This has the appearance of *G. boreale*, but the leaves are double the breadth, with the nerves three in number, and ſcabrous underneath. The ſtem firm and upright. The panicle of flowers ſhort and conglomerate. The ſeeds ſmooth and even [a]. Stems a foot high and more, ſlender, ſwelling at the joints, purpliſh brown, rough when rubbed from the bottom upwards. Leaves reflex on the edge, but not at the end. Corolla white. Seeds very ſmooth and gloſſy [b].

Native of the Palatinate, Sileſia, Idria, &c. flowering in july.

Perennial. Introduced in 1775, by Drs. Pitcairn and Fothergill [c].

2. Root ſlender, creeping, perennial. Stem flaccid, branched from the joints, a foot or more in length, the corners ſet with ſharp hooked prickles, pointing downwards. Leaves in fours on the branches, on the ſtem ſometimes five or even ſix, under the flowers in pairs, thoſe at the baſe of the branches largeſt, of different ſizes in the ſame whorl lanceolate, obovate, or ovate-lanceolate, very obtuſe, ſmooth except at the keel and edges, which are ſet with very ſhort hooked hairs. Flowers numerous, white, on lateral and terminating peduncles, which are uſually trifid, and ſubdivided [d].

Common on the banks of rivers and ditches, and in moiſt meadows; flowering in july.

Dr. Withering has obſerved a dwarf variety, ſimilar to the foregoing, but ſcarcely a foot in length; reſembling the figure of *G. trifidum* in the *flora danica*, but readily diſtinguiſhable by the corolla of four diviſions, and the divided peduncles.

Dr. Withering has alſo obſerved another variety, reſembling the *paluſtre*, except that the leaves grow in ſixes. Dr. Stokes remarks, that the leaves are narrower, but always blunt and generally unequal; that it is as large as the *paluſtre*; that the branches are next in roughneſs to thoſe of *G. Aparine, ſpurium,* and *Valantia Aparine*; that he has been accuſtomed to refer it to the *uliginoſum*; but that the inequality and bluntneſs of the leaves, and the want of the thorn-like point at the end of them, induces him to believe it, with Haller and Ray, to be a variety of the *paluſtre*; though, being found in the ſame ſituations, it is not unlikely but it may turn out to be a diſtinct ſpecies.

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[a] Linn. ſpec. [b] Scopoli, Pollich, Krocker. [c] Hort. kew. [d] Withering, Stokes in With. Pollich, Leers, Krocker.

3. Root annual, very ſmall and ſlender. Stem ſlender, bent back, ſtiffiſh, hairy, very much branched from the bottom almoſt to the top, the branches three or four together, divaricate. Leaves broadiſh, obtuſe, ſmooth, only a little ſcabrous underneath. Peduncles uſually in threes, very ſlender, the length of the leaves, one-flowered; the flowers very ſmall, white and three-parted. Stamens three. Fruit very ſmall, ſmooth and even.—Native of Denmark, Sileſia, Canada[e]. It flowers in july.

4. Stature between *G. Mollugo* and *glaucum*. Stem weak, rough. Leaves in fives on the ſtem, reflex, ſublinear; on the branches in fours. Flowers in trifid corymbs, white, purpliſh on the outſide before they expand. Anthers brown[f].—According to Haller the leaves are in eights. Pollich makes them eight on the ſtem, and ſix on the branches. Krocker, five to eight on the ſtem, and four to ſix on the branches. Haller deſcribes the ſtem to be three feet high, round, firm, upright, ſwelling under the leaves, not much branched. Leaves narrow, hollow and glaucous underneath, ending in a ſhort awn ſharper towards the top of the ſtem; ovate-lanceolate, and ſmaller under the flowers. Peduncles branched, many-flowered, ending in a kind of convex umbel. The flower is among the largeſt of this genus, and white. The peduncle ſwells under the ſeeds.

Pollich adds, that the ſtem is very ſmooth, glaucous-green, and ſays that it is divided into many branches: that the leaves are hardiſh, a little rolled back on the edge, ſmooth and glaucous above, ſcabrous, whitiſh, and grooved beneath.

The root, according to Krocker, is reddiſh. The ſtem eighteen inches high, ſcabrous, branched very ſmooth, glaucous, upright, obſcurely four-cornered.

Theſe deſcriptions do not perfectly agree; and after all, Gouan (illuſtr. p. 6) is of opinion that this and the *glaucum* are but one ſpecies.

Native of Germany and Switzerland.

5. Diſtinguiſhable from G. paluſtre (ſays Ray) by its ſmallneſs, ſmoothneſs of its ſtems and leaves, and place of growth, namely on hills.—Perennial. Stems and branches matted together, and ſpreading on the ground. Flowering-ſtem from two to ſix inches high, twiſted, appearing cylindrical to the naked eye, but when magnified to have four rounded corners. Leaves often in fours at the bottom of the ſtem, five about the middle, and ſix at the top, unequal in ſize in the ſame whorl, ſometimes obovate-lanceolate, the edges beſet with minute prickly hairs pointing towards the end, the keel ſmooth: thoſe of the branches ſometimes in fives. Peduncles lateral and terminating, ſingle, bifid or trifid, ſpringing from the whorls at the joints of the ſtem.—Lightfoot takes this to be only a variety of *uliginoſum*, growing in dry and mountainous paſtures: but Dr. Stokes has found it to be the ſame in marſhes as on hills. Heaths and mountains, alſo in marſhy places. In Dudley wood. It flowers from june to auguſt[g].

6. Perennial. Stem very much branched next the root. Flowering ſtems upright, ſimple, ſharply quadrangular, herbaceous, green. The whole plant ſhining. Leaves in ſixes, then fives or fours, half round, ſubulate, ſomewhat ſcabrous about the edge, but hardly to be known by the touch, bowed upwards. Flowers in a terminating panicle; corolla white, larger than the fruit, which is oblong-ovate, bowed in, black and wrinkled.—Native of the county of Nice, &c. in dry places: alſo probably in Dauphiné[h].

7. This abounds in the woods of Canada; the roots are employed by the Indians in dying the quills of the American porcupines red. The French women there ſometimes dye their clothes with theſe roots, which are but ſmall, like thoſe of *G. luteum*. Neither air, ſun, nor water change the colour[i].

8. Root perennial, creeping, ſlender. Stems from procumbent erect, often putting out roots at the baſe, from a finger's length to a foot or eighteen inches, the corners rough, with very minute prickles; two or more branches ſpringing from each joint. Leaves ſix, ſometimes ſeven or eight, or even nine in a whorl; five lines long, and one broad, lanceolate, not much bent back at the edge, which is ſet with very minute prickles; in other parts they are ſmooth, of a bright green above, but glaucous underneath. Flowers in panicles at the ends of the ſtem and branches, in trifid diviſions, the peduncles very ſhort: at the baſe of theſe a pair of leaflets or bractes. Corolla white, larger than the fruit; Haller ſays it has a tinge of roſe colour. Anthers very ſmall, purpliſh[k]. Fruits rough, according to Tournefort[l].

Native of Sweden, France, Germany, Switzerland, Great Britain; on wet heaths, in bogs, low meadows, by river ſides, and other watery places. It flowers in july and auguſt.

9. Stem quadrangular, proſtrate, hardly branched, prickly downwards at the corners. Leaves uſually in ſixes, ovate-lanceolate, prickly backwards, keeled. Peduncles axillary and terminating, bowed in, three-flowered, all the flowers hermaphrodite. Seeds globular, ſmoothiſh. Style bifid. Stigmas globular. Bractes ſubulate at the baſe of the pedicels[m].

Such certainly is our Cambridgeſhire plant, and it agrees with the ſpecific character given by Linneus, as alſo with his obſervation, that it is allied to *G. Aparine*, but is ſmaller.—Haller aſſures us that the ſpecimen ſent him by Mr. Hudſon was *Valantia Aparine*; and Dr. Stokes informs us that his ſpecimens from the garden of Mr. Sole at Bath, who probably had his plants from Cambridgeſhire, were alſo *V. Aparine*; and yet none but hermaphrodite flowers have been obſerved by the late Mr. Lyons, Mr. Relhan, or myſelf.—There can be no doubt of our plant being *Aparine ſemine læviore* of Ray; who ſays that it is of a lower growth than *G. Aparine* or common Gooſe-graſs, with the runners or bottom branches ſhorter; the leaves ſmaller, leſs hirſute and paler; the ſeeds not entirely ſmooth, but much leſs hirſute.—Haller's deſcription is very ſhort, but as he aſſerts that all the flowers are androgynous, ours can ſcarcely be the ſame plant with his n. 724. Nor is it his n. 725, though he makes *A. ſem. lævi* of Vaillant, and *A. ſem. læviore* of Ray, ſynonymous with it; for that alſo has androgynous flowers. Gærtner has a ſpecies (p. 109) which he calls *Galium hiſpidum*, and which he makes ſynonymous with this of Haller: and they are both ſynonymous with *Valantia Aparine* of Linneus. See n. 10. Nor can it be Krocker's *G. ſpurium*, to which he attributes pale yellow flowers. It agrees very well with the deſcription given by Leers.—Stems ſcarcely a foot high, diffuſed; joints equal, naked; leaves at bottom ſix, above four. Fruit ſmooth, at length becoming wrinkled and brown.—There is little doubt but that it is the ſecond Aparine of Parkinſon, though he deſcribes the leaves as not at all rough, or ſticking to what they touch. It is alſo the third *Aparine* of Moriſon.—Neither of theſe authors have figured it.

It is very common in the corn in Cambridgeſhire, eſpecially where the ſoil is calcareous, as about Gogmagog hills, Linton, &c. Alſo in various parts of Oxfordſhire.—According to Hudſon, in the iſle of Thanet; about Leatherhead and elſewhere

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[e] Linn. ſpec.
[f] Linn. ſpec.
[g] Withering & Stokes in With.
[h] Allioni.
[i] Kalm. amer. engl. edit. 3. 14.
[k] Pollich, Haller, Krocker, Relh.
[l] Fl. paris.
[m] Lyons in Relh. cant.

where in Surrey; and near Stamford.—In the iſle of Wight, as Dr. Withering ſays.

It is an annual plant, and flowers in june and july, and even later in the ſtubble after the corn is off.

10. Leaves from ſix to eight, the upper ſurface ſmooth, the rib underneath rough. Umbels on peduncles, generally two to a whorl, oppoſite, dividing into three branches, not leafy at the baſe. The peduncles are prickly, bear three flowers, and are curved downwards. Fruit roughiſh, beſet with a number of minute tubercles, but which do not end in hairs.

This plant appears to be different from Aparine ſemine læviore of Ray, which is commonly taken for G. ſpurium of Linneus. It much reſembles G. Aparine, and is clearly of the ſame natural genus with the Galiums, although Linneus inſerts it among the Valantias.

11. Root annual, branched. Stems from a foot to eighteen inches in height, the corners rough with prickles pointing backwards, jointed, branched, branches alternate, flowering branches oppoſite. Leaves ſix or ſeven in a whorl, reflex, lanceolate or linear-lanceolate, naked. Panicle terminating; peduncles trifid. Corolla greeniſh yellow, ſmall. Seeds larger than the corolla, ſmooth [n].—The prickly hairs at the edge of the leaves point forwards; and ſometimes there are a few ſcattered hairs on the ſurface; thoſe of the branches are generally in twos, as in Ray's figure. Branches rough. Peduncles ſmooth, generally dividing into three, one of them ſupporting two flowers; ſometimes dividing ſimply into three or two [o]. Flower herbaceous, ſeed ſmall, roundiſh, leſs rough than in the other ſpecies of Aparine [p].

Dr. Stokes cannot diſcover any difference between *G. pariſienſe* of Linneus and *G. anglicum* of Hudſon, except in the roughneſs and ſmoothneſs of the fruit, which induces him to believe that they are mere varieties.

Found by Sherard on a wall at Hackney, and at Eltham—by Hudſon, in ſandy ground between Dartford and Northfleet, and on a wall at Farningham in Kent—by Mr. Crowe, on the walls of Binham church in Norfolk.

12. Scarcely a hand high. Root large, producing a prodigious number of ſtems, which are angular. Leaves in great abundance, without any prickle at the end. Peduncles one-flowered, very ſhort, ſcarcely emerging from the leaves, even when the ſeed is ripe. Seeds very large, wrinkled. This is Haller's deſcription, who doubts very much, whether his plant be the ſame with that of Linneus.—Krocker ſays that it has a ſmall, ſlender, creeping root: a ſmooth ſtem, a hand or a foot in height; five or ſix leaves, oblanceolate or obovate, ſmooth, ending in a ſlender tip; the flowers axillary, the peduncles ſuſtaining one to four flowers, in a corymb, the corymbs four to ſix-flowered, ſhort. Corollas white. Seeds large. Perhaps this may be the *ſaxatile* of *Moench*, and the *harcynicum* of *Weigel*. It is an annual.

Native of Spain and Switzerland, on mountain rocks.

13. Stems weak, of a finger's length, and branched; the internodes ſcarcely the length of the leaves, which are ſmooth, ſomewhat convex, and mucronate. Native of the Pyrenees [q].

14. This very much reſembles *G. verum*, but it is leſs than a hand in height, and is decumbent. Stem quite ſmooth, not ſcabrous even about the edge. Leaves a little convex, not bent back on the edge. Fruit fleſhy, large, with the peduncles reflex, whence they are conglomerate.—Native of the Empire of Ruſſia. Perennial [r].

15. Root branched, perennial. Stems numerous, from three to ten inches high, branched, the corners commonly rough with prickles. They form large tufts, covered with innumerable milk-white flowers, very conſpicuous at a diſtance. Leaves ſeven or eight, lanceolate or linear, ſcabrous, tipped with a ſhort pale briſtle; the lower ones imbricate. Seeds ſmall. It is allied to G. uliginoſum [s].—Not only the corners of the ſtem, but the edges and midribs of the leaves are rough, with ſhort ſpreading hairs. Leaves rarely up to eight [t]. In the Engliſh Botany it is ſaid from ſix to eight, or even nine in a whorl, equally ſpreading.

Native of Provence. On the limeſtone hills near Kendal in Weſtmoreland; flowering in auguſt.—Matlock Bath, Derbyſhire. July.

16. Root perennial, creeping, ſlender, ſomewhat woody, of a yellow colour. Stem from one to two feet high, upright, ſlightly four-cornered; ſomewhat flexuoſe, ſcabrous, pubeſcent below ſlightly, above more obviouſly, pale green, branched towards the top; the joints cylindrical, ſubovate, whitiſh, ſurrounded with a ſlight margin: branches brachiate, oppoſite, alternately much ſhorter. Leaves about an inch in length, bluntiſh with a ſlight point, narrowed at the baſe, the edges rolled back, and rough with minute prickles turned upwards, viſible only with a magnifier, above ſlightly wrinkled, dark green and gloſſy, underneath hollowed and paler; the lowermoſt uſually eight in a whorl, but not unfrequently ten, the upper ones decreaſing to ſeven; and ſo down to two, and even one at the extremities of the branches. Flowers in a panicle, numerous, ſmall, fragrant with a peculiar odour. The panicle about a ſpan in length, interrupted, branched; the branches many-flowered, unequal, leafy, with ſingle leaflets on the pedicels. Corolla yellow [u]. It is obſerved by Dr. Withering, that the ſegments of the corolla are greatly expanded; that the ſtyle is cloven more than half way down; and that not only the corolla, but the ſtamens alſo and piſtil are yellow. It is common in moſt parts of Europe, in paſtures, and by the ſides of fields and roads, in a dry ſoil; flowering from june to auguſt and ſeptember. It will flouriſh in the moſt unremitting drought, when not a blade of graſs is to be ſeen.

Beſides the names ſet down in the title, Gerarde ſays it is called *Maid's-hair*, and *petty Mugwet*; which laſt is from the French *petit Muguet*. I muſt obſerve that the common name *Bedſtraw*, (which we have from the German) is from the verb *to ſtrew* or *ſtrow*, anciently written ſtraw; thus the multitude *ſtrawed* branches in the way before Chriſt. Before the invention of feather-beds, a variety of herbs were uſed to ſtrew beds with; among theſe doubtleſs this was one: in Johnſon's edition of Gerarde, it is called *our Ladies Bedſtrow*. (p. 1127.) Strawberry is derived from the ſame origin.

It is an inveterate notion that the flowers and herb of this plant will curdle milk. Dioſcorides names it Γαλιον from this property. The ſame property is attributed to it by Galen. Matthiolus informs us that in Tuſcany they uſe it for this purpoſe, in order that their goat and ſheep's milk cheeſe may eat the ſweeter: Gerarde, who was a Cheſhire man, ſays, that in his country, eſpecially about Namptwich, they uſe it in their rennet, eſteeming that the beſt cheeſe which is made with it: and in ſome of the Weſtern iſles they curdle milk with a ſtrong decoction of this herb. Though no coagulation has followed in the experiments which I have ſeen tried, yet I ſhould not perhaps have ventured to diſpute the fact, were I not ſupported by Bergius and Krocker, who could not ſucceed in coagulating milk with this herb alone. The *Galium* has probably been put into milk deſtined to make cheeſe, not ſo much for the purpoſe of curdling it, as of giving it a flavour, or, as Matthiolus expreſſes it, to make it eat the ſweeter.

The French preſcribe the flowers in hyſteric and epileptic caſes [x]. Both theſe and the leaves diſcover a ſenſible acidity to the taſte; and the flowery tops committed to the ſtill as ſoon as gathered, give over (ſays Lewis) a pretty ſtrong acid liquor in a moderate heat. The reſtringent and refrigerating virtues therefore aſcribed to this plant appear to have ſome foundation[y]. From this account I ſhould have been rather ſurpriſed that the trials to curdle milk have not ſucceeded with Bergius, Krocker and myſelf, had not the former aſſured us that he could not procure any acid in diſtillation.

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[n] Hudſon.

[o] Stokes in With.

[p] Ray.

[q] Linn. ſuppl.

[r] Linn. ſpec.

[s] Hudſon.

[t] Woodw. Mſs.

[u] Curtis.

[x] Withering.

Boiled in alum-water, the flowering ſtems dye of a good yellow colour. The roots dye a very fine red, not inferior to madder, but they are ſmall[z]. An ingenious gentleman, however, converſant in dying, aſſured Mr. Curtis, that the roots produced a brighter colour than Madder; and on that account they may be worth trying, eſpecially as the reſt of the plant may be ſucceſsfully uſed in dying yellow.

They were cultivated a few years ſince under the direction of the Committee of Privy Council for Trade. The roots were ſuppoſed on an average to weigh ſeven ounces; and the produce, when dry, to be twelve hundreds and an half on an acre[a].

The roots of moſt of the plants belonging to the natural order of Stellatæ yield more or leſs of a red dye. Not only this ſpecies, but Galium ſylvaticum, Mollugo and Aparine are recommended for this purpoſe. So alſo are Aſperula arvenſis, tinctoria, and cynanchica. See Arduini memoires, 1. p. 55. Steinmeyer diſſ. de Rub. tinct. Memoires de l'Acad. Franc. 1746. p. 104. Memoires des Savans Etrangers. 4. p. 4. Pollich palat. Linn. ſuec. & Act. Holm. 1742. Allioni fl. pedem. &c.

17. Root perennial, branched. Stems ſeveral, rather upright, ſwelled at the joints, roughiſh at the corners, a little hairy, branched; flowering branches oppoſite. Leaves eight, ſometimes ſix only in a whorl, lanceolate or linear-lanceolate, naked. Panicle terminating, dividing into threes. Flowers white. Seeds ſmall[b]. Dr. Stokes adds, that the whorls of leaves are from four to five inches diſtant, and bent back; that the ſerratures are directed towards the point of the leaf, and not bowed back as in the other rough-leaved ſpecies; and that his ſpecimen agrees with Mr. Hudſon's deſcription in every reſpect, except that the ſtem is ſmooth. Mr. Hudſon refers to the *G. auſtriacum* of Jacquin (fl. auſtr. 1. t. 80.) as the ſame plant with this, but Dr. Stokes aſſures us that it is quite different.

In meadows and moiſt paſtures. Found in Heydon common, Norfolk, by Mr. Bryant. It flowers in june and july.

18. The whole plant is ſmooth to the touch. Root perennial, creeping. Stem two, three and four feet high, and even more, generally depreſſed, unleſs ſupported by the weight of the branches, quadrangular (by which it is diſtinguiſhed from the next ſpecies), thickeſt juſt above the joints. Leaves uſually eight on the ſtem, and ſix on the branches, in every whorl, unequal, oblong-ovate, or lanceolate, ſuddenly tapering to a ſharp point, a little hairy on the keel, and at the edges, but not rough to the touch. Flowering branches very much branched, ſuſtaining abundance of white flowers, the four ſegments of which are lanceolate and pointed: they riſe from the whorls of leaves, generally two long and two ſhort ones from each whorl, forming in the whole a panicle. The ſtyle is cloven down to the germ, or more properly there are two ſtyles. One ſeed is generally much larger than the other[c].

Common in hedges and buſhy places: flowering from june to auguſt. It is called *Wild Madder*, and *Great Baſtard Madder*. The roots yield a red dye, like the true Madder, and of a brighter colour: like that alſo, they dye the bones of animals, that feed on them, red.

Varieties.

I have obſerved it ſometimes with flowers of a pale yellow colour.—Scopoli enumerates four varieties: 1. with the bottom leaves emarginate. 2. with the leaves rounded at the end, the nerve ending in a point or prickle. 3. with the leaves toothletted or ſerrulate, each indentation ending in a prickle, which correſponds with our common plant. 4. with the leaves quite entire and reflex, a ſmall alpine plant, only a finger's length. This Dr. Stokes has obſerved on Malvern hills: he is of opinion that *Mollugo montana minor, Gallio albo ſimilis* of Ray, comprehends this variety, as well as the *G. procumbens*. Haller alſo mentions this variety.

19. Stems lofty, weak, ſmooth and even, very obſcurely cornered or roundiſh. Leaves broad-lanceolate, ſcabrous on the keel and about the edge, becoming glaucous. Peduncles elongated, the outmoſt often two-flowered, and near theſe two leaflets. Flowers very minute, nodding before the flowers open[d]. The ſtem thickens at the joints, and is from one to two feet in height. Branches ſingle or many from the ſame joint. Leaves in a whorl from eight to ten, ſometimes only ſix, mucronate; the keel not always ſcabrous. Segments of the corolla very broad, and at the end ſharp: ſtyle very ſhort. Seed round, black, wrinkled; uſually only one in a pair comes to maturity. The whole plant is ſomewhat glaucous; it is ſtouter, the ſtem ſwells more under the whorls of leaves, than in *G. Mollugo*, and the angles are hardly to be obſerved. The root is perennial, yellowiſh on the outſide; and affords a very fine red dye like the laſt.

Native of Germany, Switzerland, and the South of Europe, in woods; flowering from june to auguſt. Cultivated in 1713.

20. Native of the South of Europe. Cultivated in 1759, by Mr. Miller. It flowers in june and july, and is perennial.

21. Perennial. Flowering in june. Introduced in 1778[e].

22. Perennial. The whole plant ſmooth and even. Stem a foot high. Leaves eight or nine in a whorl, nicely lanceolate, by no means ſtiff[f]. Native of Italy, on monte Baldo, and Ceniſio. It flowers in july. Introduced in 1778, by Mr. Thomas Blackie[g].

23. Perennial. Stems upright, cloſely beſet with very ſhort ſoft hairs. Leaves ſometimes in ſevens, thoſe of the branches fewer, beſet with ſoft hairs, linear, grooved, the edges turned in; the lower ones bent down. There is no appearance of prickles on the ſtem or leaves. Flowering branches oppoſite, one always ſhorter than the other. Peduncles ſmooth[h].—Found by Dr. Stokes in a hedge-row, in a marly ſoil, on the ſide of Red Houſe Lane, near Worceſter; flowering in auguſt.—In Auſtria, by Profeſſor Jacquin.

24. Root ſmall, very ſlender, creeping. Stems from a ſpan to a foot in length, and more, brittle, ſlender, proſtrate, a little hairy at bottom. Leaves quite entire, ending in a fine long prickle; the lower ones ſomewhat rough, with hairs about the edge, the upper ones ſmooth, but ſometimes they are all hairy. Panicles terminating and axillary, ſhort; peduncles branched, not very leafy, bifid or trifid. Corolla white. Style very deeply cloven. Seeds minute, round, cloven[i].

Native of France, Germany and Switzerland, where Haller informs us it is frequent by way ſides, in corn-fields and ſtony places: it is alſo found in the Alps, and there becomes a more humble creeping plant. He mentions ſeveral varieties.

25. In ſtature this approaches very near to *G. rubrum*. Native of Paleſtine[k].

26. Root perennial, ſomewhat creeping, branched. Stems ſlender, weak, proſtrate, gloſſy. Leaves five or ſix, gloſſy, glaucous underneath, hardly ſcabrous on the edge, the lower ones turned back. Flowers white, in ſubtrifid, ſmall umbels[l].—According to Haller and Jacquin, there are eight leaves in a whorl—according to Allioni ſix or ſeven, ſerrate on the edge—according to Krocker, eight or even nine in the lower ones, but five or ſix in the upper ones;—Scopoli aſſigns only ſix to the lower whorls, four to

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[y] Lewis.

[z] Withering and Lightfoot.

[a] Young's annals, vol. 18.

[b] Hudſon.

Withering, Stokes in With. Relhan, Ray, Pollich, Scopoli, Haller.

[d] Linn. ſpec. & ſyſt.

[e] Hort. kew.

[f] Linn. ſpec.

[g] Hort. kew.

[h] Stokes in With.

[i] Haller, Pollich, Krocker.

[k] Linn. ſpec.

[l] Ibid.

the upper ones, and two only to thoſe on the branches.—Haller ſays that it reſembles n. 24.—that the ſtem is upright; the leaves glaucous, thicker, terminating in ſhorter awns; the upper ones fewer, broad, ovate-lanceolate. The top of the ſtem, and the branches ſubdivided, bearing flowers of four times the ſize, in upright bunches.

Native of the South of Europe, Tartary and Siberia, in mountain woods and fiſſures of rocks. It flowers in our gardens from june to ſeptember, and was cultivated in 1713[m].

27. Perennial. This is an elegant ſpecies covered with a glaucous bloom; when this bloom is wiped off, the plant is of a ſhining, not a dark green. Stems obſcurely quadrangular. Leaves of a long elliptic form, wider at the end, and terminating in a remarkable white prickle. A panicle of flowers terminates the ſtem and branches, the extreme peduncles bearing uſually three flowers, one of which is abortive. Seeds large, dirty white, ſmooth, but when full ripe wrinkled. It is not the *glaucum* of Linneus, the linear leaves of which are longer, not ſpreading, not ſerrulate-aculeate; the branches alſo in that are terminated rather with an umbel than a panicle of flowers. Native of Piedmont and Dauphiné[n].

28. Perennial. Stems eighteen inches high, ſmooth, ſharply quadrangular. Branches oppoſite, one longer than the other. Leaves eight at bottom, diminiſhing till they come to two, or even one; truly rigid, not ſoft and flexible, ſmooth, but not ſhining. Peduncles very much branched, capillary, longer than the leaf, divaricate. Segments of the corolla large, white and awned. Seeds ſlightly wrinkled, but neither hairy nor rough; the colour of them black[o].

Native of the county of Nice, Provence and Dauphiné.

29. Stem upright, very much branched, and ſo leafy that the leaves can hardly be numbered. They are uſually in eights, ſmooth, and keeled underneath. Branches aſcending, and from their axils innumerable peduncles, above the leaves upright, ſuſtaining few flowers: theſe and the ſtems are dark purple; and the roots dye red[p].—By Lago Lugano: near Ripa and Chiavenna: in the counties of Nice, Montferrat, &c.—Perennial.

30. Root perennial, ſlender. The whole plant pale green. Stems ſlender, proſtrate, near a foot in length, rough with ſmall prickles. Leaves on the ſtem ſix or ſeven in a whorl, on the branches four or five, bent down, lanceolate, quite entire, duſky green, ſmooth, but the edge very rough with prickles, and a little prickle at the end; they are three lines in length, and half a line in breadth; the upper leaves are in pairs. The flowers are very ſmall, of a pale purple colour (fuſco-rubri, *Scop.*) or white, diſpoſed in panicles at the end of the ſtem and branches[q]. This differs from the foregoing ſpecies, with which it ſeems to have been confounded by ſeveral authors, by the leaves not being elliptic, nor ſpreading out; alſo by the ſhortneſs of the peduncles, and its manner of flowering: for in *G. purpureum* the flowers are terminating, rather panicled; purple, not reddiſh brown[r].

Native of the Palatinate, Sileſia, Carniola, and Italy. It flowers in july and auguſt.

31. Root perennial, long, ſlender, dark purple. Stems a foot or eighteen inches in height, obſcurely quadrangular, ſtout, much branching at top; the lower part ſmooth, the upper ſlightly hairy: or, according to Engliſh Botany, rough to the touch, though not hairy. Leaves lanceolate or oval-lanceolate, rough to the touch, quite entire, blunt, bent back at the edges, having a ſtrong nerve along the middle, and a ſmaller one on each ſide; at the end of each branch a pair of ſmall ſtipular leaves, oval or ovate, and ſlightly hairy. Flowers copious, in a terminating panicle, formed of racemes or corymbs growing gradually ſmaller. Corolla white, with ovate ſegments. Styles two. Fruit covered with long, ſoft whitiſh hairs, ſlightly curved upwards.

Native of Lapland, Sweden, Sileſia, Switzerland, Carniola, Britain; as in the mountains of Weſtmoreland and Wales: near Pooley bridge by Ulſwater, in Cumberland: near the ferry at Winander meer. In the county of Durham. In Scotland not unfrequent on rocks by the ſides of rivers and lakes. It flowers in july and auguſt.

This is one of the ſpecies whoſe roots afford a beautiful red dye. The proceſs is thus deſcribed by Haller—The roots are gathered in ſpring, they are ground with malt duſt, and infuſed in ſmall beer, the woollen yarn is macerated, and then boiled in this liquor. Gunner adds that the yarn is firſt dyed yellow in a decoction of birch leaves.

32. Perennial. Native of North America. It flowers in june and july. Introduced in 1778, by John Fothergill, M.D.[s]

33. Root perennial, ſlender, creeping, cinnamon-coloured. Stem weak, a foot long, ſlightly grooved; branches alternate, green at bottom, pubeſcent, with very ſhort hairs, and leafy; frequently purpliſh above, naked and jointed. Leaves ſubpetioled, four or very ſeldom five in a whorl, ſpreading, broad, with very ſhort hairs on the nerves and at the edges; towards the top of the ſtem, where it terminates in two or three almoſt dichotomous peduncles, is placed a pair of lanceolate leaves. Peduncles naked, an inch or two inches in length, bifid, ſeldom trifid, diverging, each terminating in a ſolitary flower, and filiform. Corolla white. Seeds white, bearded with long hairs[t]. See Aſperula lævigata.

Native of Sileſia, Switzerland, Savoy, Auſtria, &c. It flowers in july and auguſt.

34. Root perennial. Stem brachiate, rough with hairs, very much branched; the laſt branches dichotomous. Leaves in fours, rarely fives; the upper floral ones frequently in pairs; lanceolate-ovate, rough, with hairs on both ſides, the uppermoſt ſubpetioled. Peduncles capillary, ſhorter than the leaves, uſually one-flowered, ſeldom bifid. Flowers ſmall[u].

Obſerved in the Levant, by Schreber.—If it be Gouan's plant, it is alſo native of Montpellier, the Pyrenees, and the County of Nice: but according to Gouan the leaves are eight in a whorl.

35. Whorls of leaves very diſtant; flowers dark purple; ſeed lanuginoſe. Native of Virginia and Mariland.

36. Stems variouſly bent and twiſted, and ſomewhat woody: branches ſtraight, ſtiff, herbaceous, rough with white villoſe hairs, as are alſo the leaves, peduncles and germs. Leaves ſtiff, upright, the length of the internodes, ſparingly hairy, green. Peduncles longer than the leaves, ſubdivided, forming a kind of umbel of few flowers, capillary.—Native of the iſlands of the Archipelago[x].

37. Root annual. Stem four feet high or more, weak, and ſupporting itſelf on other plants, brittle, jointed, the joints villoſe at the baſe; the angles are ſet with pellucid prickles pointing downwards: it is very much branched, and the branches are oppoſite. Leaves ſix or eight in a whorl (eight or ten, *Lin.* four to ſeven or more, *With.* ſix to eight, *Hall. Poll. Krock.* ſeven, *Bauh. Ray.*—eight on the lower, ſix on the upper whorls of the ſtem, on the branches fewer, from ſix to three, two and even one), lanceolate-linear, terminating in an awn, which is frequently purpliſh, the upper ſurface ſcabrous, the lower ſmooth, the edges and keel ſet with prickles pointing backwards. Flowers few, ſmall, on rough peduncles. Calyx none. Corolla whitiſh, ſcarcely longer than the germ, divided to the baſe into four ovate-acute ſegments. Styles two, ſhorter than the corolla, ſtanding wide aſunder. Fruit ſet with hooked briſtles[y].

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[m] Hort. kew.
[n] Allioni.
[o] Ibid. & Gerard.
[p] Haller.
[q] Pollich.
[r] Allioni.

[s] Hort. kew.
[t] Krocker.
[u] Linn. mant.
[x] Ibid.
[y] Curtis compared with With. Linn. & Scop.

Common in hedges, and cultivated grounds; flowering from may and june through the ſummer and part of the autumn.

Its well-known property of adhering to whatever it comes in contact with, acquired it the names of *Cleavers, Clevers, Clivers*, and *Catchweed* or *Scratchweed*; from the ſame idea it had the more elegant appellation of *Philanthropon* among the Greeks and Romans; from its roughneſs it has been called *Hariff*, or rather *Hairough*; and from being a favourite food or medicine of Geeſe, *Gooſe-graſs, Gooſe-ſhare*, and *Goſling-weed*.

Linneus informs us that they uſe the ſtalks in Sweden as a filtre to ſtrain their milk through. Dioſcorides relates that the ſhepherds made the ſame uſe of it in his time; and certainly it is no bad thing to take out hairs from the milk, where a ſieve is not at hand. It is reckoned to purify the blood, and for that purpoſe the tops are an ingredient in ſpring broth. The expreſſed juice of the herb, taken to the amount of four ounces or a quarter of a pint, night and morning, during ſeveral weeks, is very efficacious in removing many of thoſe cutaneous eruptions, which are called, although improperly, ſcorbutic. It has been much celebrated in ſcrophulous and cancerous ſores, but experiments made in our hoſpitals have not turned out in its favour. The ſeeds have been ſubſtituted for coffee. The roots, like moſt of the genus, will dye red, and eaten by birds, have tinged their bones of that colour. It is a troubleſome weed, particularly in young quick-ſet hedges, which it will entirely overgrow and choke. Linneus ſays it is very apt to infeſt their crops of peas. Being an annual weed, it is eaſily deſtroyed, if it be cut or plucked up early, for it begins to ſeed in june.

38. Root annual. Stems a foot high, weak, ſcabrous backward. Leaves in ſevens, lanceolate, mucronate, ſcabrous eſpecially on the edge. Flowering-branches oppoſite, ſhorter. Peduncles naked, two or three-flowered. Corollas yellow, ſmall[z]. See n. 11.—If it be Haller's n. 726. The corolla is white, and very ſmall; the fruit hiſpid, with white hairs.—Ray ſays, the flowers of his *Aparine minima* are of an herbaceous colour, and the fruits leſs rough than in the other Aparines.—Tournefort deſcribes the flowers of his *A. paluſtris minor pariſienſis* as white, and the fruits as rough.

39. This forms a tuft; the ſtems are not more than a finger's length; branches alternate: from the laſt whorl they produce two-flowered peduncles. Flowers pale yellow. Fruits dirty white.—Native of Monte Ceniſio[a].

40. Suppoſed to be a variety of V. Aparine. Parkinſon ſays it differs from *Aparine lævis* only in having the ſeed rough like unto a Coriander Comfit.—Ray, that the leaves are ſmooth, and the fruits warted, but not lappaceous or tenacious.—Haller alſo conſiders it as a variety of *A. ſem. lævi* of Vaillant, and A. Valantia of Linneus, with the ſurface of the fruit a little more rough. He affirms that it has a quadrifid fertile flower ſitting between two trifid male ones. *n.* 725.—Vaillant ſays that the fruit of his *A. ſem. lævi* is only ſhagreened, by which it differs chiefly from *A. ſem. coriandri* of *Parkinſon*, and by the ſurface of its leaves, which are almoſt ſmooth.

41. Native of New Zealand[b].

42. Root annual. Stems ſeveral, aſcending, a finger or a hand in height, ſmooth, even, made four-cornered by a pale decurrent line, branched from all the lower axils, ending at length towards the top in oppoſite peduncles, an inch long. In a rich ſoil the ſtems are frequently a ſpan high, and ſpreading. Lower leaves in fours, ſmall, ovate; upper in ſixes, linear-lanceolate, only half the length of the internodes, ſmooth, having minute prickles on the edge turned towards the tip; uppermoſt in ſevens; floral-leaves in threes, finally in pairs. Peduncles from all the axils of the leaves, branches, and upper part of the ſtem, oppoſite, filiform, by threes. The laſt pedicels two-flowered. Corolla yellowiſh-white. Seeds minute, viſcid.

This is allied to G. ſpurium only in the number of leaves; the ſtem is not weak, and in appearance it does not differ from G. Aparine; beſides it is leſs; the prickles on the edge of the leaves are turned towards the tip not the baſe; the angles of the ſtem and the keel of the leaves are not prickly and rugged, and the ſeeds are viſcid. Galium lucidum of Allioni has a ſtricter, higher, ſhining ſtem, the leaves longer and narrower, the edge quite even, and the flowers larger. G. cinereum of the ſame author is more nearly allied to this as to the leaves, but differs in its glaucous colour, in being leſs branched, in having larger ſeeds, and in other circumſtances. Native of Tunis, in the mountains.

43. Stems weak, a foot and half high or more, ſimple, ſmooth, even. Whorls very remote, eight or nine-leaved: leaves an inch and half long, mucronate, ſmooth, even except at the edge. Univerſal peduncles axillary, oppoſite, ſolitary, ſpreading very much, three inches long, filiform: partial peduncles in threes, twice or three times trichotomous, faſtigiate, capillary. There are two ſmall leaves below the partial peduncles. Seeds minute. Perhaps not different from G. hieroſolymitanum.

44. Stem herbaceous, weak, half a foot high, prickly backwards at the corners, with equal joints. Leaves having minute prickles at the edge, the upper ones very minute prickles curved in on each ſide. Peduncles three from the ends of the branchlets, bifid. Seeds as in G. Aparine, from which it differs in the ſize, number and form of the leaves.

45. Stem the thickneſs of a pigeon's quill, erect, branched, a cubit in height, pubeſcent, unarmed, purpliſh brown at the joints, the internodes a ſpan in length. Leaves ſeſſile, commonly in ſevens, mucronate, ſcarcely ſerrulate at the edge, ſmooth above, villoſe underneath, eſpecially on the keel. Fruit hiſpid. Native of Smyrna.

46. Stems ſeveral, filiform, a hand and ſometimes a finger high, erect, rugged at the corners below, but even above, branched at the baſe, dichotomous or trichotomous at top. Lower leaves in fours, petioled, obovate, ſmall; the middle ones in ſixes, a little longer, marked with two lines, oblong, ſharp at both ends; the upper ones, under the branches and univerſal peduncles in ſixes or ſevens, briſtle-ſhaped, the length of the internodes; all nearly even, having very minute cilias along the edge, ſcarcely viſible without a magnifier. Peduncles terminating, capillary, in threes, bifid: pedicels one-flowered: two briſtle-ſhaped leaflets at the baſe of the peduncles. Flowers purple. Fruit minute, whitiſh-hiſpid. Native of the dry mountains of Tunis; and of Spain, but not ſo common there. It has many points in common with G. pariſienſe. Perhaps it may not be different from G. tunetanum of Poiret; but in that there are nine or ten leaflets in a whorl, and the peduncles are hairy-rough[c].

47. The root is a ſmall, oblong, irregularly ſhaped, white, farinaceous tuber. Stem herbaceous, a foot and half high, rufous, procumbent, ſimple. Leaflets four or five together, lanceolate, quite entire, ſmooth, glaucous. Flowers white, on longiſh, one-flowered, heaped, axillary peduncles. Fruit roundiſh, rough. It is cultivated in China and Cochinchina for the roots, which are eaten boiled, either whole or in meal. They are eſteemed to be very ſalutary[d].

48. Root perennial, creeping, ſlender. Stems branched only at the baſe, weak and ſupporting themſelves on buſhes, quadrangular, very hairy, jointed; having at every joint four ovate, entire, ſoft, hairy leaves, from the axils of theſe all the way up the ſtem ariſe ſeveral ſlender, forked, many-flowered peduncles, each furniſhed with two ſmall leaves at the firſt diviſion. The flowers are yellow, formed exactly like the Galiums, except that ſome are only

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[z] Linn. ſpec.

[a] Allioni.

[b] Forſter.

[c] Vahl.

[d] Loureiro.

male, and ſome of the hermaphrodites are five-cleft. The ſtyle is deeply cloven, and there are two germs, one of which is generally abortive. The fruit is globoſe, ſmooth, and ſheltered by the reflex leaves[e].

This, and ſome other of the Linnean Valantias (glabra, articulata, Aparine) belong to the Galiums, ſeveral of which (Mollugo, Aparine, pariſienſe) have male flowers mixed with the perfect ones. Wiggers had a ſpecimen of Valantia in which all the flowers were hermaphrodite; on the contrary I have frequently ſought in vain for a ſingle perfect flower; but barrenneſs is not uncommon in plants that run much and freely at the root: ſuch plants may be compelled to become fertile by confining the roots.

Croſſwort is not uncommon about hedges and in thickets, flowering early in ſummer.]

PROPAGATION AND CULTURE.

Moſt of theſe plants being deſtitute of beauty, and being ſubject to ſpread, and over-run whatever plants grow near them, are ſeldom cultivated except in botanic gardens. The perennial ſorts may eaſily be propagated, by parting their roots either in ſpring or autumn: and they will grow in almoſt any ſoil and ſituation. [If the annual ſorts are permitted to ſcatter their ſeeds, they will maintain themſelves in a garden without any culture, except that of preventing other weeds from overgrowing them. The common Gooſegraſs (G. Aparine) propagates itſelf prodigiouſly, by the adheſion of its fruits to the hairy coats of cattle, &c.

If it ſhould be thought adviſeable to propagate the Galium verum for the uſe of the roots in dyeing, the beſt ſoil is a ſandy loam, heavy ſoils will not anſwer. Prepare the land as for flax. Sow four pounds of ſeed on an acre. In april hoe out the plants to ſix inches ſquare. The crop will require three or four hoeings more the firſt ſeaſon. In may or june take up as many plants as will leave the reſt at the diſtance of one foot ſquare. In march following take up again as many as will leave the reſt ſtanding at two feet ſquare: and in the fourth take up the whole crop in march; keeping it all the while clean from weeds[f].

Galium. See *Aſperula, Rubia, Sherardia, Valantia.*

Gallinaria. See *Caſſia.*

Gallium. See *Aſperula, Galium, Sherardia.*

GALOPINA.

Thunb. nov. gen. 1. *Lin. gen. Schreb. n.* 231. *Juſſ.* 198.

Claſſ. 4. 2. Tetrandria Digynia.

Nat. order of *Rubiaceæ.* Juſſ.

GENERIC CHARACTER.

Cal. none.

Cor. monopetalous, quadrifid, ſuperior, revolute.

Stam. *Filaments* four, capillary, long, inſerted into the receptacle, deciduous.

Pist. *Germ* inferior. *Styles* two, a little ſhorter than the ſtamens, growing out. *Stigmas* ſimple.

Per. none.

Seeds in pairs, naked, ſubglobular, muricate.

ESSENTIAL CHARACTER.

Cal. none. *Cor.* four-cleft. *Seeds* two, naked.

SPECIES.

1. Galopina circæoides.

Thunb. nov. gen. 1. *Lin. ſyſt.* 166.

Anthoſpermum Galopina. *Thunb. prodr. cap.* 32.

DESCRIPTION, &c.

Root annual. Stem herbaceous, round, red, ſmooth, ſeldom branched, erect but weak, about two feet high. Branches alternate, ſpreading, reſembling the ſtem. Leaves oppoſite, petioled, oblong, acute, entire, ſmooth, pale underneath, an inch or a little more in length. In the axils of the leaves are others, ſimilar, but ſmaller. Flowers terminating, in a looſe diffuſed panicle. Peduncles and pedicels oppoſite, capillary, ſmooth, with two oppoſite, briſtle-ſhaped bractes. Native of the Cape of Good Hope.

In the ſyſtematic arrangement it has its place before Aphanes; from which it differs in having the filaments inſerted into the receptacle, and a ſuperior corolla. It differs from Galium in having no calyx, and two ſtyles[g].

Thunberg, who conſtituted this genus, has thought fit, in his Prodromus Plantarum Capenſium, to ſink it, and make this plant a ſpecies of Anthoſpermum.

Gandola. See *Baſella.*

Gangitis. See *Nardus.*

Gania. See *Corchorus.*

Ganitrus. See *Elæocarpus.*

Garb. See *Salix babylonica.*

Garbanzo. See *Cicer arietinum.*

To that article we may add, that this pulſe is highly eſteemed in Spain, as fodder for cattle, and at the table in ſoups and other diſhes, but principally with that ſtandard diſh in all families, the *olio.*

The Garbanzo plant has a very inconſiderable root, not penetrating far into the ground, and therefore not impoveriſhing the ſoil: its branches are numerous, and the large ſort throws out ſhoots three feet long: it varies in colour, white, reddiſh, or rather gray; and the ſeed of each is of the ſame colour reſpectively. Each pod contains but one ſeed, or at moſt two; not round, but rather pointed; whence it is compared to a ſheep's head, and has the trivial name *arietinum.* In Caſtile they ſay that the beſt ſort has the ſurface wrinkled like the face of an old woman, the broad back of a porter, and the bill of a parrot; the colour alſo ſhould be, not white, but of a pale hue; and it ſhould be light, ſoft and fat.

This pulſe does not ſucceed ſo well in the hotter parts of Spain as in the cold northern diſtricts of Fuente Sauco, Mentrida, and others. It is ſowed in the ſame manner as other pulſe, and generally in open fields. A ſoft rich ſoil is beſt for the Garbanzo, but a ſtiff clay is not unſuitable to it. The Spaniards have a proverb, that rain never hurts Garbanzos. There are two principal ſorts, or rather varieties, the large or winter, and the ſmall or ſummer Garbanzo. The former ſhould be ſown the firſt week in october, that it may acquire a good root, and ſpread out luxuriantly for fodder. The latter muſt be ſown about the end of february.

The conſumption of the Garbanzo is great in Spain to fodder cattle, and it is reckoned tolerably nutritive. It is uſed either by feeding it on the ground, by cutting it green, and giving it to them in the ſtall or ſtable, which is the beſt, or dried after the manner of hay. The large ſort furniſhes an early fodder for cattle, ſheep and lambs, at a time when no other is to be had. It is a good preparation for other crops, becauſe it is deſtructive of weeds, and ſhades the ſurface of the ground[h].]

GARCINIA. (*So named in honour of Laurent Garcin, M.D. F.R.S. who travelled into the Eaſt-Indies.*—Mangoſtans *is the Malayan name.*)

Lin. gen. n. 594. *Reich.* 650. *Schreb.* 813. *Juſſ.* 256.—Mangoſtans. *Garc. in philoſ. tranſ. vol.* 38. *n.* 431.—Mangoſtana. *Rumph. Gærtn. fruct. t.* 105.

Claſſ. 11. 1. Dodecandria Monogynia.

Nat. order of *Bicornes?* Lin.—*Guttiferæ.* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* four-leaved: *leaflets* roundiſh, concave, obtuſe, ſpreading, permanent.

Cor. *Petals* four, roundiſh, concave, ſpreading, a little larger than the calyx.

Stam. *Filaments* ſixteen, (twelve or more, *G.*) upright, placed in a cylinder, ſimple, ſhorter than the calyx. *Anthers* roundiſh.

Pist. *Germ* ſuperior, ſuboval. *Style* ſcarcely any. *Stigma* flat, ſpreading, peltate, eight-cleft, obtuſe, permanent.

Per. *Berry* coriaceous, globular, large, one-celled, crowned with the ſtigma.

Seeds eight, convex on one ſide, angular on the other, villoſe, fleſhy.

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[e] Engl. bot.

[f] Young's Annals, vol. 18.

[g] Thunberg.

[h] Dillon in Young's ann. n. 138.

Obs. *The clefts in the ſtigma, and the number of ſeeds vary from five to eight.* Juſſ.—*ſix or eight, the cells of the pericarp as many.—There is no other difference between this genus and* Cambogia *but the form of the ſtigma and the number of ſtamens.* Gærtn.

ESSENTIAL CHARACTER.

Cal. four-leaved, inferior. *Pet.* four. *Berry* eight-ſeeded (or five, ſix to eight.) crowned with the peltate ſtigma.

SPECIES.

1. Garcinia Mangoſtana. *Mangoſtan*, or *Mangoſteen*.
Lin. ſpec. 635. *ſyſt.* 443. *Reich.* 2. 416. *hort. cliff.* 182. *Ellis monogr.* deſcr. & fig. *Plenck, ic. t.* 360.
Mangoſtans. *Garc. phil. tranſ. vol.* 38. *p.* 232. *abr.* 8. 755. *t.* 8. *Bont. jav.* 115.
Mangoſtana. *Rumph. amb.* 1. 132. *t.* 43.
M. Garcinia. *Gærtn. fruct.* 2. 105.
Laurifolia javanenſis. *Bauh. pin.* 461. *Raii hiſt.* 1662.
Arbor peregrina, aurantio ſimili fructu. *Cluſ. exot.* 12.
Leaves ovate, peduncles one-flowered.

[2. Garcinia celebica.
Lin. ſpec. 635. *Reich.* 416.
Mangoſtana celebica. *Rumph. amb.* 1. 134. *t.* 44.
Leaves lanceolate, peduncles three-flowered.

3. Garcinia cornea.
Lin. ſyſt. 443. *Reich.* 417.
Lignum corneum. *Rumph. amb.* 3. 55. *t.* 30.
Leaves lanceolate, veinleſs; peduncles one-flowered, drooping.]

DESCRIPTIONS, &c.

1. The Mangoſtan riſes with an upright ſtem near twenty feet high, ſending out many branches on every ſide, which are placed oppoſite, and ſtand oblique to each other, and not at right angles; the bark of the branches is ſmooth, of a gray colour, but on the tender ſhoots it is green, and that of the trunk is of a darker colour, and full of cracks: the leaves are entire; they are ſeven or eight inches long, and about half as much in breadth in the middle, gradually diminiſhing to both ends, of a lucid green on their upper ſide, and of an olive colour on their under, having a prominent midrib through the middle, with ſeveral ſmall veins running from that to both ſides of the leaf. The flower is like that of a ſingle Roſe, compoſed of four roundiſh petals, which are thick at their baſe, but are thinner toward their ends; they are of a dark red colour. The fruit is round, the ſize of a middling Orange; the top is covered by a cap, which was the ſtigma on the top of the ſtyle, and is indented in rays to the number of ſix or ſeven, which are obtuſe. The ſhell of the fruit is like that of the Pomegranate, but ſofter, thicker, and fuller of juice; it is green at firſt, but changes to a dark brown, with ſome yellowiſh ſpots; the inſide of the fruit is of a Roſe colour, and divided into ſeveral parts by thin partitions, as in Oranges, in which the ſeeds are lodged, ſurrounded by a ſoft juicy pulp of a delicious flavour, partaking of the Strawberry and the Grape, and is eſteemed one of the richeſt fruits in the world; the trees naturally growing in the form of Parabolas, and the branches being well garniſhed with large ſhining green leaves, they have an elegant appearance, and afford a kindly ſhade in hot countries, therefore are worthy of cultivation in all thoſe countries where there is warmth enough to ripen the fruit.

[According to Dr. Garcin, this tree grows to about ſeventeen or eighteen feet high, with a ſtraight taper ſtem like a Fir, having a regular head in form of an oblong cone, compoſed of many branches and twigs, ſpreading out equally on all ſides, without leaving any hollow. The leaves are oblong, pointed at both ends, entire, ſmooth, of a ſhining green on the upper ſide, and of an olive on the back. The colour of the flower reſembles that of a Roſe, only deeper and leſs lively. The two upper leaflets of the calyx are ſomething larger than the lower ones, they are greeniſh on the outſide, and of a fine deep red within, the red of the upper ones more lively than that of the lower ones. The calyx is ſupported by a green pedicel, which conſtantly comes out at the end of a twig above the laſt pair of leaves. The fruit is from an inch and half to two inches in diameter: the rind is commonly a quarter of an inch thick, and a little like that of a pomegranate, but ſofter, thicker, and fuller of juice, of a dark brown purple on the outſide, mixed with a little gray and dark green; on the inſide of a roſe-colour. The juice is purple. The ſegments into which it is divided are unequal in ſize, and uncertain in number; they are always the ſame in number with the rays of the ſtigma, and they do not adhere to each other. The ſegments are white, a little tranſparent, fleſhy, membranous, full of juice: and each incloſes a ſeed of the figure and ſize of an almond ſtripped of its ſhell, having a protuberance on one of its ſides, and covered with two thin ſkins, the outermoſt of which ſerves for a baſis to the filaments and membranes of which the pulp is compoſed. Their ſubſtance comes very near to that of Cheſtnuts, as to their conſiſtency, colour, and aſtringent quality.

It is eſteemed the moſt delicious of the Eaſt-Indian fruits, and a great deal of it may be eaten without any inconvenience: it is the only fruit which ſick people are allowed to eat without ſcruple[a]. It is given with ſafety in almoſt every diſorder; and we are told that Dr. Solander, in the laſt ſtage of a putrid fever at Batavia, found himſelf inſenſibly recovering, by ſucking this delicious and refreſhing fruit. The pulp has a moſt happy mixture of the tart and ſweet, and is no leſs ſalutary than pleaſant, for which reaſon, in hot climates, it is allowed, with the ſweet orange, in any quantity, to thoſe who are afflicted with fevers, either of the putrid or inflammatory kind. The dried bark is uſed with ſucceſs in the dyſentery and teneſmus; and an infuſion of it is eſteemed a good gargle for a ſore mouth or ulcers in the throat. The Chineſe dyers uſe this bark for the ground or baſis of a black colour, in order to fix it the firmer.

Native of the Molucca iſlands, whence it has been tranſplanted to Java and Malacca. The head is ſo fine and regular, and the leaves ſo beautiful, that it is looked upon at Batavia as the tree moſt proper for adorning a garden, and affording an agreeable ſhade[b].

Mr. Miller aſſerts that he received perfect ſpecimens by Mr. Robert Millar, who gathered them near Tolu, in New Spain. Theſe ſpecimens do not appear in Mr. Miller's herbarium, now in the poſſeſſion of Sir Joſeph Banks, ſo that we cannot decide the point with certainty; we may however preſume that Mr. Miller was miſtaken, the Mangoſtan never having been found in America by any traveller before or ſince the time of Mr. Robert Millar; and it is probable that Mr. Philip Miller might miſtake ſome ſpecies of Cluſia for the Mangoſtan; the Cluſias being common in South America, and bearing ſome reſemblance to this tree.

2. This is not a lofty tree, but it has an elegant ſpreading head. Leaves oppoſite, on ſhort ſtrong petioles, five or ſix pairs, narrower and ſharper than thoſe of the firſt ſort, ſeven or eight inches long, and more than three fingers broad, thick and ſtrong, but leſs ſo than in the common Mangoſtan; the parallel tranſverſe ribs are ſo fine as ſcarcely to be diſtinguiſhed; in a young tree they are nine inches and a half long, and three and a half or four inches broad, entirely ſmooth and even. The fruit reſembles that of the common Mangoſtan, but ſometimes grows to a larger ſize; it is of a yellowiſh red or ſaffron colour, like the Pomegranate, and is not crowned with a ſtar, but with a little crown, which is hollowed above, and broader there than at

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[a] Garcin in Philoſ. tranſ. and Ellis.

[b] Ellis and Cook's voyage.

its origin.—Native of the iſland of Celebes about Macaſſar, whence it has been tranſplanted into Amboina and Java, where however it ſeldom bears ripe fruit.

3. The trunk of this tree is lofty, but not very thick; it is covered with a black bark, adhering firmly to the wood; the branches extend wide, and divide into many ſhort branchlets, which have a pair of leaves at each joint; theſe are large, from eleven to fifteen inches long, and four broad, but on old trees ſhorter, ſmooth, firm and ſhining, having a thick midrib beneath, but above ſmooth and grooved; petioles thick and ſhort, frequently ſo curved in that the lower ſide of the leaf becomes the upper one. The flower comes out from the branch between the upper leaves, hanging on an incurved peduncle, having the form of a ſmall Roſe, but of a yellow colour. Fruit ſolitary, growing cloſe to the branch, the ſize of a Plum, crowned by a ſort of wart like the head of a nail; it is of a duſky brown or ſmoaky colour on the outſide, and within it has a mucoſe pulp, in which lie a few ſeeds in ſhape of a half moon. It has a reſinous ſmell when freſh. The wood is heavy and very hard like horn, whence Rumphius names it *Lignum corneum*; it is uſed for the handles of tools, and the young trees in building, the older ones being too hard to work. Native of Amboina, in high remote mountains[c].]

PROPAGATION AND CULTURE.

1. As there are but few of the ſeeds which come to perfection (for the greateſt part of them are abortive) ſo moſt of thoſe which have been brought to Europe have failed; therefore the ſureſt way to obtain the plants, is to ſow the ſeeds in tubs of earth in the country, and when the plants have obtained ſtrength, they may be brought to Europe; but there ſhould be great care taken in their paſſage, to ſcreen them from ſalt water and the ſpray of the ſea, as alſo not to give them much water, eſpecially when they are in a cool or temperate climate, for theſe plants are very impatient of wet. When the plants arrive in Europe, they ſhould be carefully tranſplanted, each into a ſeparate pot, filled with light kitchen-garden earth, and plunged into the tan-bed, obſerving to ſhade them from the ſun till they have taken new root; then they muſt be treated in the ſame manner as other tender plants from hot countries.

[It may be increaſed here by cuttings in the ſame manner as is directed for Gardenia.

GARDENIA. (*So named by Ellis, in honour of Alexander Garden, M. D. of Charleſtown in Carolina.*)

Ellis. *Lin. gen. n.* 296. *Reich.* 320. *Schreb.* 416. *Thunb. diſſ.* 6. *Lin. ſuppl.* 23. *Gærtn. t.* 28. *Juſſ.* 201.—Jaſminum. *Mill. fig. t.* 180.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Contortæ.*—*Rubiaceæ.* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-cleft, ſuperior: *diviſions* upright, permanent.

COR. one-petalled, funnel-form, or ſalver-form. *Tube* cylindric, longer than the calyx. *Border* flat, five-parted.

STAM. *Filaments* none. *Anthers* five, inſerted into the mouth of the tube, linear, ſtreaked, half the length of the border.

PIST. *Germ* inferior. *Style* filiform or club-ſhaped. *Stigma* ſtanding out, ovate, obtuſe, two-lobed, often furrowed.

PER. *Berry* (berried Drupe. *G.*) dry, one, two or four-celled.

SEEDS very many, flatted, imbricate in rows. (two rows in each cell. *J.*)

OBS. *The moſt natural number of the parts is five; but they vary in the anthers, diviſions of the calyx and corolla, as far as nine.* Thunb.

ESSENTIAL CHARACTER.

Cor. one-petalled, contorted or twiſted. *Stigma* lobed. *Berry* inferior, two to four-celled, many-ſeeded.

SPECIES.

* *Without thorns.*

1. Gardenia radicans. *Rooting Gardenia.*
Lin. ſyſt. 251. *Thunb. jap.* 109. *t.* 20. *diſſ. n.* 1. *t.* 1. *f.* 1. *Kæmpf. amœn.* 5. 808.
Corollas obtuſe, calyx angular, leaves elliptic, ſtem rooting.

2. Gardenia florida. *Fragrant Gardenia,* or *Cape Jaſmin.*
Lin. ſpec. 305. *ſyſt.* 251. *Reich.* 1. 592. *ſuppl.* 163. *mant.* 346. *Thunb. diſſ. n.* 2. *Ellis in phil. tranſ.* 51. *p.* 932. *t.* 23. *Ait. hort. kew.* 1. 293. *Rumph. amb.* 7. *p.* 26. *t.* 14. *f.* 2. *Lour. cochinch.* 147. *n.* 1, 2.]
Jaſminum capenſe. *Mill. dict. n.* 7. *fig. t.* 180. *Ehret. pict. t.* 15. *Act. nat. cur.* 1761. *p.* 333. *t.* 8.
Corollas ſalver-ſhaped, calycine ſegments vertical, lanceolate-ſubulate; leaves elliptic.

[3. Gardenia Thunbergia. *Starry Gardenia.*
Lin. ſyſt. 251. *ſuppl.* 162. *Thunb. diſſ. n.* 3. *Ait. hort. kew.* 294.
Thunbergia capenſis. *Montin in act. holm.* 1773. *p.* 289. *t.* 11.
Bergkias. *Sonnerat iter. nov. guin.* 48. *t.* 17, 18.
Corollas ſalver-ſhaped; calyxes burſting laterally, with the ſegments dilated at the tip; leaves elliptic. (Corollas obtuſe, calyx columnar, leaves ovate, acute, Thunb. cap.)

4. Gardenia latifolia. *Broad-leaved Gardenia.*
Ait. hort. kew. 294.
Corollas ſalver-ſhaped, calycine ſegments ſubulate, obtuſely keeled; leaves obovate-roundiſh.

5. Gardenia gummifera. *Gummy Gardenia.*
Lin. ſyſt. 251. *ſuppl.* 164. *Thunb. diſſ. n.* 4. *t.* 2. *f.* 3.
Corollas obtuſe, calyx rough with hairs, leaves oblong, obtuſe.

6. Gardenia Muſſænda.
Lin. ſyſt. 252. *ſuppl.* 163. *Thunb. diſſ. n.* 5.
Muſſænda formoſa. *Lin. ſyſt. edit.* 13. *p.* 182. *mant.* 45. *Jacqu. amer.* 70. *t.* 48. *pict.* 38. *t.* 70.
Corollas acute, calyx rough with hairs, leaves ovate, acute.

7. Gardenia Genipa.
Swartz prodr. 51.
Genipa americana. *Lin. ſpec.* 251. *ſyſt.* 227. *Reich.* 1. 523. *Plum. ic.* 136.
Janipha. *Marcgr. braſ.* 92. *Raii hiſt.* 1666. (Pomifera.)
Leaves oblong-lanceolate, peduncles axillary, many-flowered, corollas ſalver-ſhaped, with an abbreviated tube.

8. Gardenia Rothmannia. *Spotted-flowered Gardenia.*
Lin. ſyſt. 252. *ſuppl.* 165. *Thunb. diſſ. n.* 6. *Ait. hort. kew.* 294.
Rothmannia capenſis. *Thunb. act. holm.* 1776. *p.* 65. *t.* 2.
Corollas funnel-ſhaped, calycine ſegments ſubulate, leaves oblong. (Corollas acute, ſubcampanulate, calyx ſmooth, leaves oblong, acute. Thunb. cap.)

** *Thorny.*

9. Gardenia ſpinoſa. *Thorny Gardenia.*
Lin. ſyſt. 252. *Thunb. diſſ. n.* 7. *t.* 2. *f.* 4.
Flowers ſeſſile, hirſute.

10. Gardenia dumetorum. *Buſhy Gardenia.*
Retz. obſ. 2. *n.* 31. *Ait. hort. kew.* 295. *Gærtn. fruct.* 1. 140.
G. ſpinoſa. *Lin. ſuppl.* 164.
Thorns oppoſite, longer than the leaves, germs ſmooth.

11. Gardenia micranthus.
Lin. ſyſt. 252. *Thunb. diſſ. n.* 8. *t.* 1. *f.* 2.
Flowers ſeſſile, ſmooth.

12. Gardenia ſcandens. *Climbing Gardenia.*
Lin. ſyſt. 252. *Thunb. diſſ. n.* 9. *t.* 2. *f.* 5.
G. jaſminoides. *Retz. obſ.* 2. *n.* 30.
Climbing; flowers peduncled.

13. Gardenia uliginoſa. *Boggy Gardenia.*
Retz. obſ. 2. *n.* 32.
Branches thorny at the end, tube of the corolla hirſute within.

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[c] Rumphius.

14. Gardenia armata.
Swartz prodr. 51. *obſ.* 81.
Muſſænda ſpinoſa. *Linn. mant.* 45. *Reich.* 1. 489. *Jacqu. amer.* 7. *t.* 49.
Spines of the branchlets terminating in fours, calycine ſegments linear wedgeform, flowers crowded.

15. Gardenia aculeata. *Round-leaved Gardenia.*
Ait. hort. kew. 295.
G. Randia. *Swartz prodr.* 52. *obſ.* 61.
Randia aculeata. *Lin. ſpec.* 214. *Reich.* 427. *Brown. jam.* 143. *t.* 8. *f.* 1. *Sloan. jam.* 1. 40. *t.* 11. *f.* 4. (Lycium.)]
β. R. mitis. *Mill. dict.* *Sloan. jam.* 2. *t.* 161. *f.* 1. (Cacao.)
Thorns oppoſite, both they and the flowers ſhorter than the leaves, branches ſmooth.

DESCRIPTIONS, &c.

[1. Stem decumbent, ſmooth, thickneſs of a reed, about a foot high, putting out roots at bottom. Branches oppoſite, tubercled with rudiments of leaves, flexuoſe, upright. Leaves aſſembled at the ends of the branches, oppoſite, ſubſeſſile, entire, marked with parallel nerves, ſmooth, upright, from an inch to two inches in length. Stipules between the leaves, ovate, obtuſe, ſheathing, membranaceous. Flowers ſolitary, ſubſeſſile, at the ends of the branches. Calyx angular, ſmooth, five or ſix-parted: diviſions lanceolate, vertical, only half the length of the tube of the corolla, which is white, leathery, and uſually double: the diviſions of the border oblong, obtuſe, flat. It differs from *G. florida* in being many times ſmaller, with a ſlender, decumbent, rooting ſtalk, and narrow leaves, of an elliptic or lanceolate form, drawn to a point at each end. It is commonly cultivated in Japan, where it flowers in june and july[a].]

2. Stem large and woody, ſending out many branches, which are firſt green, but afterwards the bark becomes gray and ſmooth; the branches come out by pairs oppoſite, and have ſhort joints; the leaves alſo are oppoſite, cloſe to the branches; they are five inches long, and two inches and a half broad in the middle, leſſening to both ends, terminating in a point; they are of a lucid green, having ſeveral tranſverſe veins from the midrib to the borders; they are entire, and of a thick conſiſtence. The flowers are produced at the ends of the branches, ſitting cloſe to the leaves. When fully blown, the double flower is as large as a middling Roſe. It has a very agreeable odour, on the firſt approach ſomething like that of the Orange flower, but on being more cloſely ſmelt to, like the common double white Narciſſus.

[There are hedges of it in Japan, and the Japoneſe are very fond of it near their houſes, and in the walks of their gardens. Both in Japan and China the fruit is uſed for dyeing yellow[b]. The mucilage preſſed out with the ſeeds produces a fine yellow; that from the ſeeds only is lighter, but tinges water of a lively yellow, and is ſaid to dye ſilk of a deep orange, or even ſcarlet, but not the deep China ſcarlet.

It varies with ſingle and double flowers: the former has from five to nine diviſions of the corolla, and ſtamens.—Native of the Cape of Good Hope, Cochinchina, China, Japan, Suratte, Amboina, and the South-ſea iſlands. Introduced about 1754, by Captain Hutchinſon[c],] of the Godolphin Indiaman, who found it near the Cape of Good Hope, being attracted by the great fragrancy of the flowers. He preſented it to Richard Warner, Eſq. of Woodford in Eſſex, in whoſe curious garden it continued flowering. [Mr. James Gordon of Mile-end propagated it from cuttings in 1757[d]. It flowers in july and auguſt.

3. This is a tree, about two fathoms in height, ſmooth, and branching very much. Branches alternate, round, having rings on them from the rudiments of leaves, aſh-coloured, ſmooth, erect, branchletted. Leaves in whorls of three or four, acuminate to both ends, entire, concave, ſomewhat waved, marked with parallel nerves, ſmooth, having hairy glands in the axils of the nerves on the lower ſurface; ſpreading; unequal, longer than the internodes, two inches long and more. Petioles ſhort, gradually widening into the leaf, callous underneath, ſmooth, an inch long. Stipules intrafoliaceous; ſheathing, blunt; membranaceous. Flowers on the branchlets terminating, ſolitary, ſeſſile, erect. Calyx cylindric; widening at top; ſmooth; opening obliquely at top, crowned with from four to ſix petioled, cowled leaflets, villoſe within, and moiſtened with honey juice, one-third only of the length of the tube. Corolla white, coriaceous: tube a little incurved, obſcurely ſtreaked, widening a little gradually, very ſmooth: border from ſeven to nine-parted; parts ovate, very blunt, reflex at the edge; quite entire, imbricate, ſpreading very much, villoſe at the mouth, and grooved. Anthers ſeven or eight, but moſt commonly nine: ſometimes the border is ten-parted, with the ſame number of anthers. Germ flat, crowned with rounded, honied tubercles, and ſmooth. Style filiform and ſmooth below, above club-ſhaped, villoſe; longer than the tube of the corolla. Stigma obliquely truncate, grooved. Berry ovate, ſomewhat wrinkled, ſmooth, greeniſh, turning white, one-celled, five-valved, the ſize of a hen's egg, continuing ſeveral years without opening or falling; having a woody hard bark; and ſcarcely any pulp. Seeds lenticular, imbricate, one in each plait[e]. It is not only very clear that this plant is of the genus *Gardenia*, but it reſembles *G. florida* exceedingly in the ſtalk and leaves; the latter are frequently in whorls, and the nerves on the lower ſurface have glands. There is little elſe to ſeparate them but the long funnel-form calyx, appendicled below the tip[f].

Native of the Cape of Good Hope, and introduced in 1773, by Sir James Cockburn, Bart.[g]

4. Native of the Eaſt-Indies: introduced in 1787, by Richard Anthony Saliſbury, Eſq.[h]

5. This reſembles *G. florida* in the ſize and form of the border of the corolla; the tube of the calyx is longer, more filiform, and covered with more ſlender hairs. A gum-reſin very much like Gum Elemi exudes from the clefts of the bark, and from the leaves. Native of Ceylon. Found there by Koenig[i].

6. The form of the calyx, the contorted corolla, the ſeſſile anthers and their manner of inſertion, the large two-lobed ſtigma, the dry bilocular berry, the diſpoſition of the ſeeds, and the habit of the herbaceous part, all unite to perſuade us that this plant is a true ſpecies of *Gardenia*.

It is ſhrubby, with round branches, rough with hairs. Leaves oppoſite, on very ſhort petioles, an inch in length, and ſmooth. Stipules between the leaves, ſolitary, dilated at the baſe, ſubulate. Flowers axillary, and at the ends of very ſhort branches, ſolitary, ſeſſile. Calyx bell-ſhaped, rough with hairs: the diviſions compreſſed, ſubulate; the ſinuſes rounded. Corolla white: tube elongated, filiform, bent upwards at the baſe, and then becoming ſtraight, rough with hairs; border only half the length of the tube, the ſegments ovate, acuminate, fleſhy. Anthers inſerted above the throat, oblong, upright. Berry oval, with a woody bark. Seeds oval, imbricate, in two rows in each cell.—Native of South-America[k].

7. This is a thornleſs ſhrub, according to Swartz, with oblong-lanceolate leaves, axillary many-flowered peduncles, and ſalver-ſhaped corollas, with a ſhort tube. It differs from the other Gardenias principally in the form of the corolla, which varies much in this genus. Leaves lanceolate, ſinuoſe, veined, quite entire, ſeſſile. Peduncles many-flowered, racemed. Corolla funnel-form, with a ſhort tube, and a five-cleft, equal, ſpreading border. Berry ovate, fleſhy, acuminate at both ends, and as it were

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[a] Thunberg.
[b] Ibid.
[c] Hort. kew.
[d] Ellis.
[e] Thunberg.
[f] Linn. ſuppl.
[g] Hort. kew.
[h] Ibid.
[i] Linn. ſuppl.
[k] Ibid.

truncate, two-celled. Seeds angular, depreſſed, neſtling in the pulp. Native of South America[l].

8. Stem arboreous, erect, branching very much, a fathom and half in height. Branches and branchlets oppoſite, ſomewhat angular, ſtriated, rugged, erect, ferruginous. Leaves oppoſite, on very ſhort petioles, acute, entire, nerved, ſmooth, bright green above, paler beneath, evergreen, having hairy glands in the axils of the nerves on the lower ſurface. Stipules intrafoliaceous, awl-ſhaped, ſhort. Flowers on the branchlets terminating, ſolitary, ſeſſile. Calyx cylindric, obſcurely five-cornered, ſmooth on the outſide, hairy within, one-third of the length of the corolla; ſegments filiform, acute. Corolla ſubcampanulate, yellowiſh-white on the outſide, duſky yellow within, with purple ſpots; ſegments of the border ovate, acuminate, reflex. Anthers ſeldom ſix, with a ſix-cleft calyx and corolla. Germ ſlightly convex, unequal, angular, ſmooth. Style filiform. thickening gradually, white, almoſt the length of the corolla. Berry ovate, fleſhy, angular, with about twelve obſcure lines, ſmooth, two-valved, one-celled, pulpy, the ſize of a ſmall pear, black when ripe, opening on one ſide, and falling from the tree when dry; pulp ſoft, like that of the Tamarind[m].

The wood of this is very hard. Flowers white, ſmelling very ſweet, eſpecially during the night. Native of the Cape of Good Hope[n]. Introduced in 1774, from Mr. Francis Maſſon[o].

9. Stem ſhrubby. Branches round, ſmooth, ſpiny, rigid. Spines ſupraaxillary, commonly oppoſite, decuſſated, ſpreading, an inch long. Leaves from buds below the ſpines, ſeveral, ſubſeſſile, ovate, obtuſe, entire, ſmooth, ſpreading, unequal. Stipules minute, briſtle-ſhaped. Flowers axillary, ſolitary. Calyx bell-ſhaped, hirſute on the outſide. Corolla funnel-ſhaped, white. Native of China near Macao[p].

10. This is a very thorny ſhrub, with very ſtiff, round, ſmooth branches. Thorns in pairs, an inch long, ſimple, horizontal, decuſſated, ſtraight, very ſtiff, ſmooth, coming out above the origin of the twigs. Leaves obovate, entire, very ſmooth, oppoſite, a little ſmaller than thoſe of Box. Flowers ſolitary, ſmall, on ſhort pedicels, at the end of each twig. Calyx bell-ſhaped, ſmooth, divided into five ovate, ſpreading ſegments, marked with nerves. Corolla leathery, ſcarcely larger than the calyx, hairy on both ſides, but very much ſo on the outſide; the ſegments of the border rounded or obovate.—Native of the Eaſt-Indies, about Madras, in buſhy places. Found by John Gerard Koenig, M.D. Introduced in 1777, by Sir Joſeph Banks, Bart[q].—This is a different plant from G. *ſpinoſa* of Thunberg, which is a native of China, and has the calyx externally, with the corolla very hairy; whereas in this they are ſmooth. See n. 9.

11. Stem ſhrubby. Branches round, villoſe, ſpiny. Branchlets capillary, few, rough with hairs, ſpiny. Spines ſuprafoliaceous, oppoſite, acute, from erect-ſpreading. Leaves from the buds below the ſpines oppoſite, ovate, acute, entire, ſmooth, nerved, ſpreading, on petioles a line in length. Flowers axillary, two or three, the ſize of a grain of rice. Calyx truncate, ſmooth, much ſhorter than the corolla; which is ſubcampanulate, with ovate, acute, reflex ſegments. Style capillary, white, the length of the corolla. Stigma globular. Native of China and the iſland of Ceylon.

12. Stem ſhrubby. Branches round, ſmooth, aſh-coloured, ſpiny, climbing. Spines ſuprafoliaceous, decuſſately oppoſite. Leaves from the buds below the ſpines aggregate, ovate, bluntiſh, entire, ſmooth, ſpreading, unequal, on very ſhort petioles. Stipules briſtle-ſhaped. Flowers axillary, ſolitary. Peduncles filiform, one-flowered, ſmooth. Calyx ſubcampanulate, ſmooth, one-fourth of the length of the tube of the corolla; ſegments lanceolate, erect. Corolla funnel-form, white, ſmooth; tube cylindric, ſtraight; ſegments of the border lanceolate, ſpreading. Style filiform, the length of the tube. Stigma club-ſhaped. Native of China, near Macao[r]. According to Retzius, it is a ſhrub very much branched both oppoſitely and alternately. Spines ſhort. Leaves oppoſite and ſcattered, ovate, quite entire, the ſame ſize as in G. *dumetorum*. Flowers at the ends of the twigs, uſually ſolitary, peduncled, altogether like thoſe of *Jaſminum odoratum*, but the ſtamens and piſtil as in *Gardenia*. It has the calyx of Jaſmin, but more leathery, as is alſo the corolla.

13. A ſhrub with brown ſquariſh branches, the twigs ſhort and growing by pairs, having leaves and two thorns at the end. Leaves elliptic, obtuſe, ſmooth. Corolla thick, leathery, the ſegments rounded, hollow, the tube ſhort. Calyx fleſhy, the five toothlets ſhort, blunt. Native of the Eaſt-Indies in marſhes. Found there by Koenig[s].

14. This is a ſmall tree, about ten feet high, and very ſeldom more than three inches in diameter, frequently branching very near the ground. Branches round, ſmooth, brachiate; the longer ones requiring ſome ſupport; the extreme branchlets are armed with four awl-ſhaped, acuminate, ſtrong, ſpreading, cruciate thorns. Leaves ſubovate, attenuated to both ends, acute, entire, veined, ſometimes wrinkled, ſubhirſute on both ſides, petioled. Flowers ſeſſile, commonly four together from the end of each twig, extremely odorous. Calyx ſmoothiſh, deeply five-cleft; ſegments varying much in form and proportion, but not in number. Corolla white, the tube longer than the ſegments. Stigma ſometimes globular and twin, but more frequently ſplit into two oblong ſegments. Berry not ſtreaked, crowned with a part only of the calyx, at firſt yellowiſh, then brown. Native of South America and the Weſt-India iſlands[t].

15. Spines of the branches decuſſated, leaves roundiſh, teeth of the calyx lanceolate-ſubulate, corolla ſalver-ſhaped. Its affinity to ſeveral of the ſpecies proclaim it to be of this genus. The berry is two-celled, and even when ripe, a very thin partition yet remains. The form of the corolla varies extremely in this genus. The *mitis*, or thornleſs Randia, ſeems to be the ſame, in a more advanced age; when it is common for trees and ſhrubs to loſe their thorns[u].

Browne calls it the Indigo-berry, and ſays that it is a ſmall ſhrub riſing by a branched ſtalk, and ſhooting commonly to the height of ſeven or eight feet; the main ſtem tough and hard; the branches ſomewhat prickly at the ends; the leaves of an oval form, and growing in tufts. The pulp of the berries, which are generally numerous on the ſmaller branches, is very thick, and ſtains paper or linnen of a fine fixed blue colour.]

Native of the Weſt-Indies. Introduced before 1733 by William Houſtoun, M.D. who found it near La Vera Cruz, and gave it the name of Randia, in honour of Mr. Iſaac Rand, who was a curious botaniſt. It had alſo been diſcovered by Sir Hans Sloane in the iſland of Barbadoes.

PROPAGATION AND CULTURE.

2. The common Gardenia or Cape Jaſmin is eaſily propagated by cuttings during the ſummer ſeaſon, planted in pots, plunged into a moderate hot-bed, covered cloſe with bell or hand-glaſſes, and ſcreened from the ſun. When they have taken root, they ſhould be carefully parted, and put each into a ſeparate ſmall pot, plunging them again into the hot-bed, and ſhading them until they have taken new root, after which they ſhould be gradually inured to the open air. Though the cuttings ſtrike freely, and make ſtrong ſhoots a year or two after, yet in three or four years they are apt to be ſtinted in their growth, the leaves turn pale and ſickly, and the plants frequently die ſoon after.

[The other Gardenias, ſo far as we are yet acquainted with them, may be increaſed and treated in the ſame manner. Allowance being made for ſome, which are natives of hotter climates.]

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[l] Plumier.
[m] Thunberg.
[n] Linn. ſuppl.
[o] Hort. kew.
[p] Thunberg.
[q] Linn. ſuppl. Retz. obſ. Hort. kew.
[r] Thunberg.
[s] Retzius.
[t] Jacquin.
[u] Swartz.

15. The Randia is propagated by ſeeds, ſown early in ſpring, in pots filled with light freſh earth, and plunged into a hot-bed of tanner's bark, obſerving to water the earth frequently but gently. When the plants come up, admit freſh air to them every day when the weather is warm, and refreſh them often with water. In a month's time they will be fit to tranſplant; ſhake them carefully out of the pots, plant each in a ſmall pot filled with light freſh earth, and plunge them into the hot-bed again, ſcreening them from the ſun until they have taken new root; after which they muſt have air and moiſture according to the warmth of the ſeaſon. The plants may remain in the hot-bed till towards Michaelmas, when the nights begin to be cold; then they ſhould be removed into the ſtove, and if they are plunged into the bark-bed, it will greatly forward their growth; though they will live in the dry ſtove, in a moderate temperature. During the two firſt ſeaſons, whilſt the plants are young, keep them conſtantly in the ſtove, waſhing their leaves whenever they contract filth: after they have obtained ſtrength, expoſe them in ſummer to the open air for two or three months, in a warm ſituation; but in winter place them in the ſtove, in a moderate warmth.

The leaves continuing green throughout the year, this is a valuable plant for the ſtove.

GARIDELLA. (*So named by Tournefort in honour of Pierre Garidel, M.D. Phyſician at Aix in Provence. Author of Hiſtoire des Plantes qui naiſſent en Provence*; 1719, *with many figures.*)

Lin. gen. n. 571. *Reich.* 620. *Schreb.* 778. *Tournef.* 430. *Juſſ.* 233. *Gærtn. t.* 118.

Claſſ. 10. 3. Decandria Trigynia.

Nat. order of *Multiſiliquæ.—Ranunculaceæ.* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* five-leaved, ſmall: *leaflets* ovate, acute, deciduous.

Cor. *Petals* none, unleſs the calyx be taken for them. *Nectaries* five, long, equal, two-lipped: *outer lip* bifid, flat; *diviſions* long, linear, blunt: *inner lip* ſhorter, ſimple.

Stam. *Filaments* uſually ten, ſubulate, ſhorter than the corolla. *Anthers* upright, blunt.

Pist. *Germs* three, ovate, upright, acuminate, connected. *Styles* ſcarcely any. *Stigmas* ſimple.

Per. *Capſules* three, ſuperior, connected, oblong, acuminate, compreſſed, one-celled, two-valved: the inner ſuture more convex.

Seeds ſeveral, ſhort.—About twelve in each cell, ovate-acuminate, wrinkled, black or brown.

Obs. *It approaches very near to* Nigella. *The capſules are ſo cloſely united, as to ſeem one three-celled, three-valved capſule.*

ESSENTIAL CHARACTER.

Cal. five-leaved, like petals. *Nect.* five, two-lipped, bifid. *Capſ.* three, connected, containing many ſeeds.

SPECIES.

1. Garidella Nigellaſtrum. *Fennel-leaved Garidella.*

Lin. ſpec. 608. *Reich.* 2. 368. *hort. cliff.* 170. *upſ.* 108. *Garid. prov.* 203. *t.* 39. *Allion. pedem. n.* 1681. *Villars dauph.* 3. 584. *Gærtn. fruct.* 2. 175.

Nigellaſtrum raris & foeniculaceis foliis. *Magn. hort. t.* 143.

Nigella cretica fol. foeniculi. *Bauh. pin.* 146. *Mor. hiſt.* 3. 516. *ſ.* 12. *t.* 18. *f.* 6. *Park. theat.* 1376. 6. *Raii hiſt.* 1071. 9.

Melanthium peregrinum ſ. creticum. *Pona bald.* 46.

DESCRIPTION, &c.

This is an annual plant, which riſes with an upright ſtalk a foot high, dividing into ſeveral ſlender branches, having very fine-cut leaves, like thoſe of Fennel, at their joints; the ſtalks are terminated by one ſmall flower, of a pale herbaceous colour.

[Native of the South of France, where it was firſt diſcovered by Monſ. Garidel in 1692. It is found alſo in Italy. Firſt cultivated here in 1748 [a].] It flowers in june and july, and the ſeeds ripen in ſeptember.

PROPAGATION AND CULTURE.

This plant is propagated by ſeeds ſown in autumn on a border of light freſh earth: when the plants come up, weed, and thin them to the diſtance of four or five inches; or if the ſeeds be permitted to ſcatter, the plants will come up without farther care. They do not well bear tranſplanting.

[Garlick. See *Allium ſativum.*

Garlick-Pear. See *Crateva.*

Garo de Malaca. See *Aquilaria.*

Garosmus. See *Chenopodium.*]

GAULTHERIA. (*So named by Kalm from Gaulthier, a phyſician and botaniſt of Canada.*)

Lin. gen. n. 551. *Reich.* 595. *Schreb.* 749. *Gærtn.* 63. *Juſſ.* 161.

Claſſ. 10. 1. Decandria Monogynia.

Nat. order of *Bicornes.—Ericæ.* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* double, approximating, permanent: *outer* two-leaved, ſhorter; *leaflets* half-ovate, concave, obtuſe; *inner* one-leafed, five-cleft, bell-ſhaped; *ſegments* half ovate.

Cor. one-petalled, ovate, half-five-cleft; *border* ſmall, rolled back.

Nectary of ten ſubulate, upright, very ſhort bodies, or glands, ſurrounding the germ within the ſtamens.

Stam. *Filaments* ten, ſubulate, bent in, ſhorter than the corolla, inſerted into the receptacle. *Anthers* two-horned, with the horns bifid.

Pist. *Germ* roundiſh, flatted. *Style* cylindric, the length of the corolla. *Stigma* obtuſe.

Per. *Capſule* roundiſh, obtuſely five-cornered, flatted, five-celled, five-valved, opening into five parts at the top, covered all round with the inner perianth, changed into a roundiſh, coloured berry, pervious at the top.

Seeds very many, ſubovate, angular, bony.

ESSENTIAL CHARACTER.

Cal. outer two-leaved, inner five-cleft. *Cor.* ovate. *Nect.* with ten dagger points. *Capſ.* five-celled, covered with the inner calyx, now become a berry.

SPECIES.

1. Gaultheria procumbens. *Trailing Gaultheria.*

Lin. ſpec. 565. *Reich.* 2. 297. *Kalm. amœn.* 3. 14. *t.* 1. *f.* 6. *Duham. arb.* 1. 286. *t.* 113. *Gærtn. fruct.* 306.

Anonyma pedunculis arcuatis. *Cold. noveb.* 98.

Leaves alternate, ovate, entire, ſtem ſhrubby, trailing.

[2. Gaultheria antipoda.

Forſt. fl. auſtr. n. 196.

Leaves ſcattered, roundiſh, ſerrate-toothed, ſtem ſhrubby, diffuſed.

DESCRIPTION, &c.

1. This plant has the appearance of Pyrola or Vaccinium, with a creeping root. It is a ſmall, evergreen, trailing ſhrub, a ſpan high, and ſcarcely branched. Leaves terminating the ſtem, three or four, obovate, ſmooth, coriaceous, ſpreading, with a few acuminate ſerratures. Flowers ſolitary, axillary, pendulous, peduncled. Inner calyx and corolla white [b],] or of an herbaceous colour, and rarely ſucceeded by fruit in England.

[The fruit is red on the outſide and fleſhy, reſembling a berry; the capſule within is very thin, and tubercled with the protuberance of the ſeeds: the partitions alſo within are very thin, and are faſtened to the axis and the furrows of the ſhell: there are five receptacles, which are fleſhy, flatted, bowed, fixed at the baſe, but looſe in the other parts, or connected with the axis of the fruit by a very thin membrane. Seeds very ſmall, ſmooth, ſhining, ferruginous [c].

Native of Canada, on a dry, ſterile, ſandy ſoil. The leaves are uſed there in an infuſion, inſtead of Tea [d].

Cultivated in 1768, by Mr. Miller [e].

2. Native of New Zealand [f].]

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[a] Hort. kew. from Mill. dict. edit. 5.

[b] Linn. amoen.

[c] Gærtner.

[d] Linn. amoen.

[e] Hort. kew.

[f] Forſter.

PROPAGATION AND CULTURE.

1. The method of preſerving this plant in a garden, is to ſet it in a pot, filled with looſe undunged earth, placing it in the ſhade, and frequently watering it. Thus the plant may be kept alive two or three years, and bear flowers, but not fruit.

GAURA. (*From* Γαυρος, *ſuperbus.*)

Lin. gen. n. 470. *Reich.* 506. *Schreb.* 638. *Gærtn.* 127. *Juſſ.* 319.

Claſſ. 8. 1. Octandria Monogynia.

Nat. order of *Calycanthemæ.*—*Onagræ.* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, ſuperior, deciduous. *Tube* cylindric, long, thicker at the baſe, containing four oblong glands growing to it. *Border* four-cleft; *diviſions* oblong, acute, reflex.

COR. *Petals* four, oblong, riſing towards the upper lip, equal, with narrow claws, placed on the tube of the calyx.

STAM. *Filaments* eight, filiform, broader at top, ſtraight, ſhorter than the corolla: a nectareous gland of a conical form within the baſe of each. *Anthers* oblong, verſatile.

PIST. *Germ* oblong, inferior, four-celled, many-ſeeded: the ſeeds fixed to a columnar receptacle. *Style* filiform, length of the ſtamens. *Stigmas* four, columnar, ovate, ſpreading.

PER. *Drupe* ovate, four-cornered, the corners flatted. —(dry, often with one cell only, and one ſeed, with the veſtiges of the partitions and the abortive ſeeds. *G.*)

SEED. *Nut* with one ſeed, oblong, angular.—(ſolitary, one or four, ſubovate, narrowed at top, convex on one ſide, angular on the other, of a yellowiſh bay colour, with a brown callus at the baſe. *G.*)

ESSENTIAL CHARACTER.

Cal. four-cleft, tubulous. *Cor.* four-petalled, riſing towards the upper ſide. *Nut* inferior, one-ſeeded, four-cornered.

SPECIES.

1. Gaura biennis. *Biennial Gaura.*

Lin. ſpec. 493. *Reich.* 2. 150. *amœn.* 3. 26. *Act. holm.* 1756. *p.* 222. *t.* 8. *Giſeck ic. faſc.* 1. *n.* 8. *Pluk. amalth. t.* 428. *f.* 2. *Gærtn. fruct.* 2. 205.

DESCRIPTION, &c.

This is a biennial plant. Stem four or five feet high, ſending out ſeveral branches. Leaves oblong, ſmooth, pale-green, ſitting pretty cloſe. Flowers in cloſe tufts at the ends of the branches, pale roſe-coloured; appearing in ſeptember, and when the autumn proves favourable, ripening the ſeeds towards the end of october.

[Gaura agrees with *Spathelia* and *Nitraria* in having the ſhell of the fruit valved at the end. If there be only one ſeed, then it is oblong, and much acuminated; but Linneus was miſtaken in ſuppoſing this to be the natural number[a].

Native of Virginia and Penſylvania. Introduced in 1762, by Mr. James Gordon[b].]

PROPAGATION AND CULTURE.

If the ſeeds are ſown on an open border ſoon after they are ripe, they will more certainly ſucceed than when they are ſown in the ſpring. When the plants come up, keep them clean from weeds, and thin them, if they are too cloſe: tranſplant them in autumn where they are to ſtand, and ſupport the branches to prevent the autumnal winds from breaking them.

[GELSEMINUM. See *Bignonia.*

GAURA. See *Combretum* and *Guarea.*

GEASTER. See *Lycoperdon.*

GELALA. See *Erythrina.*

GELDER-ROSE. See *Viburnum.*

GELSEMINUM. See *Bignonia* and *Jaſminum.*

GENIOSTŎMA. (*From* Γενειον, *a beard, and* στομα, *a mouth; the mouth of the corolla being villoſe or bearded.*)

Lin. gen. Schreb. n. 327. *Forſt. gen.* 12. *Juſſ.* 420.

Claſſ. 5. 1. Pentandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* inferior, turbinate, five-cleft, permanent: *diviſions* ſhort, ſharp.

COR. one-petalled, funnel-form: *tube* widened, longer than the calyx: *throat* villoſe-bearded: *border* five-parted, ſpreading: *diviſions* ovate, ſharpiſh, the length of the tube.

STAM. *Filaments* five, ſhort, in the throat of the corolla. *Anthers* oblong, ſtanding out.

PIST. *Germ* ovate. *Style* filiform, longer than the tube. *Stigma* cylindric, blunt, grooved.

PER. *Capſule?* oblong, two-celled.

SEEDS very many, ſubangular, placed on a filiform receptacle.

ESSENTIAL CHARACTER.

Cal. turbinate, five-cleft. *Cor.* one-petalled, with a villoſe throat, and a five-parted border. *Capſ.* oblong, two-celled, many-ſeeded.

SPECIES.

1. Genioſtoma rupeſtris.

Forſt. fl. auſtr. n. 103.

Native of the iſle of Tanna in the South ſeas. Found there auguſt 9th, 1774.

GENIPA. See *Gardenia.*]

GENISTA. (*From genu, the knee; either becauſe it is flexible, like that joint; or becauſe it is ſuppoſed to be good for pains there.*)

Lin. gen. n. 859. *Reich.* 930. *Schreb.* 1167. *Gærtn. t.* 151. *Juſſ.* 353. Spartium. *Tournef.* 412. Geniſtella. *Tournef.* 413.

Claſſ. 17. 4. Diadelphia Decandria.

Nat. order of *Papilionaceæ* or *Leguminoſæ.*

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, ſmall, tubular, two-lipped: *upper lip* two-toothed, more deeply divided; *lower* three-toothed, nearly equal.

COR. papilionaceous. *Banner* oblong, remote from the keel, the whole reflex. *Wings* oblong, looſe, ſhorter than the others. *Keel* ſtraight, emarginate, longer than the banner.

STAM. *Filaments* ten, connate, emerging from the keel. *Anthers* ſimple.

PIST. *Germ* oblong. *Style* ſimple, riſing. *Stigma* ſharp, rolled in.

PER. *Legume* roundiſh, turgid, one-celled, two-valved.

SEEDS ſolitary, uſually kidney-form. (in G. tinctoria generally ſeveral.)

OBS. *In this genus,* Spartium *and* Ulex, *there is a ſingular caruncle, of a ſubſtance different from the integuments, ſurrounding the umbilicus.*

ESSENTIAL CHARACTER.

Cal. two-lipped, two and three-toothed: *banner* oblong, reflex downwards from the piſtil and ſtamens.

SPECIES.

* *Unarmed,* or *without thorns.*

[1. Geniſta canarienſis. *Canary Geniſta* or *Cytiſus.*

Lin. ſpec. 997. *ſyſt.* 645. *Reich.* 3. 404. *hort. cliff.* 355. 6. *mat. med.* 170.

Cytiſus 1. *Cluſ. hiſt.* 1. 94.—minoribus fol., ramulis tenellis villoſis. *Bauh. pin.* 390.

β. Cytiſus canarienſis, &c. *Comm. hort.* 2. 103. *t.* 52. *Seba theſ.* 2. *t.* 4. *f.* 6, 7. *Pluk. alm. t.* 277. *f.* 5.

Leaves ternate, pubeſcent on both ſides, branches angular.]

2. Geniſta candicans. *Hoary Geniſta,* or *Montpelier Cytiſus.*

Lin. ſpec. 997. *ſyſt.* 645. *Reich.* 405. *amœn.* 4. 284. *Gærtn. fruct.* 329.

Cytiſus monſpeſſulanus. *Lin. ſpec. edit.* 1. 740. *Sauv. monſp.* 191.

C. ſylveſtris candicans. *Cæſalp. plant.* 113.

Leaves ternate, villoſe underneath, peduncles lateral, leafed, ſuſtaining about five flowers, legumes hirſute.

[3. Geniſta linifolia. *Flax-leaved Geniſta,* or *Broom.*

Lin. ſpec. 997. *Reich.* 405. *L'Herit. ſtirp.* 184.

Cytiſus argenteus linifolius inſularum ſtoechadum. *Tournef. inſt.* 648. *Garid. aix.* 147. *Ger. prov.* 485. 6.

Leaves ternate, ſeſſile, linear, ſilky underneath.

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[a] Gærtner.

[b] Hort. kew.

4. Geniſta triquetra. *Triangular Geniſta* or *Broom.*
L'Herit. ſtirp. nov. 183. *t.* 88. *ined.* *Ait. hort. kew.* 3. 14. *Curt. magaz.* 314.

Leaves ternate, the upper ones ſimple; branches three-ſided procumbent.]

5. Geniſta ſagittalis. *Jointed Geniſta* or *Broom.*
Lin. ſpec. 998. *Reich.* 406. *hort. cliff.* 355. *Hall. helv. n.* 353. *Scop. carn. n.* 872. *Pollich pal. n.* 666. *Crantz auſtr.* 367. *Jacqu. auſtr.* 3. *t.* 209. *Mill. fig. t.* 259. *f.* 2. *D'Aſſo aragon. n.* 662. *Villars dauph.* 3. 420.

Geniſtella herbacea ſ. Chamæ-Spartium. *Bauh. hiſt.* 1. 393. *f.* 3.

Chamæ-Geniſta ſagittalis. *Bauh. pin.* 395.—pannonica. *Cam. hort. t.* 13.

Geniſtella montana Germanica. *Park. theat.* 230. 9. *Raii hiſt.* 1725.

G. lagopoides major. *Ger.* 1135. *f.* 5. *emac.* 1317. *f.* 5.

Branches ancipital membranaceous jointed, leaves ovate-lanceolate.

6. Geniſta tridentata.
Lin. ſpec. 998. *Reich.* 406.

Geniſtella fruticoſa luſitanica latifolia. *Tournef. inſt.* 646.

Chamæ-geniſta peregrina. *Dalech. hiſt.* 176.

C. caule foliato. *Bauh. pin.* 396.

β. G. frutic. luſit. anguſtifolia. *Tournef. inſt.* 646.

Branches three-ſided membranaceous ſomewhat jointed, leaves three-cuſped.

7. Geniſta tinctoria. *Common Dyer's Geniſta* or *Broom.*
Lin. ſpec. 998. *Reich.* 406. *hort. cliff.* 355. *Fl. ſuec. n.* 634. *mat. med.* 170. *Hudſ. angl.* 311. *With.* 758. *Lightf.* 384. *Relh. cant. n.* 513. *Sowerby engl. bot. t.* 44. *Hall. helv. n.* 350. *Scop. carn. n.* 873. *Pollich pal. n.* 667. *Neck. gallob.* 301. *Crantz. auſt.* 366. *Allion. pedem. n.* 1182. *Krock. ſileſ. n.* 1148. *Fl. dan. t.* 526. *Villars dauph.* 3. 421.

G. tinct. germanica. *Bauh. pin.* 395.

G. tinct. vulgaris. *Cluſ. hiſt.* 1. 101. *Park. theat.* 229. 7.

Geniſtella tinctoria. *Ger.* 1134. 1. *emac.* 1316. 1. *Raii hiſt.* 1725. *ſyn.* 474.

Tinctorius flos. *Bauh. hiſt.* 1. 391.

β. Rivin. tetr. t. 67. f. 1. G. tinct. latifolia Lucenſis. *Bauh. hiſt.* 1. 393. 1. *Raii hiſt.* 1725.

Leaves lanceolate ſmooth, branches ſtreaked round upright.

[8. Geniſta ſibirica. *Siberian Geniſta.*
Lin. ſyſt. 645. *Reich.* 407. *mant.* 571. *Jacqu. hort.* 2. *t.* 190.

Leaves lanceolate ſmooth, branches equal round upright.]

9. Geniſta florida. *Spaniſh Dyer's Geniſta* or *Broom.*
Lin. ſpec. 998. *Reich.* 407. *D'Aſſo aragon. n.* 663.

G. tinctoria hiſpanica. *Cluſ. hiſt.* 1. 101. *Park. theat.* 229. 8. *Raii hiſt.* 1725.

G. tinct. fruteſcens, fol. incanis. *Bauh. pin.* 395.

Geniſtella tinct. hiſp. *Bauh. hiſt.* 1. 392.

G. infectoria. *Ger.* 1134. *f.* 2. *emac.* 1316. *f.* 2.

Leaves lanceolate ſilky, branches ſtreaked round, flowers in bundles directed one way.

10. Geniſta piloſa. *Hairy Geniſta* or *Broom.*
Lin. ſpec. 999. *Reich.* 407. *hort. cliff.* 355. *Fl. ſuec. n.* 635. *Hudſ. angl.* 311. *With.* 759. *Engl. bot. t.* 208. *Roſe elem. bot. app.* 452. *t.* 3. *Hall. helv. n.* 351. *Scop. carn. n.* 874. *Pollich pal. n.* 668. *Jacqu. auſtr.* 3. *t.* 208. *Krock. ſileſ. n.* 1149. *D'Aſſo arag. n.* 664. *Villars dauph.* 3. 422.

Chamægeniſta 1. *Cluſ. hiſt.* 1. 103. 2.—pannonica. *Ger.* 1132. 6. *emac.* 1313. 6.—fol. Geniſtæ vulgaris. *Bauh. pin. Raii hiſt.* 1725. 1.

Geniſtella piloſa. *Bauh. hiſt.* 1. 393. 2.

Leaves ſolitary lanceolate obtuſe, ſomewhat hairy; peduncles the length of the calyx, ſtandard hairy on the outſide, branches diffuſed.

[11. Geniſta humifuſa.
Lin. ſpec. 998. *Reich.* 408.

G. orientalis minima, &c. *Tournef. cor.* 44.

Leaves lanceolate ciliate, branches proſtrate ſtreaked villoſe.]

** *Thorny.*

12. Geniſta anglica. *Engliſh Geniſta, Petty Whin,* or *Needle Furze.*
Lin. ſpec. 999. *Reich.* 408. *hort. cliff.* 355. *Hudſ. angl.* 311. *With.* 759. *Lightf.* 384. *Relh. n.* 514. *Engl. bot. t.* 132. *Fl. dan. t.* 619. *Villars dauph.* 3. 422.

G. minor aſpalathoides, ſ. G. ſpinoſa anglica. *Bauh. pin.* 395. *prodr.* 157. *Raii hiſt.* 1731. *ſyn.* 475.—G. ſpinoſa minor germanica. *Bauh. pin.* 395. affirmante Stokes, refragante Raio.

G. aculeata. *Ger.* 1140. 5. *emac.* 1320. 4.

Geniſtella. *Dod. pempt.* 760.—aculeata. *Lob. ic.* 2. 93. 2. *Park. theat.* 1004. 4.

Thorns ſimple awl-ſhaped, flowering branches abbreviated unarmed, leaves lanceolate acute, legumes ſtraightiſh.

[13. Geniſta germanica. *German Geniſta* or *Broom.*
Lin. ſpec. 999. *Reich.* 408. *Hall. helv. n.* 352. *Scop. carn. n.* 876. *Pollich pal. n.* 669. *Crantz. auſtr.* 364. *Krock. ſileſ.* 1150. *D'Aſſo aragon. n.* 665. *Villars dauph.* 3. 422.

G. ſpinoſa minor germanica. *Bauh. pin.* 395.

G. aculeata. *Tabern. hiſt.* 1102. *Raii hiſt.* 1728. 1.

Geniſtella ſpinoſa. *Rivin. tetr. t.* 67. *Fuchſ. hiſt.* 220.

Thorns compound, flowering branches elongated unarmed, leaves lanceolate hairy, legumes oblong ſtraightiſh.

14. Geniſta hiſpanica. *Dwarf prickly Geniſta* or *Broom.*
Lin. ſpec. 999. *ſyſt.* 646. *Reich.* 408. *Ger. prov.* 483. 4. *Gouan. monſp.* 357. *D'Aſſo aragon. n.* 666. *Villars dauph.* 3. 423. *Jacqu. ic.* 2. *collect.* 2. 165.

G. ſylveſtris. *Scop. carn. n.* 875.

G. ſpinoſa minor hiſpanica villoſiſſima. *Bauh. pin.* 395.

Geniſtella monſpeliaca ſpinoſa. *Bauh. prodr.* 157. *Raii hiſt.* 1728. 3.

G. montis ventoſi ſpinoſa. *Bauh. hiſt.* 1. 400. *Raii hiſt.* 1728. 2.

Spines decompound, flowering branches unarmed, leaves linear-lanceolate hairy, legumes ovate ſtraight.

15. Geniſta luſitanica. *Portugal Geniſta* or *Broom.*
Lin. ſpec. 999. *Reich.* 409.

Geniſta-Spartium ſpinoſum minus. *Bauh. pin.* 394. *Park. theat.* 1001. *f.* 1.

Scorpius ſecundus. *Cluſ. hiſt.* 1. 107. *Bauh. hiſt.* 1. 403. *f.* 1. *Raii hiſt.* 1730. 2.

Stem leafleſs, thorns decuſſated.

16. Geniſta ſcandens. *Climbing Geniſta* or *Broom.*
Lour. cochinch. 428.

Spines ſimple, ſtem climbing, leaves bipinnate.

17. Geniſta hirſuta.
Vahl ſymb. 1. 51.

Geniſta-Spartium luſitanicum lanuginoſum, aculeis tridentatis longioribus munitum. *Tournef. inſt.* 645.

Spines ternate decuſſated, leaves ſimple lanceolate, ſpikes terminating hirſute.

DESCRIPTIONS, &c.

Theſe are Shrubs or Underſhrubs, ſome furniſhed with thorns or prickles, but many more ſpecies without them. In moſt of them the leaves are ſimple and lanceolate; but in ſome they are ternate; and one ſpecies is leafleſs. Stipules very ſmall, or ſcarcely any. Flowers both at the ends of the branches and in the axils, ſometimes ſolitary, but more frequently in ſpikes; with a yellow corolla.

1. Leaves obovate, ſomewhat mucronate; but the floral leaves ſubſeſſile, minute. Calyx trifid, the loweſt ſegment three-toothed. Flowers in corymbs, five or ſix together. Legumes white-villoſe. The flowers are ſweet[a].

Native of Spain and the Canaries. Cultivated in 1656, by Mr. John Tradeſcant, junior. It flowers from may to ſeptember[b].]

2. It riſes to the height of ſeven or eight feet, ſending out many ſlender branches, the upper parts of which, for more than a foot in length, ſend out ſmall flowering-branches on their ſides, ſupporting

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[a] Linn. ſyſt.

[b] Hort. kew.

five yellow flowers, which appear in june and july: the ſeeds ripen in autumn.

[This reſembles the foregoing ſpecies, but the leaflets are larger, oval, pubeſcent underneath only, ſharp at both ends. The lateral ſhoots are ſhort. Calyxes trifid. Flowers without ſcent. Floral leaves petioled, ſcarcely ſmaller than the others[c].

Legume oblong, narrow, compreſſed, obſcurely ſwelling, brown with a white pile; the valves deeply excavated within, but ſcarcely ſo as to form diſtinct cells. Seeds four or ſix, ſomewhat kidney-ſhaped, black, ſmooth, ſublucid; with a glandular, prominent, permanent rim, ſhaped like a creſcent, and of a white or yellow colour, round the umbilicus[d].

Native of Spain, Italy, and France. Cultivated in 1748, by Mr. Miller[e].

3. This is a ſmall ſhrub, with branches that are knotty from indentations left by the fallen leaves; the branchlets or ſhoots are leafy, angular, upright, ſilky. Leaves crowded, alternate; leaflets nearly equal, ſharp, rolled back at the edge. Flowers in racemes at the ends of the branches. Calyx three-parted, the loweſt ſegment trifid. Corolla like that of *G. tinctoria*. Legumes villoſe.

Native of the Levant and Spain[f].

4. Native of Spain, Italy, and France. Cultivated in 1748, by Mr. Miller. It flowers from april to june[g].

It is a hardy, evergreen, trailing ſhrub, producing a vaſt profuſion of bloom, which renders it eminently conſpicuous in may and june: it rarely produces ſeed. When tied up properly, and trained to a ſtake, it may vie with moſt of our ornamental ſhrubs[h].]

5. This ſends out ſeveral ſtalks, which ſpread flat on the ground, and divide into many flat branches which are jointed, and their two ſides are edged like a broad-ſword; they are herbaceous but perennial. At each of the joints is placed one ſmall ſeſſile ſpear-ſhaped leaf, ending in a point, of a deep-green colour and ſmooth. The flowers are produced in cloſe ſpikes at the ends of the branches, and are ſucceeded by ſhort hairy pods, which contain three or four kidney-ſhaped ſeeds.

[The ſtalks above the leaves have three wings, under them two. There is one bracte below the peduncle, and two below the calyx. The banner is flat, rounded and emarginate; the keel in two parts; all the filaments connected; the pollen fulvous; the ſtigma ſomewhat villoſe[i].

According to Haller, the banner is reflex, the wings a little ſhorter than the keel, which is equal in length to the banner: the tenth filament diſtinct from the reſt: legumes black, flatted, containing four ſhining ſeeds, almoſt round: ſometimes five or ſix, according to others.

Native of France, Germany, Switzerland, Savoy, Auſtria, Carniola, Italy, and Spain. I gathered it on Mont Saleve in Savoy. It flowers in june, ſometimes in may, and ripens the ſeeds in ſeptember. Cultivated in 1758, by Mr. Miller[k].

6. Very nearly allied to the foregoing, but all the parts are larger, and the joints of the branches terminate in a lateral leaf, not entire, but three-cuſped. Legumes woolly-white.

Native of Portugal[l].

Neither Miller's n. 6. nor that which he has figured in t. 138. can be this ſort.

7. The roots creep far and wide. Stems many, angular, tough, from a foot to eighteen inches or two feet in height, ſometimes more; branches ſubdivided, ending in ſhort ſpikes of yellow flowers, with ſtipules between them. Leaves alternate, ſeſſile, quite entire, acuminate, an inch long and two lines broad, ſmooth, except that the edges and the nerve underneath are ſlightly villoſe[m]. The five clefts of the calyx are nearly equal. Standard of the corolla ovate, blunt (emarginate, *Haller*, acuminate, *Scop.*), wings oblong-oval, keel compreſſed: ſtigma a little knob. The loweſt ſtamen longer than the others. Legume ſmooth, almoſt flat, containing ſeveral ſhining ſeeds ſhaped like thoſe of the Lentil[n].

Native of moſt parts of Europe, in paſtures and the borders of fields, particularly in dry gravelly or ſandy ſoils: flowering in july. In the old writers it is called Baſe Broom, Green weed, or Green-wood, Dyer's-weed, and Wood-waxen.

When cows feed on it, their milk, and the butter or cheeſe made from it, are ſaid to be very bitter.

A bright yellow colour may be prepared from the flowers; and for wool that is to be dyed green with woad, the dyers prefer it to all others.

A dram and half of the powdered ſeeds operates as a mild purgative. A decoction of the plant is ſometimes diuretic, and therefore has proved ſerviceable in dropſical caſes. A ſalt prepared from the aſhes is recommended in the ſame diſorder[o].

8. This reſembles the foregoing, but the ſtalks are neither ſtreaked nor angular; they are ſcarcely marked with lines, nor are the ſtem and leaves at all villoſe. The leaves are ſomething narrower. The flowers are very remote, in a kind of panicled ſpike.

Native of Siberia[p].]

9. This riſes with woody ſtalks two or three feet high, ſending out many taper channelled branches, which grow erect. Leaves ſmall, alternate. Spikes of flowers terminating; ſucceeded by ſhort pods, which turn black when ripe, and contain four or five kidney-ſhaped ſeeds.

[The calyxes as well as the leaves are ſilky and ſhining. *D'Aſſo.*

Native of Spain. Mr. Ray found it near Naples, by the Camaldules.—Cultivated in 1768, by Mr. Miller[q]. It flowers in june and july, and the ſeeds ripen in autumn.

10. This differs from the Common Dyer's weed (n. 7.) in having the branches depreſſed on every ſide and procumbent; whereas that is upright[r].

Root long, running obliquely, and furniſhed with many ſmall fibres. Stem a foot in length or more, much branched, tough; the old branches naked, the young ones cloathed with numerous, minute, oval or oval-lanceolate leaves, entire, ſmooth on the upper ſurface, beneath covered with long white ſilky hairs. Flowers in ſhort ſpikes on the ſummit of the branches, on ſhort hairy peduncles. Calyx divided into two nearly equal, acute, hairy, yellowiſh green lips. Corolla except the wings, hairy on the outer ſurface. Legumes hairy[s], containing many ſeeds, ſometimes only two[t]. The legumes are about an inch in length and turn black. To this we may add, that the leaves ſometimes come out two, three, or four together[u].

Native of Sweden, Germany, Auſtria, Carniola, Hungary, Switzerland, France, Italy, and Spain. Not known to grow wild in England till it was diſcovered about Lachford, four or five miles from St. Edmund's Bury in Suffolk, by the late excellent Sir John Cullum, Bart. and Mr. Dickſon. Mr. Woodward obſerves that Cavenham and other heaths near Bury appear yellow with the great plenty of theſe flowers; the flowering branches ſtanding up: at other times it is difficult to find this ſhrub; the ſtem and branches being ſo cloſely procumbent, that they are often found even beneath the moſs. It flowers in may.

11. Native of the Levant[x].

12. Stem much branched: branches tough, without leaves, furniſhed with extremely ſharp ſlender thorns, from a quarter to half an inch in length; the ſhoots of the year grow in bundles on the ſummits of the old ones, and ſparingly from the ſides, bearing numerous, ſmall, bright green, (glaucous on the young ſhoots, *Ray*) oval or lanceolate, (narrower and ſharper on the older branches, *Ray*)

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[c] Linn. ſyſt. [d] Gærtner. [e] Hort. kew. [f] Linn. ſpec.
[g] Hort. kew. [h] Curtis. [i] Scopoli. [k] Hort. kew.
[l] Linn. ſpec. [m] Haller, Pollich, Krocker.

[n] Withering, Scopoli, Haller, Krocker.
[o] Withering, Lightfoot, Krocker, Allioni.
[p] Linn. mant. [q] Hort. kew. [r] Linn. ſuec.
[s] Woodw. Mſs. [t] Reichard. [u] Roſe and D'Aſſo.
[x] Linn. ſpec.

ſmooth, entire leaves, intermixed with ſoft ſpines, (ſcattered; but ſometimes there are none, *Relh.*). Flowers ſmall, pale yellow, few. Legumes ſhort and broad, ſmooth, containing three or four ſeeds[y]. Calyx yellow; ſtigma a ſmall knob[z].

Native of Dauphiné, Denmark, and Britain, on heaths, uſually in moiſt ſpongy ground. It flowers from the end of may to july.

13. Stems about a foot and half in height, very much branched. The old branches have no leaves, but ſtrong, branched thorns; the younger ones are full of green hairy leaves, of an ovate-lanceolate form, the lower ones broader and rather ovate: they come out either in threes, or ſingly alternate: theſe alſo frequently have ſoft, tender, ſimple thorns. Flowers in a ſpike, long, and almoſt ſeſſile: banner cordate, reflex, and thus much ſhorter than the keel, which is ſtraight, and much longer than the wings. The tenth ſtamen diſtinct; pollen fulvous: the anthers in ſome flowers thick and white. Legume ſhort, broad, hairy, black, having two, three, or four ſeeds[a].

Native of Germany; Switzerland, as about Lauſanne, Bazil, &c. Savoy, on Mont Saleve, near Geneva, obſerved by Ray. Dauphiné, Piedmont, Carniola, Aragon; in dry woody places. It flowers the end of may or the beginning of june, and ripens its ſeeds in ſeptember. Introduced in 1773 by John earl of Bute[b].]

14. This riſes with woody ſtalks, two or three feet high, ſending out many taper channelled branches, which grow erect. Leaves ſmall, alternate. Flowers yellow, in terminating ſpikes, ſucceeded by ſhort pods, which turn black when ripe, and contain four or five kidney-ſhaped ſeeds.

[Very much allied to G. germanica[c], but is low, villoſe and procumbent; whereas that has an upright ſtem[d].

Gerard (in fl. gallo-prov.) cannot ſee in what this differs from Geniſtella ſpinoſa, *Rivin.* He thus deſcribes it.—Stems at bottom beſet with branching ſpines ending in a yellow point, having no leaves, but putting forth at top, woolly, leafy ſhoots. Lower leaves lanceolate-linear, upper narrower, all hirſute and alternate. Rudiments of thorns, and of ſubulate leaves appear in the axils of the leaves. Flowers terminate the branches on very ſhort peduncles: calyx tomentoſe; banner ſubvilloſe; ſtigma hooked.

Scopoli deſcribes his *G. ſylveſtris* to have ſimple, ſtreaked, ſoft ſtalks, ſomewhat villoſe. Leaves villoſe only underneath. Thorns ſoft; with branches not ſpreading. Flowers in bunches, looſely diſpoſed in a ſpike about two inches long. Calyx never very hairy. Keel twice the length of the wings. He adds, that he and a friend, ſent ſpecimens of this plant to Linneus, who writ back that it was the ſame with his *G. hiſpanica*: but that he ſaw afterwards a very different plant under this name in the collection of Mygind; and which he deſcribes.

Native of Spain, South of France, and Carniola. Cultivated in 1759, by Mr. Miller[e]. It flowers in june and july, and the ſeeds ripen in autumn.

15. The woody ſtems are leafleſs, the younger ſtems are leafy, and covered with decuſſated ſpines.

Native of Portugal. Introduced in 1771, by Mrs. Primmet. It flowers from march to may[f].

16. This is a large ſhrub, with a very long, round, climbing, branched ſtem, having many ſhort, recurved ſpines ſcattered over it. Leaves bipinnate, with ovate, entire, oppoſite leaflets. Flowers in large, looſe, terminating, pendulous racemes. Corolla yellow, with an oblong reflex banner. Calyx of the ſame colour. Legume roundiſh, compreſſed, ſmooth, containing one large compreſſed ſeed.

Native of Cochinchina near rivers, mounting to the top of large trees, and covering them with its golden flowers[g].

17. This is a very thorny rigid ſhrub, with round branches, leafleſs below, extremely hirſute at top. Leaves ſeſſile, hirſute. Thorns from the axils, alternate, ſpreading very much, ſtout, decuſſated, an inch long, yellowiſh at the tip, ſmooth, very finely ſtreaked, having a ſhorter horizontal thorn on each ſide at the baſe. Spike of flowers from the ends of the branches, an inch in length, imbricate, very hirſute. Bractes in threes at the baſe of the flowers, ſhorter than the calyx, hairy, lateral, linear, the middle one lanceolate-acuminate. Calyx hairy, with awl-ſhaped ſegments. Corolla yellow, with a hairy banner.

Native of old Caſtille[h].]

PROPAGATION AND CULTURE.

All theſe ſhrubs are propagated by ſeeds, which, if ſown in the autumn, will ſucceed much better than if ſown in the ſpring, and a year will be thereby ſaved; as theſe plants ſend out long, ſtringy, tough roots, which run deep into the ground, they do not bear tranſplanting well, eſpecially if they are not removed young; therefore the beſt way is to ſow a few ſeeds in thoſe places where the plants are deſigned to remain, and to pull up all except the moſt promiſing plants as ſoon as they are paſt danger; after this the plants will require no other culture, but to keep them clean from weeds: but where this cannot be practiſed, the ſeeds may be ſown thin upon a bed of light earth, and when the plants come up, they muſt be kept clean from weeds till the following autumn, when the plants ſhould be carefully taken up and tranſplanted where they are deſigned to remain.

Many of the ſorts are very hardy, and will grow in almoſt any ſoil or ſituation. Some of them (1, 2, 3, 4, 6, 9, 11, 14, 15, 17.) muſt have a ſheltered ſituation and dry ſoil, to carry them through our winters.

[The firſt, third, and ſixteenth require the protection of a green-houſe. The ſorts which do not produce ſeeds here may be increaſed by layers.

Genista. See *Aſpalathus*, *Crotalaria*, *Hedyſarum*, *Indigofera*, *Sophora*, *Spartium*.

Genista africana. See *Aſpalathus*, *Borbonia*, *Liparia*, *Sophora*, *Spartium*.

Genista-Spartium. See *Anthyllis*, *Geniſta*, *Hedyſarum*, *Pſoralea*, *Ulex*.]

Genista spinosa. See *Hedyſarum*, *Ulex*.

Genistæ affinis. See *Pſoralea*.

[Genistella. See *Aſpalathus* and *Geniſta*.

Gentian. See *Gentiana*.]

GENTIANA. (*From Gentius King of Illyria.*)

Lin. gen. n. 322. *Reich.* 352. *Schreb.* 450. *Tourn.* 40. *Juſſ.* 141. *Gærtn. t.* 114.—Centaurium minus. *Tournef.* 48. Chironia. *Curt.* 4. 22.

Claſſ. 5. 2. Pentandria Digynia.

Nat. order of *Rotaceæ*.—*Gentianæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* five-parted, ſharp: *diviſions* oblong, permanent.

Cor. *Petal* one, tubular at bottom, imperforate, at top five-cleft, flat, withering, various in form.

Stam. *Filaments* five, ſubulate, ſhorter than the corolla: *Anther* ſimple.

Pist. *Germ* oblong, cylindric, length of the ſtamens. *Styles* none. *Stigmas* two, ovate. (Germ ſuperior; ſtyle ſimple, or two ſeſſile ſtigmas, *G.*)

Per. *Capſule* oblong, columnar, acuminate, ſlightly bifid at the tip, one-celled, two-valved.

Seeds numerous, ſmall, fixed all round to the walls of the capſule, *G.*) *Receptacles* two, each faſtened longitudinally to a valve.

Obs. *The figure of the fruit is conſtant: but both that and the number in the flower varies much in the different ſpecies.*

Some ſpecies exclude a fifth part of the number in the flower.—One adds three parts of the number in the flower.—One ſpecies has the neck of the corolla ſpreading: a ſecond has the neck cloſed with hairs: a third has the

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[y] Woodw. Mſs.
[z] Withering.
[a] Haller, Scopoli, Pollich.
[b] Hort. kew.
[c] Linn. ſyſt.
[d] Villars.
[e] Hort. kew.
[f] Ibid.
[g] Loureiro.
[h] Vahl.

ſegments of the corolla ciliate: a fourth has a bell-ſhaped, upright, plaited border: in a fifth it is ſtarred, with ſmall ſegments interpoſed between the larger ones: ſome have a bell-ſhaped, and others have a funnel-ſhaped corolla, &c.

ESSENTIAL CHARACTER.

Cor. monopetalous. *Capſ.* ſuperior, two-valved, one-celled; with two longitudinal receptacles.

SPECIES.

* *Corollas five-cleft or thereabouts, and ſomewhat bell-ſhaped.*

[1. Gentiana viſcoſa. *Clammy Gentian.*
Ait. hort. kew. 1. 321.
Exacum viſcoſum. *Smith ic. rar.*
Corollas five-cleft, one-ſtyled; panicles trichotomous, bractes perfoliate, leaves oblong three-nerved.]

2. Gentiana lutea. *Yellow Gentian.*
Lin. ſpec. 329. *ſyſt.* 267. *Reich.* 1. 636. *mat. med.* 75. *hort. cliff.* 80. *fl. lapp.* 96. *ſuec. n.* 227. *Hall. helv. n.* 637. *Scop. carn. n.* 298. *Krock. ſileſ. n.* 381. *Allion. pedem. n.* 365. *Villars dauph*, 2. 511. *Mill. fig. t.* 139. *f.* 2. *Sabbat. hort.* 1. *t.* 10. *Woodv. med. bot.* 434. *t.* 156. *Plenck, ic. t.* 156.
Gentiana. *Cam. epit.* 415. *Fuchſ. hiſt.* 200. *Dod. pempt.* 342.—major. *Ger.* 351. 1. *emac.* 432. 1. *Park. parad.* 350. *n.* 1. 351. *f.* 2. *Raii hiſt.* 716. —lutea. *Bauh. pin.* 187. *Park. theat.* 402. *f.* 1. *parad.* 350. *Mor. hiſt.* 3. 484. *f.* 12. *t.* 4. *f.* 1.—vulgaris major Ellebori albi folio. *Bauh. hiſt.* 3. 520.—fl. pallido. *Barrel. ic.* 63.
Aſterias. *Renealm. ſpec.* 64. *t.* 63.
Corollas uſually five-cleft wheel-ſhaped in whorls, calyxes ſpathaceous.

[3. Gentiana purpurea. *Purple Gentian.*
Lin. ſpec. 329. *ſyſt.* 267. *Reich.* 637. *Hall. helv. n.* 639. *Fl. dan. t.* 50. *Gunn. norv. n.* 97. *Krock. ſileſ. n.* 382. *Plenck, ic. t.* 159.
G. major purpurea. *Bauh. pin.* 187. *Mor. t.* 4. *f.* 3.—fl. purpureo & albo. *Park. theat.* 402. *n.* 1, 2.—1 Cluſii. *Ger. emac.* 432. *f.* 2.—alia. *Camer. epit.* 416.—magna fl. purpureo & albo. *Bauh. hiſt.* 3. 521. *f.* 1. *Raii hiſt.* 716.
Coilantha. *Renealm. ſpec.* 65.
Corollas uſually five-cleft bell-ſhaped in whorls, calyxes truncate.

4. Gentiana macrophylla.
Pallas fl. roſſ. 108. *t.* 96. *Gmel. ſib.* 4. 104. *n.* 72. *t.* 52.
Flowers five-cleft ſeſſile in whorls, root-leaves equal to the ſtem which is almoſt naked.

5. Gentiana campanulata.
Lin. ſyſt. 267. *Jacqu. auſtr.* 5. *app. t.* 29.
Corollas bell-ſhaped ſeven-cleft ſtreaked unſpotted, calyxes ſeven-cleft.

6. Gentiana punctata. *Spotted-flowered Gentian.*
Lin. ſpec. 329. *ſyſt.* 267. *Reich.* 637. *Allion. pedem. n.* 349. *Krock. ſileſ. n.* 383. *Jacqu. auſtr.* 5. 42. *t. app.* 28.
G. major fl. punctato. *Bauh. pin.* 187. *Mor. t.* 4. *f.* 2.—pallido fl. punctis diſtinctis. *Cluſ. hiſt.* 312. *Raii hiſt.* 717.—fl. pallido punctato. *Park. theat.* 402. *n.* 3.
Corollas bell-ſhaped five-cleft or thereabouts dotted, calyxes five-toothed.

7. Gentiana pannonica.
Lin. ſyſt. 267. *Jacqu. auſtr.* 2. *t.* 136. *Scop. carn. n.* 297. *Hall. helv. n.* 638.
G. punctata. *Jacqu. obſ.* 2. 17. *t.* 39.
Corollas bell-ſhaped ſix or ſeven-cleft dotted, calyxes uſually ſix-cleft, ſtem-leaves lanceolate acuminate.

8. Gentiana ſeptemfida.
Pallas fl. roſſ. 101. *t.* 92. *f.* 3.
Corollas ſeven and five-cleft, with ciliate ſegments interpoſed; leaves ovate-acuminate ſomewhat ſtem-claſping.]

9. Gentiana aſclepiadea. *Swallow-wort leaved Gentian.*
Lin. ſpec. 329. *Reich.* 637. *hort. cliff.* 80. *Hall. helv. n.* 640. *Jacqu. auſtr.* 4. *t.* 328. *Allion. pedem. n.* 350. *Krock. ſileſ. n.* 384. *Pallas roſſ.* 102. *Villars dauph.* 2. 524.
G. Aſclepiadis folio. *Bauh. pin.* 187. *Park. parad.* 350. *n.* 2. *Bauh. hiſt.* 523. *f.* 1. *Raii hiſt.* 717.—major 2 Cluſii. *Ger.* 351. *f.* 2. *emac.* 433. *f.* 3.
Daſyſtephana. *Renealm. ſpec.* 67. *t.* 68.
Corollas five-cleft bell-ſhaped oppoſite ſeſſile, leaves ſtem-claſping.

[10. Gentiana triflora.
Pallas fl. roſſ. 105. *t.* 93. *f.* 1.
Corollas bell-ſhaped five-cleft aggregate-ſeſſile, leaves linear, floral leaves four, two longer and two ſhorter.]

11. Gentiana Pneumonanthe. *Marſh Gentian*, or *Calathian Violet.*
Lin. ſpec. 330. *Reich.* 638. *hort. cliff.* 80. *fl. ſuec. n.* 228. *Hudſ. angl.* 102. *With.* 261. *Sowerby engl. bot. t.* 20. *Hall. helv. n.* 641. *Scop. carn. n.* 295. *Pollich pal. n.* 256. *Allion. pedem. n.* 352. *Krock. ſileſ. n.* 385. *Fl. dan. t.* 269. *Villars dauph.* 525. *Pallas roſſ.* 105. *Plenck, ic. t.* 160.
G. paluſtris anguſtifolia. *Bauh. pin.* 188. *Raii hiſt.* 719. *ſyn.* 274.—anguſt. autumn. major. *Bauh. pin. Mor. t.* 5. *f.* 12.
G. autumnalis, Pneumonanthe dicta. *Park. theat.* 406. 1.
G. calathiana. *Bauh. hiſt.* 3. 524. 1.
G. 4. Cluſ. hiſt. 1. 313. *f.* 2.
Pneumonanthe. *Cord. hiſt.* 1. 162. *Lob. ic.* 309. *Ger.* 355. *emac.* 438.
Cyana. *Renealm. ſpec.* 69. *t.* 63.
Corollas five-cleft bell-ſhaped; flowers peduncled; leaves linear.

[12. Gentiana Saponaria. *Soap-wort-leaved Gentian.*
Lin. ſpec. 330. *Reich.* 638. *Gron. virg.* 29. 40. *Pluk. alm. t.* 186. *f.* 1. *Mor. hiſt.* 3. 484. *f.* 12. *t.* 5. *f.* 4. *Cateſb. car.* 1. *t.* 70.
Corollas five-cleft bell-ſhaped ventricoſe in whorls, leaves three-nerved.

13. Gentiana villoſa.
Lin. ſpec. 330. *ſyſt.* 267. *Reich.* 638. *Gron. virg.* 145. 40.
Corollas five-cleft bell-ſhaped ventricoſe, leaves villoſe.]

14. Gentiana acaulis. *Dwarf G.*, or *Gentianella.*
Lin. ſpec. 330. *ſyſt.* 267. *Reich.* 639. *hort. cliff.* 81. *Hall. helv. n.* 642. *Scop. carn. n.* 294. *Jacqu. auſtr.* 2. *t.* 135. *Krock. ſileſ. n.* 386. *Villars dauph.* 525. *Gærtn. fruct.* 2. 159. *Curtis magaz. t.* 52. *Cluſ. hiſt.* 314. 5.
G. alpina latifolia, magno flore. *Bauh. pin.* 187. *prodr.* 97. *Raii hiſt.* 718. *Bauh. hiſt.* 3. 523. *f.* 2.
Gentianella verna. *Park. parad.* 352. *n.* 4. 351. *f.* 3.—major. *Cluſ. hiſt.* 315. *Ger. emac.* 436. *f.* 1. *Park. theat.* 403. *f.* 1. *Mor. t.* 5. *f.* 14.
β. G. alpina anguſtifolia, magno flore. *Bauh. pin.* 187. *Raii hiſt.* 718. 1. *Villars dauph.* 2. 526. 7.
Thylacitis. *Renealm. ſpec.* 70. *t.* 68.
Corolla five-cleft bell-ſhaped higher than the ſtalk.

[15. Gentiana nana.
Lin. ſyſt. 267. *Jacqu. miſc.* 1. *t.* 18. *f.* 3. *Allion. pedem. n.* 360. *Krock. ſileſ. n.* 390.
G. brachiphylla. *Villars dauph.* 2. 528.
Corolla five-cleft bell-ſhaped bearded on the throat, ſtem-leaves ovate.]

16. Gentiana exaltata.
Lin. ſpec. 331. *Reich.* 639. *Plum. ic.* 81. *f.* 1.
Corollas five-cleft crowned notched, peduncle very long dichotomous terminating.

[17. Gentiana decumbens.
Lin. ſyſt. 268. *ſuppl.* 174.
G. adſcendens. *Pall. roſſ.* 106. *t.* 94. *Gmel. ſib.* 4. *n.* 70. *t.* 51. *f.* A.
Corollas five-cleft bell-ſhaped, root-leaves lanceolate very long, ſtalk decumbent.

18. Gentiana algida.
Pallas fl. roſſ. 107. *t.* 95. *itin.* 3. *app.* 724. *n. tab.* L. *f.* 2. *Gmel. ſib.* 4. 106. *n.* 75.
Corollas five-toothed bell-ſhaped ſeſſile dotted, root-leaves in bunches.

19. Gentiana ſaxoſa.
Lin. ſyſt. 268. *ſuppl.* 175. *Forſt. in act. holm.* 1777. *p.* 183. *t.* 5. *fl. auſtr. n.* 132.
Corollas five-cleft bell-ſhaped, leaves ſpatulate.

20. Gentiana montana.
Forſt. fl. auſtr. n. 133.
Corollas five-cleft bell-ſhaped, leaves heart-ſhaped ſeſſile.

21. Gentiana glauca.
Pallas fl. roſſ. 104. *t.* 93. *f.* 2.
Corolla five-cleft bell-ſhaped; flowers ſeſſile; leaves ovate-rounded.

** *Corollas five-cleft or thereabouts, and funnel-ſhaped.*

22. Gentiana verna.
Lin. ſpec. 331. *ſyſt.* 268. *Reich.* 639. *Hall. helv. n.* 644. *Scop. carn. n.* 291. *Krock. ſileſ. n.* 387. *Villars dauph.* 2. 526.
G. alpina verna major. *Bauh. pin.* 188. *Mor. t.* 5. *f.* 13.
Gentianella verna minor. *Cluſ. hiſt.* 315. *Park. theat.* 403. *n.* 3. *f.* 2. *Raii hiſt.* 718. 3.—alpina verna. *Ger.* 354. *f.* 2. *emac.* 436. *f.* 2.—quæ hippion. *Bauh. hiſt.* 3. 527. *f.* 3.
Ericaile. *Renealm. ſpec.* 75. *t.* 68.
Corolla five-cleft longer than the ſtalk, root-leaves crowded larger than the others.

23. Gentiana pyrenaica.
Lin. ſyſt. 268. *Reich.* 640. *mant.* 55. *Gouan illuſt.* 7. *t.* 2. *f.* 2.
Corolla ten-cleft equal, the outer diviſions ruder than the others.

24. Gentiana altaica.
Pallas fl. roſſ. 109. *t.* 97. *f.* 1.
Corolla ten-cleft, the clefts alternately ſmaller and ſerrulate; ſtalk ſhorter than the flowers.

25. Gentiana pumila.
Lin. ſyſt. 268. *Reich.* 640. *Jacqu. vind.* 215. *obſ.* 2. 29. *t.* 49. *fl. auſtr.* 4. *t.* 302. *Scop. carn. n.* 290. *Villars dauph.* 2. 527.
Corolla five-cleft ſubſerrate, leaves lanceolate-linear.

26. Gentiana bavarica. *Bavarian Gentian.*
Lin. ſpec. 331. *ſyſt.* 268. *Reich.* 640. *hort. cliff.* 81. *Hall. helv. n.* 645. *Jacqu. obſ.* 2. *t.* 71. *Cam. hort.* 65. *t.* 15. *f.* 2. *Pallas roſſ.* 110. *Villars dauph.* 2. 527.
Corolla five-cleft ſerrate, leaves ovate obtuſe.

27. Gentiana aurea.
Lin. ſpec. 331. *Reich.* 640. *Barrel. ic.* 3. *t.* 104. *f.* 1.
Corollas five-cleft extremely acuminate, throat beardleſs and awnleſs, branches oppoſite.]

28. Gentiana nivalis.
Lin. ſpec. 332. *Reich.* 641. *fl. lapp.* 95. *ſuec. n.* 231. *Hall. helv. n.* 647. *ed.* 1. 475. *t.* 7. *f.* 5. *Jacqu. vind.* 214. *Fl. dan. t.* 17. *Villars dauph.* 2. 528.
G. alpina æſtiva, centaureæ minoris folio. *Bauh. pin.* 188. *Raii hiſt.* 720. *n.* 10. *Mor. t.* 5. *f.* 3.
G. minima. *Lob. adv.* 131. *ic.* 310.
Corollas five-cleft, branches one-flowered alternate.

[29. Gentiana aquatica.
Lin. ſpec. 332. *Reich.* 641. *amœn.* 2. 343. *Pallas roſſ.* 109. *t.* 97. *f.* 2. *Gærtn. fruct.* 159. *Amm. ruth.* 4. *t.* 1. *f.* 1. *Gmel. ſib.* 4. 110. *n.* 76. *Thunb. jap.* 115. *Lour. cochinch.* 172.
Corollas five-cleft terminating ſeſſile, leaves membranaceous at the edge.]

30. Gentiana utriculoſa.
Lin. ſpec. 332. *Reich.* 641. *Hall. helv. n.* 646. *Scop. carn. n.* 292. *Pollich pal. n.* 257. *Barr. rar.* 18. *t.* 48. *Allion. pedem. n.* 361.
G. utriculis ventricoſis. *Bauh. pin.* 188.
G. cærulea cordata. *Col. ecphr.* 220. *t.* 221.
G. cær. calyce turgido pentagono. *Raii hiſt.* 721. *n.* 12.
Corollas five-cleft ſalver-ſhaped, calyxes plaited and keeled.

31. Gentiana exacoides.
Lin. ſpec. 332. *Reich.* 642. *Thunb. prodr. cap.* 47. *Burm. afr.* 208. *t.* 74. *f.* 5. *Pluk. alm. t.* 275. *f.* 4. *Seba muſ.* 1. *t.* 22. *f.* 7.
Corollas five-cleft ſalver-ſhaped, calyxes membranaceous and keeled, ſtalk dichotomous, leaves cordate.]

32. Gentiana Centaurium. *Centory Gentian*, or *Leſſer Centory.*
Lin. ſpec. 332. *ſyſt.* 268. *Reich.* 642. *mat. med.* 75. *hort. cliff.* 81. *fl. ſuec. n.* 232. *Hudſ. angl.* 102. *Relh. cant. n.* 192. *Hall. helv. n.* 648. *Scop. carn. n.* 293. *Pollich pal. n.* 258. *Neck. gallob.* 133. *Allion. pedem. n.* 363. *Villars dauph.* 2. 529. *Krock. ſileſ. n.* 388. *Fl. dan. t.* 617. *Blackw. t.* 452. *Sabb. hort.* 1. *t.* 99. *Berg. phyt.* 37. *Plenck, ic. t.* 157.
Chironia Centaurium. *Curtis lond.* 4. 22. *With.* 237. *Woodv. med. bot.* 435. *t.* 157.
Centaurium minus. *Cam. epit.* 428. *Bauh. pin.* 278. *Trag.* 140. *Matth.* 655. *Fuchſ.* 387. *Dod.* 336. *Tabern.* 1166. *Raii ſyn.* 286. *hiſt.* 1092. *Mor. hiſt.* 2. *ſ.* 5. *t.* 26. *f.* 5.—vulgare. *Park. theat.* 272. *f.* 1.—fl. purpureo & albo. *Bauh. hiſt.* 3. 353. 2.—parvum. *Ger.* 437. *emac.* 547. 1. *Lob.*
Erithræa. *Renealm. ſpec.* 77. *t.* 76.
β. G. ramoſiſſima. *Villars dauph.* 2. 530. *Ger. prov.* 311. *Vaill. par.* 32. *t.* 6. *f.* 1. *With.* 239. β.
Corollas five-cleft, ſtem dichotomous, piſtil ſimple.

[33. Gentiana pulchella.
Lin. ſyſt. 269. *Swartz in act. holm.* 1783. *p.* 85. *t.* 3. *f.* 8, 9.
Corolla five-cleft, tube elongated, ſtyle ſimple, ſtalk quite ſo.

34. Gentiana verticillata.
Lin. ſyſt. 269. 26. *ſuppl.* 174. *Vahl ſymb.* 3. 46.
Corollas quinquefid in whorls eight together.

35. Gentiana maritima. *Procumbent Sea Gentian.*
Lin. ſyſt. 269. *Reich.* 643. *mant.* 55. *Ger. prov.* 311. *n.* 8. *Gouan fl. monſp.* 35. *n.* 7. *Pallas roſſ.* 111.
Centaurium luteum puſillum. *Bauh. pin.* 278. *Mor. ſ.* 5. *t.* 26. *f.* 3.
C. lut. novum. *Column.*
C. lut. minus latif. & anguſtifolium non perfol. *Bocc. muſ.* 2. *t.* 76. *Barrel. ic.* 468, 469.
Corollas five-cleft, ſtyles twin, ſtem dichotomous few-flowered.]

36. Gentiana ſpicata.
Lin. ſpec. 333. *Reich.* 643. *Sauv. monſp.* 132.
Centaurium minus ſpicatum album. *Bauh. pin.* 278. *prodr.* 130. *ic. Raii hiſt.* 1092. *n.* 2. *Mor. hiſt. ſ.* 5. *t.* 26. *f.* 6.
C. minus album. *Tabern.* 780.
β. C. min. ſpic., fl. rubello. *Tournef. inſt.* 122.
Flowers alternate ſeſſile, corollas five-cleft.

[37. Gentiana verticillaris.
Lin. ſpec. 333. *ſyſt.* 269. *n.* 29. *edit.* 13. *n.* 19. *Reich.* 643. *Retz. obſ.* 2. *n.* 39.
Centaurium minus ad alas floridum. *Plum. ic.* 81. *f.* 2. *Burm. afr.* 206. *t.* 74. *f.* 3.
Flowers in whorls, corollas five-cleft, ſtalk extremely ſimple.

38. Gentiana quinqueflora.
Lin. ſpec. 333. *Reich.* 644. *Fl. dan. t.* 344?
Corollas five-cleft, ſtalk acute-angled, leaves ovate ſtem-claſping.

39. Gentiana ſcilloides.
Lin. ſyſt. 269. *ſuppl.* 175.
Corollas five-cleft, bractes in pairs, ſtalk one-flowered proſtrate branched, leaves obovate obtuſe three-nerved.

40. Gentiana aphylla.
Lin. ſpec. 334. *Reich.* 644. *Jacqu. amer.* 87. *t.* 60. *f.* 3. *pict.* 46. *t.* 89.
Corolla five-cleft ſalver-ſhaped, ſtalk leafleſs.

41. Gentiana Amarella. *Autumnal Gentian.*
Lin. ſpec. 334. *Reich.* 644. *mat. med.* 76. *hort. cliff.* 81. *fl. ſuec. n.* 229. *Hudſ. angl.* 103. *With.* 262. *Relh. cant. n.* 193. *Engl. bot. t.* 236. *Hall. helv. n.* 651. *Pollich pal. n.* 259. *Leers herborn. n.* 178. *Krock. ſileſ. n.* 389. *Villars dauph.* 2. 530. *Gunn. norv.* 95. *Fl. dan. t.* 328. *Gmel. ſib.* 4. 106. *n.* 74. *Pallas roſſ.* 104. *Barrel. ic.* 510. 1. *Plenck, ic. t.* 158.
Gentianella pratenſis fl. lanuginoſo. *Bauh. pin.* 188. *Bauh. hiſt.* 3. 526. 2, 3. *Mor. t.* 5. *f.* 3.—fugax

minor. *Ger.* 354. 1. *emac.* 437. 3.—autumnalis Centaureæ minoris fol. *Park. theat.* 406. 3.—fugax 2. & 4. *Cluſii*; Raio affirmante.
Opſantha. *Renealm. ſpec.* 71.
β. G. fugax autumnalis elatior, Centaurii minoris fol. *Raii ſyn.* 275.
Corolla ſalver-ſhaped five-cleft (ſometimes four or even three) *bearded at the throat*; *ſegments of the calyx five, equal.*

42. Gentiana auriculata.
Pallas fl. roſſ. 102. *t.* 92. *f.* 1.
Corollas four- and five-cleft bell-ſhaped villoſe within, the alternate ſegments cordate.

*** *Corollas not five-cleft.*

43. Gentiana campeſtris. *Field Gentian.*
Lin. ſpec. 334. *Reich.* 644. *fl. lapp.* 94. *ſuec. n.* 230. *Hudſ. angl.* 103. *With.* 262. *Lightf.* 152. *Engl. bot. t.* 237. *Hall. helv. n.* 650. *Scop. carn. n.* 289. *Fl. dan. t.* 367. *Gunn. norv. n.* 96. *Allion. pedem. n.* 354. *Krock. ſileſ. n.* 391. *Pallas roſſ.* 103. *Bocc. muſ. t.* 101. *Villars dauph.* 2. 530.
G. purpurea minima. *Column. ecphr.* 1. 223. *t.* 221. *Barrel. ic. t.* 97. *f.* 2. *Mor. t.* 5. *f.* 9.
Gentianella alpina verna minor. *Bauh. pin.* 188.
β. *Fl. dan. t.* 318.
G. tenella. *Friis act. haffn.* x. 436. *t.* 2. *f.* 6. *Retz. obſ.* 1. *n.* 24. & 5. *n.* 41.
Corollas four-cleft bearded at the throat; *calyx four-leaved, the two outer ſegments very large.*]

44. Gentiana ciliata. *Fringed-flowered Gentian.*
Lin. ſpec. 334. *ſyſt.* 269. *Reich.* 645. *hort. cliff.* 81. *Hall. helv. n.* 653. *Scop. carn. n.* 287. *Pollich. pal. n.* 260. *Jacqu. auſtr.* 2. *t.* 113. *Gunn. norv. n.* 733. *Fl. dan. t.* 317. *Allion. pedem. n.* 355. *Krock. ſileſ. n.* 392. *Pallas roſſ.* 101. *t.* 92. *f.* 2. *Gmel. ſib.* 4. 105. *n.* 73. *Villars dauph.* 2. 531.
G. anguſtifolia autumnalis minor, floribus ad latera piloſis. *Bauh. pin.* 188.
Gentianella cærulea oris piloſis. *Bauh. pin.* 188. *Raii hiſt.* 719. *Mor. t.* 5. *f.* 10.
G. autumnalis fimbriato flore. *Park. theat.* 406. *n.* 2. 407. *f.* 2.
G. cær. fimbr. anguſtif. autumn. *Column. ecphr.* 1. 222. *t.* 221. *f.* 1.
β. G. detonſa. *Friis act. haffn.* 10. *t.* 1. *f.* 3. *Retz. obſ.* 1. *n.* 25.
Corollas four-cleft ciliate at the edge.

45. Gentiana cruciata. *Croſſwort Gentian.*
Lin. ſpec. 334. *Reich.* 645. *mant.* 349. *hort. cliff.* 81. *Hall. helv. n.* 643. *Scop. carn. n.* 288. *Pollich pal. n.* 261. *Leers herborn. n.* 179. *Jacqu. auſtr.* 4. *t.* 372. *Krock. ſileſ. n.* 393. *Pallas roſſ.* 108. *Villars dauph.* 2. 531.
G. cruciata. *Bauh. pin.* 188. *Park. theat.* 402. *f.* 2. *Raii hiſt.* 717. *Fuchſ. hiſt.* 420. *Mor. t.* 5. *f.* 16.
G. minor. *Cam. epit.* 417.—cruciata. *Ger.* 351. *f.* 3. *emac.* 433. *f.* 4.—ſ. vulgi Cruciata. *Bauh. hiſt.* 3. 522.
Herba fullonum. *Brunſ.* 2. 52.
Tretorrhiza. *Renealm. ſpec.* 74. *t.* 73.
Corollas four-cleft, beardleſs, flowers in whorls ſeſſile.

[46. Gentiana ſeſſilis.
Lin. ſpec. 335. *Reich.* 646.
Gentianoides fl. luteo. *Feuill. peruv.* 3. 20. *t.* 14.
Corollas four-cleft, flowers ſtemleſs, leaves ovate.

47. Gentiana filiformis. *Leaſt Gentian*, or *Marſh Centory.*
Lin. ſpec. 335. *Reich.* 646. *Hudſ. angl.* 103. *With.* 263. *Fl. dan. t.* 324. *Willich illuſtr.* 45.
Exacum filiforme. *Engl. bot. t.* 235.
Centaurium puſillum luteum. *Bauh. pin.* 278.
C. paluſtre lut. minimum. *Raii hiſt.* 1092. *ſyn.* 286. *Vaill. par. t.* 6. *f.* 3. *Mart. Tourn. par.* 1. 163. *n.* 4. *Mor. hiſt.* 2. 566. *n.* 4.
Corollas four-cleft beardleſs, ſtalk dichotomous filiform.

48. Gentiana heteroclita.
Lin. ſyſt. 270. *Reich.* 646. *mant.* 560.
Flowers four-cleft irregular, ſtalk brachiate.

49. Gentiana ſcandens.
Lour. cochinch. 171.
Stem ſhrubby climbing, corollas bell-ſhaped five-cleft, in elongated pendulous panicles.

50. Gentiana fimbriata.
Vahl ſymb. 3. 46.
Corollas bell-ſhaped ten-cleft, alternate ſegments fringed and ſmaller, leaves lanceolate.

51. Gentiana diffuſa.
Vahl ſymb. 3. 47.
Stem branched dichotomous divaricate, leaves ovate-oblong, peduncles capillary one or two-flowered.

52. Gentiana albens.
Thunb. prodr. cap. 48.
Leaves ovate ſtem-claſping, calyxes ovate, ſtem trichotomous.

53. Gentiana dubia.
Thunb. prodr. cap. 48.
Corollas four-cleft, calyx lanceolate, panicle terminating trichotomous ſuperdecompound.

DESCRIPTIONS, *&c.*

The numerous ſpecies of this genus have very few characters in common; ſome of them indeed differ ſo much from others, that they have been ranged under ſeparate genera, and ſome are yet of opinion that the genus ſhould be divided. They are all herbaceous plants; the Gentians properly ſo called are perennial, moſt of the Gentianellas and the Centorys are annual. The leaves are ſimple, ovate, lanceolate or linear, or between theſe figures, oppoſite on the ſtem, and entire; commonly marked with five or three ſtrong nerves. Flowers either axillary or terminating, ſolitary or elſe in bunches or whorls. Anthers coaleſcing in ſeveral of the ſpecies; as in Syngeneſia Monogamia. Few of the ſpecies are commonly known or cultivated. Many of the Gentianellas though ſmall are eminently beautiful, and a great ornament to the alpine regions.

1. See Exacum viſcoſum.]

2. Root thick, of a yellowiſh brown colour, and very bitter taſte. Lower leaves petioled, oblong-ovate, a little pointed, ſtiff, yellowiſh green, having five large veins on the back, and plaited. Stem three or four feet high and more, with a pair of leaves at each joint, ſeſſile or almoſt embracing, of the ſame form with the lower ones, but diminiſhing gradually to the top. Flowers in whorls at the upper joints.

[Peduncles upright, one-flowered. When the flower opens, the calyx burſts on the ſide. Segments of the corolla from five to eight, with frequent dots ſcattered over them, divided almoſt to the bottom. At the baſe of the germ as many green tubercles as there are ſegments in the corolla. Filaments reaching beyond the flower. Anthers very large. Fruit ſhort, ſwelling in the middle. Seeds often barren [b].

Native of Lapland, Sweden, Germany, Switzerland, France, Italy, and North America.

Haller obſerves that it occupies large tracts of country, untouched by any cattle. I obſerved this very remarkably about Chaud de Fond, and in other parts of Switzerland. It flowers in june and july.

Our old authors call it Felwort and Bitterwort. Before Hops had eſtabliſhed their reputation, this with many other bitter herbs was occaſionally uſed in brewing. Mr. Houghton (at the end of the laſt century) affirms, that he has divers times ſold it for that purpoſe [c].

The root of this ſpecies of Gentian, imported from Switzerland, Germany, &c. is the principal bitter now employed in medicine, though the roots of ſeveral other ſorts are ſaid to be equally efficacious, and are even preferred by ſome. As the intenſe bitters are generally admitted to be not only tonic and ſtomachic, but alſo anthelmintic, antiſeptic, emmenagogue, antiarthritic, and febrifuge, this root has a better claim to the poſſeſſion of theſe powers than moſt of the kind.

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[b] Haller.

[c] Collections, 2. 335.

Many dyſpeptic complaints, though ariſing from the debility of the ſtomach, are more effectually relieved by theſe bitters than by Peruvian bark: and Gentian joined with equal parts of tormentil or galls, has conſtantly ſucceeded, as we are told by Dr. Cullen, in curing intermittents, if given in ſufficient quantity.

As a ſimple bitter, Gentian is rendered more grateful to the ſtomach by the addition of an aromatic, and for this purpoſe orange-peel is commonly uſed[d].

Gerarde informs us, that "maſter *Iſaac de Laune*, a learned phiſition, ſent him plants of this for the encreaſe of his garden from Burgundie: and that it is named in Engliſh Felwoort Gentian, Bitterwoort, Baldmoyne, and Baldmoney."

3. Root even larger than in the foregoing ſort; as thick as a man's arm and two feet long, white within and ſtriated on the outſide, extremely bitter, and uſed medicinally in ſome countries, inſtead of *G. lutea*, with equal ſucceſs. Stem ſmaller, a foot or eighteen inches in height. Leaves ſomewhat broader. Calyx ſpathaceous, obtuſe, by which it is diſtinguiſhed from the ſixth, in which the calyx is ſix-cleft. Corolla ſmaller, divided into five or ſix ſegments, ſometimes ſeven, duſky or pale purple, with the dots running into lines[e]. Haller is of opinion that it can ſcarcely be ſeparated from the ſixth ſpecies.

Native of Denmark, Switzerland, and Sileſia.—Introduced in 1768, by Profeſſor de Sauſſure[f].

4. Root creeping with a tranſverſe ſtock, and abundance of whitiſh fibres. Root-leaves often a ſpan in length, ſtanding up above the ſtem, broad-lanceolate, five-nerved, ſheathing at the baſe. Flowering-ſtem coming out on the ſide of theſe, procumbent at bottom but gradually riſing, having only one or two pairs of leaves, beſides the floral ones on the top. Flowers ſeſſile in aggregate whorls at two ſeparate pairs of leaves. Calyx ſmall, membranaceous, unequally four-toothed. Corolla ſmall, of a livid pale colour, the border pale blue, four or five-cleft, the ſegments very ſhort and ſharpiſh. In its habit this is between the *purpurea* and *cruciata*, as *decumbens* and *algida* are between this and *Pneumonanthe*. The herbaceous part is hardly bitter.

Native of all Siberia, eſpecially the eaſtern part, where the *cruciata* is not found; flowering in july and auguſt[g].

5. Root yellow on the outſide, very bitter, fuſiform, branched. Leaves and even bractes approaching in form to thoſe of *G. pannonica* (n. 7.), ſoft, thickiſh, ovate-lanceolate, running into a longer point than in *G. punctata*; prominent nerves on the lower ſurface five or ſeven. Stem ſmooth and even, from dark blue becoming green, erect, two ſpans in height, round but alternately ſomewhat ancipital between the joints. Flowers almoſt ſeſſile in two or three whorls, in each axil from one to three. Calyx in ſhape of a ſhort bell or rather baſin, ſeven-cornered, membranaceous, whitiſh, except at the corners, where it is ſky-blue; border gaping, ſeven-cleft; toothlets ſhort, broadiſh, blunt, entire, flat, green, leafy. Corolla large, ſulphur-coloured, ſhining as if poliſhed, ſtreaked longitudinally, but not ſpotted, bell-ſhaped, bellying out and almoſt ſpheroidical at the baſe, and thence cylindric; border ſeven-cleft; clefts equal, erect, contiguous, obtuſely triangular, quite entire.

Native of Carinthia, on mount Garten in Reichenau; flowering in july. Diſcovered originally by Burſer[h].

6. This agrees in many reſpects with G. pannonica, but the leaves are more ovate, leſs elongated, and more ſtrict; the calyxes ſhallower and more in form of a baſin, the calycine teeth much narrower, ſharper, and leſs leafy; the corolla of a papery ſubſtance, extremely thin, of a dull and very pale greeniſh ſtraw-colour, with very minute dots thickly and irregularly ſcattered over it. Segments of the border commonly ſeven, ſometimes eight, but very ſeldom ſix, always ſhorter, narrower, contiguous, rounded, blunt, without any auricles at the baſe; and finally the bellying of the corolla is blunter and almoſt the ſame over the whole bell[i].

Native of Auſtria, Sileſia, Italy, &c. Introduced in 1775, by Drs. Pitcairn and Fothergill[k].

7. Root yellowiſh on the outſide, whitiſh within, intenſely bitter. The whole plant is ſmooth and ſhining. Stem from half a foot to two feet in height, round or ſlightly angular, erect, a finger thick at the baſe, which is covered with ſheathing ſcales, having a bifid or trifid mouth. Leaves oppoſite, broad ovate or lanceolate, acute, quite entire, bright green, ſomewhat plaited, having five prominent pale nerves on the back, attenuated into connate petioles; the upper ones more ſeſſile. Flowers from the axils on very ſhort peduncles, three, four, or five, ſeldom more on each ſide, forming whorls, ſupported by bractes reſembling the leaves. There are commonly two or three whorls, with flowers much more numerous in the upper one; but in ſmaller plants there is only one. Calyx bell-ſhaped, looſe, thin, obſcurely ſix-cornered, divided to the middle into the ſame number of ſegments with the corolla, theſe are lanceolate, acute, ſpreading, and two of them oppoſite to each other larger and diſtant. Corolla large and elegant, divided into ſix or ſeven, roundiſh, very blunt, erect ſegments; the outſide at the baſe and the whole inſide of the tube are pale yellow, the reſt is dark purple; the whole ſprinkled with very dark purple dots[l].

Although this reſemble *G. purpurea*, yet it has a much ſmaller flower, of a different colour from that; the ſtem-leaves alſo are ovate and ſharpiſh, but never produced into a point[m].

Native of Switzerland, the Tyrol, Sileſia, and the Carpathian mountains.

8. Stem a foot or eighteen inches in height, having the air of *G. aſclepiadea*, round, ſmooth, quite ſimple. Leaves ſpreading, five-nerved. Flowers from the upper axils uſually two together, and three at the top of the ſtalk, crowded together into a corymb, on ſhort peduncles, the ſame ſize as in the next ſpecies, the upper one flowering firſt. Calyx ſmall, angular, truncate, with linear ſegments from the angles. Corolla bellying, naked within, contracted in the tube, blue, the border divided into five, ſix, or ſeven reflex ſegments, dotted at the baſe, having upright ſtraps cut into ſeveral capillary jags between each ſegment. The number of ſtamens correſponds with the number of ſegments in the corolla. The whole plant is ſmooth. Both root and herb are very bitter.

Native of the mountains of Perſia near the Caſpian ſea, and of the Cherſoneſus Taurica[n].]

9. Stem upright, near a foot high. Leaves ſmooth, about two inches long, and three quarters of an inch broad at the baſe, embracing there, and ending in an acute point; they are of a fine green, have five longitudinal veins, joining at both ends, but diverging in the middle, and diminiſh in ſize as they are nearer the top. Flowers in pairs oppoſite, on ſhort peduncles; they are pretty large, bell-ſhaped, and of a fine blue colour.

[Leaves bluntly ſerrate, reſembling thoſe of *Aſclepias*, whence it has the trivial name. Calyx obſcurely pentangular, ſcarcely the third part of the length of the corolla. Stamens much ſhorter than the corolla, with long, yellow anthers. Like ſeveral other ſpecies, it varies with a white corolla[o].

It differs from the foregoing principally in ſize, in having flowers in the axils to the middle of the ſtalk, a ſimple corolla, thrice five-cleft not dotted. The lower leaves five-nerved, the upper three-nerved. Calyx ſomewhat ſpathaceous, putting out ſegments often as long as the corolla. This is the moſt taſteleſs and leaſt bitter of the genus[p].—Ray ſays that the root is very bitter. Haller affirms that the tube of the corolla is ſpotted, and that ſometimes the ſegments are ſo. According to Linneus the calyx is as long as the corolla.

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[d] Woodville.
[e] Haller and Krocker.
[f] Hort. kew.
[g] Pallas.
[h] Jacquin.

[i] Ibid.
[k] Hort. kew.
[l] Jacquin.
[m] Linn. ſyſt.
[n] Pallas.
[o] Haller and Krocker.

Native of Switzerland, Hungary, Stiria, Auſtria, Sileſia, Piedmont, Barbary, mount Caucaſus, &c. It flowers with us in july and auguſt. Cultivated in 1629, as appears from Parkinſon[q].

10. Root fibrous. Root-leaves none. Stem upright, very ſtraight, a ſpan high, round, furniſhed with very ſmall leaves at bottom, becoming gradually longer higher up, decuſſately oppoſite; they are ſtiff and ſomewhat rigid, blunt at the end, and turned back at the edge; the largeſt are near three inches in length. Flowers at the end of the ſtalk in threes, and ſometimes another pair of them from the next axil of the leaves. Calyx purpliſh, unequally five-cleft, ſubſpathaceous, cut more deeply on one ſide, the ſegments linear and ſharp, alternately larger and ſmaller. Tube of the corolla angular, whitiſh; the border dark blue, with ſubcordate blunt ſegments, diſtant at the baſe from each other with a right-lined interval. Filaments unequal; anthers upright. Germ fuſiform, with a bifid ſtigma. It is really different from *G. Pneumonanthe*, with which it may eaſily be confounded, from having a flower of the ſame colour, by its being ſo ſtiffly upright and bitter. It flowers in july and auguſt.

Native of Eaſtern Siberia[r].]

11. Stem upright, about a foot high. Leaves ſmooth, an inch and half long, and leſs than a quarter of an inch broad; they have no petioles. Flowers on the top of the ſtalk, three or four in number, on peduncles alternately above each other; they are large, and being of a deep blue colour, make a fine appearance.

[Stem ſeldom or ever branched, round or very obſcurely angular, ſmooth as is the whole plant. Leaves vary from linear to almoſt ſpatulate[t].

Haller ſays that ſome are elliptic and obtuſe, others linear and acute—Scopoli, that they are not truly linear but linear-lanceolate—Pollich, that they are linear and bluntiſh—Krocker, that they are either lanceolate-linear or completely linear. The flowers according to Haller are ſolitary and almoſt ſeſſile in the axils or boſoms of the leaves. Pollich ſays, that one terminates the ſtem, and the reſt are axillary, ſolitary and ſubſeſſile—Scopoli, that the lower corollas are peduncled and from the axils. Krocker deſcribes them as terminating and axillary, peduncled, ſolitary or in pairs, ſix, eight, or ten in the whole, with two or four ſtipules under the peduncles. Theſe variations occur in different ſoils and ſituations: with us certainly the plant ſeldom bears more than one or two flowers; but after a wet ſpring it is found much more luxuriant, bearing, five, ſix, or ſeven flowers[u].

Calyx cylindric, or very obſcurely angular, with linear leaflets often reflex at top, ſcarcely a third of the length of the corolla: which is plaited in angles, of different ſhades of blue, the tube paler and dotted within. Anthers connected full as much as in *Lobelia*, and much more ſo than in *Viola*[x]. Five glands at the baſe of the germ, as in *G. lutea*[y]. Stigma revolute, remarkably long[z]. It has the bitterneſs and qualities of ſeveral among its congeners[a].

Pallas diſtinguiſhes this from his *triflora*, by its having a more ſlender ſtalk, and leaves more lanceolate and acute. One flower at the end, the reſt axillary, all peduncled, when there are ſeveral; for ſometimes there is no more than one. Calyx deeply five-cleft, the ſegments linear, two alternate ones larger than the reſt. Corolla larger, more dilated at the throat; plaited, the ſegments ſharper and ſubſerrate, with a tooth of the plait between each; the ſtructure of the flower therefore is very different from the foregoing.

Native of Sweden, Denmark, England, Switzerland, Carniola, the Palatinate, Sileſia, Piedmont, in the temperate parts of Ruſſia and all Siberia, in moiſt meadows and marſhes: Ray found it near Lindau in Germany. It flowers in auguſt and ſeptember; or, as Linneus obſerves, with the Colchicum. With us it is not very common in the ſouth, but in the north much more ſo. In Lincolnſhire and Yorkſhire abundant, in the boggy parts of heaths, as in Tatterſhal-park[b]. Found by Mr. Newton between Clapham and Engleton. Near Doncaſter by Mr. Tofield. Near Milthorp in Weſtmoreland, and in Lancaſhire common. Near Tunbridge in Kent, by Dr. Wilmer[c]. On Longfield downs near Graveſend, near Greenhithe, Cobham, &c. in Kent, and near Bath, by Gerarde. At Lellingſtone, and near Dartford in Kent, and in the weſt country in divers places, by Parkinſon. Johnſon (Ger. emac.) is of opinion that Gerarde did not know the plant, and ſays that he never found it but once, and that was on a wet mooriſh ground in Lincolnſhire, called Netleton-moor, two or three miles on this ſide Caſter. Johnſon was ſo well acquainted with Kent, that he cannot well be miſtaken. On Stratton Strawleſs heath near Norwich, by Stillingfleet.

12. This riſes uſually ſixteen inches high, with upright ſtraight ſtems, having long ſharp-pointed oppoſite leaves, ſpreading horizontally. From the axils of theſe come out four or five blue flowers[d].

Native of North America. Introduced in 1776, by Mr. William Young. It flowers in auguſt and ſeptember[e].

13. Leaves oblong, acuminate, ſlightly villoſe. Flowers bell-ſhaped, ventricoſe, erect, pale yellow or white on the outſide[f], and variegated with lines on the inſide.

Native of Virginia[g].

14. Root large, woody, branched. A ſet of ovate-lanceolate leaves ſpreads on the ſurface. Stem from one to three inches in height, with one or two pairs of leaves on it, and terminated by one very large, upright, handſome flower (in a garden, when the plants are ſtrong, there are ſometimes more). Calyx angular, cloven half way down; the ſegments lanceolate, acuminate, ſcarcely a third part of the length of the corolla; which is of a deep azure blue, dotted on the inſide. Five melliferous tubercles at the baſe of the germ, as in G. lutea[h].

This plant, in its natural alpine ſituation, has little or no ſtem, whence its trivial name; but it acquires one in a ſtate of cultivation.

Native of Switzerland, Auſtria, Carniola, Sileſia. Ray remarked it on the higheſt parts of mount Jura. It flowers in our gardens in april and may; and ſometimes a ſecond time in the autumn. In the alps the time of flowering is june, july, and auguſt. It was cultivated in 1629, according to Parkinſon. In 1636, it was to be found in moſt of our choice gardens, as with Mr. Parkinſon, Mr. Tradeſcant, Mr. Tuggye, &c.[i]

15. Root ſmall, annual, very ſlender, bitteriſh. Stems in tufts, from an inch to a ſpan in height, ſeldom branched, decumbent at bottom then upright, jointed, leafy, terminated by one flower. Root-leaves four, ſeldom more, ſpreading on the ground; both they and the ſtem-leaves ſmooth, quite entire, bright green, ſeſſile, flat. Calyx cloven to the baſe, green, ſmooth, the ſegments equal, lanceolate. Corolla deep blue, at the baſe and throat whitiſh. It flowers at the end of auguſt[k].

Native of Dauphiné, Savoy, Piedmont, Sileſia. Diſtinguiſhed from *G. nivalis*, to which it is very nearly allied, by its tender ovate leaves without veins, its ſlender ſtalks bearing uſually one flower only, the ſegments of the flower nearly erect, and the calyx by no means long, and tubular[l].]

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[p] Pallas.
[q] Hort. kew.
[r] Pallas.
[t] Engl. bot.
[u] Sutton in Engl. bot.
[x] Engl. bot.
[y] Haller.
[z] Krocker.
[a] Haller.

[b] Ray.
[c] Hudſon.
[d] Cateſby.
[e] Hort. kew.
[f] Gronovius.
[g] Linn.
[h] Haller and Krocker.
[i] Ger. emac.
[k] Krocker.
[l] Allioni.

16. This riſes with an upright branching ſtalk, near two feet high. Leaves oblong, ſmooth, acute-pointed. The upper part of the ſtalk divides into ſeveral forks, between which are ſix or ſeven long naked peduncles, each ſuſtaining one large blue flower.

Native of the Weſt Indies, diſcovered by Plumier; and found afterwards by Houſtoun plentifully at La Vera Cruz, in low moiſt places, where the water ſtagnates, remote from the coaſt. Cultivated by Mr. Miller before 1733.

17. Root perennial. Root-leaves ten or more, in a bunch, linear-lanceolate, three-nerved. Stems one or two, coming out on the ſide of the bunch of leaves, decumbent at bottom then riſing, a ſpan or a foot in height, naked at bottom, a pair of leaves in the middle, bearing leaves and flowers at the end. Stem leaves linear. Flowers ſeſſile, commonly three terminating among the top leaves, and two pairs oppoſite accompanied alſo with leaves; ſeldom in threes. Calyx angular, ſmaller than in *G. Pneumonanthe*, with the ſegments narrower, awl-ſhaped, but alternately larger, as in that. Colour, figure, and almoſt the ſize of the corolla, as in *G. Pneumonanthe*. Filaments only half the length of the corolla. Germ fuſiform. Stigma ſharp.—Sometimes the plant is larger, and then the root-leaves are near an inch in breadth, the flowers more in number; and ſometimes there is a little axillary branch with one flower on it, at the loweſt pair of ſeſſile flowers.

In farther Sibiria; flowering from july till ſtopped by the froſt. It is gently bitter and aromatic: hence it is uſed medicinally in Tibet.—It varies with a white and purpliſh white corolla[m].

18. Root perennial. Stem very ſtraight, round, from a finger's length to a ſpan in height, with two or three pairs of broad-lanceolate three-nerved leaves on it, ſlightly ſheathing it at the baſe. Flowers three or four together ſeſſile among the upper leaves, with ſometimes an acceſſory one or two from the next axil. Calyx purpliſh, cylindric, cut on one ſide when the flower is in maturity, cloven half way down, the ſegments linear, two alternately larger than the reſt. Corollas large, plaited, of a milky colour and diaphanous, with ſtreaks in five rows converging by pairs like flames, dots in rows on the tube, and very ſmall dots more frequent towards the border, of a livid blue colour, more or leſs deep: the ſegments of the border ſhallow, triangular and diſtant. Filaments thickeſt in the middle, blue: anthers upright, lemon-coloured. Germ fuſiform, with a ſlightly bifid ſtigma. Capſule included in the withered corolla. Seeds gray, ſcarioſe and wrinkled. The leaves next the root are collected into a bunch; they are pale green, juicy, tender, and linear-lanceolate. The whole plant becomes pale in drying. It reſembles the foregoing ſpecies, and is very nearly allied to it, but differs in ſome eſſential characters; Gmelin therefore makes it a variety of *G. Pneumonanthe*, and Linneus of *G. punctata*, without reaſon.

On the ſnowy alpine tops of eaſtern Siberia, and other parts of the Ruſſian empire; flowering in auguſt.—Intenſely bitter, and proper to be uſed medicinally[n].

19. Stem herbaceous, ſingle, very ſeldom ſubdichotomous, ſlender, round, grooved, erect, ſmooth and even, a hand or a ſpan in height. Leaves nerveleſs, ſomewhat fleſhy, very ſmooth, quite entire, oppoſite, at the peduncles frequently in fours, ſpreading, yellowiſh green, two inches long: root-leaves approximating, on ſubimbricate channelled petioles. Peduncles two or three together, ſeldom four, from the top of the ſtem, one-flowered, angular, from upright ſpreading, two inches long. Flowers white, upright.

Native of New Zealand. Found in Duſky-bay, march 7th, 1773.

20. Native of New Zealand[o]. Found alſo in Duſky-bay.

21. Root filiform, ſlender, woody. Root-leaves in a ring, thickiſh, with nerves ſcarcely viſible. Stem ſimple, round, upright, from two to four inches in height, having three or four pairs of ſeſſile leaves on it, which are ſomewhat fleſhy, and ſmaller than the root-leaves. Flowers uſually three, ſeldom one only at the end, together with an acceſſory pair from the uppermoſt axils. Calyx blueiſh, ſmall, bell-ſhaped, the ſegments awl-ſhaped, and equal. Corolla three times as long as the calyx, ſomewhat bellying, pale blue with the tube whitiſh; the ſegments of the border blunt. Anthers white. Capſule fuſiform, wrapped in the corolla.

There is a variety of this, in high, expoſed, rocky ſituations, with two or three flowers ſitting cloſe to the root-leaves, without any ſtalk.

The former is native of the higheſt mountains of Kamtſchatka; flowering from june to auguſt, and ripening its ſeeds in ſeptember[p].

22. This is a little plant hardly two inches high. A perennial yellow branched root puts up ſeveral ſimple ſtalks, each ſupporting one flower. Root-leaves ſpread in a ring, ſmooth, ovate-lanceolate; on the ſtalk two or three pairs. Calyx five-cornered, half the length of the corolla. Segments of the corolla ſlightly ſerrate, either blue or beautiful deep azure, and between each a ſmall horned whitiſh blue proceſs. Capſule fuſiform, long, burſting when touched[q].

It differs from *G. pumila* in the leaves being channelled, more rigid, and half-ſtem-claſping; the plaits of the calyx, terminating it in ſo many teeth, elevated; the little ears or proceſſes emarginate; the ſtigmas finely ſerrate and reſembling a little drinking glaſs[r].

In Linn. ſyſt. it is obſerved that it is nearer to *Primula*, and ſcarcely bitter.

Native of Switzerland, Savoy, Piedmont, Auſtria, Carniola, Sileſia: flowering early in the ſpring; both in moiſt meadows and in alpine ſituations. Ray found it abundantly on the mountains near Geneva: and I gathered it in flower on mont Saleve the 13th of april, 1779. On the high Alps it flowers later.

It varies with a white flower.—A beautiful blue colour may be extracted from the flowers as they are more commonly found[s].

23. Perennial. This is very like the foregoing, but the corolla is regularly ten-cleft, the ſegments blunt, the alternate or outer ones green on the outſide, within all are blue. Leaves linear or linear-lanceolate. Stalk perennial, procumbent, with upright branches, bearing one flower the length of the branch.—Native of the Pyrenees[t].

24. Root ſlender, two or three inches long. Both root-leaves and ſtem-leaves cloſely imbricate, ſubulate-linear, ſharp. Stem uſually ſingle, but ſometimes two or three, about an inch in length, ſomewhat naked under the flower, with one pair of leaves near it. Calyx angular, the ſegments equal, ſharp, and diſtant at the baſe. Corolla three times longer than the calyx, above two inches in length, of a very deep blue colour, with pale flame-like ſtreaks riſing from the tube. Anthers upright, ſagittate, yellow. Germ fuſiform-club-ſhaped, with the ſtyle produced, and a fungous ſimple ſtigma. Capſule lanceolate, wrapped in the decayed flower. Seeds grayiſh-brown. It varies ſometimes with a four-cleft or ſix-cleft corolla.

It is very nearly allied to *G. pyrenaica*, and like that is almoſt void of bitterneſs: it may therefore only be a variety ariſing from ſituation. The principal difference conſiſts in the ſuperior ſize of the flower, the ſtrength of the whole plant, and the ſhortneſs of the ſtalk.—*G. pumila* of Linneus and Jacquin, ſeems to be the ſame plant with the *pyrenaica*.

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[m] Pallas.
[n] Ibid.
[o] Forſter.
[p] Pallas.
[q] Haller, Krocker.
[r] Scopoli.
[s] Haller.
[t] Linn. mant.

Native of the ſnowy cliffs of the Altaic alps[u].

25. Stems one-flowered. Corolla ſcarcely ſerrate[x]. Leaves ſharp, ſcarcely four lines long, and one broad. Stem about an inch in height, with two pairs of leaves, one near the calyx, which is cloven half way down, and is angular with five raiſed lines. Tube of the corolla yellowiſh, not plaited; ſegments quite entire, with horned proceſſes[y].

Haller is of opinion that this does not differ from *G. verna:* and Pallas cannot ſee any difference between the ſpecimens which he received of this from Jacquin, and the *pyrenaica.*

According to Villars, it differs little from *verna,* but it is ſmaller and has linear leaves; the ſtems have more leaves on them, namely three or four pairs, and are creeping, the diviſions of the corolla are obtuſe and are very finely toothed.

Native of the mountains of Dauphiné, Auſtria, and Carniola.

26. Leaves blunt, not ſharp, as in *G. verna*[z]. Root-leaves ſpreading in a ring, perfectly round. Stem often proſtrate, three inches or more in height, with eight or ten pairs of ovate leaves on many. Flower ſolitary, large: calyx half the length of the tube of the corolla, divided not more than a third of the way down into five ſharp ſegments, frequently violet-coloured. Tube of the corolla long: ſegments ovate, moderately acuminate, a little ſerrate, of the fineſt ſky blue: proceſſes ſhortly horned ariſe from a white line of the tube. It varies with a white flower, like moſt of the others[a].

The Siberian plant is taller, and larger in all the parts than the German. Root filiform, ſimple, or branching only into fibres. Root-leaves ſeſſile, ovate and ſharp. Stem naked, a finger's length, ſometimes a long ſpan high, with one pair of leaves only towards the flower, and two floral leaves. Calyx divided into five equal, ſharp ſegments. Border of the corolla ſpreading, equally five-cleft; ſegments ovate-oblong, deep blue, very finely ſerrate. Hence *G. verna,* from Switzerland, with both bluntiſh and ſharp leaves, does not differ from *G. bavarica.* Theſe therefore make one ſpecies: as *G. pumila, pyrenaica,* and perhaps *altaica* do another. But *G. iſlandica* of *Flor. dan. t.* 317. differs widely from *G. bavarica*[b].

Native of Switzerland and Germany. About the lake Baikal, and on the Carpathian mountains in the Ruſſian empire: flowering early in the ſpring.

It was introduced in 1775, by the doctors Pitcairn and Fothergill[c].

27. Root annual. Stem erect, a ſpan high. Branches at the root ſeveral, ſmall, very upright. Root-leaves ovate, ſmooth, ſmall; ſtem-leaves ſimilar, larger, ſeſſile, bluntiſh. Flowers terminating, few, in a head. Calyxes narrow, ſubpeduncled, divided into five awl-ſhaped ſegments. Tube of the corolla the length of the calyx; border yellow, the ſegments quite entire, without any teeth interpoſed[d].

Retzius thinks that *G. involucrata* of Friis (act. Haffn. x. t. 1. f. 2.) and the Flora Danica (t. 344.) may be referred to this ſpecies. It is entirely different from *G. quinqueflora,* n. 38.

Native of the mountains about Bourdeaux, and of Norwegian Lapland.

28. Root annual, ſmall. Stem ſometimes one-flowered, but frequently branched, having one flower coming out from each axil regularly one above another, often alternately, but ſometimes in pairs. Root-leaves ovate, bluntly lanceolate, few: ſtem-leaves a little longer, ovate, acuminate, as far as eight pairs. Calyx five-cornered, half the length of the corolla, cut one-third of the way; ſegments ending in a long and very ſharp point. Corolla ſomewhat ſtiffer than the other Gentianellas. Segments lanceolate, greeniſh on the outſide, deep blue within, having a tinge of green. Proceſſes between the ſegments ariſing from the white lines of the tube.

In the mountains of Lapland; in the Alps of Switzerland, where as Haller obſerves it is a genuine alpine plant; and between Savoy and Piedmont, as Mont Cenis, &c. and on the Pyrenees, adorning them, as Linneus ſpeaks, with the ſplendour of its deep vivid blue flowers. It has alſo been found by Mr. Dickſon on Ben Lawers in Scotland.

It varies like moſt of the others with a white corolla. The fading from blue to white is indeed very common in flowers.

29. Root annual, filiform, ſomewhat branched, white. Root-leaves ſpreading in a ring, very much crowded together, ovate-rounded. Stem-leaves imbricate, ovate-ſharpiſh, decuſſated. Stems from two to twenty, uſually ſimple, but ſometimes branched dichotomouſly, in the flowering plant very ſhort, but in the fruiting plant lengthened out, the leaves becoming more remote and produced into an oblong form. Flowers ſmall. Calyx largiſh, five-cornered; the ſegments awl-ſhaped, ſharp, equal. Corolla angular and plaited, pale azure on the outſide with green ribs, the ſegments acuminate with ſmaller teeth interpoſed. Capſule involved in the flower, the corolla becoming green; it is ſhaped like a long club, and compreſſed: when ripe, the valves are turned back a little, and the minute, yellowiſh ſeeds are thrown out. It varies with a white corolla.—It approaches very near to *G. nivalis;* and is larger in cold ſituations, than in more ſouthern ones. Being very bitter, it is uſed medicinally in Dauria. It flowers in the middle of may: and is found from the river Jeniſea to the eaſtern ocean in ſandy wet meadows, and eſpecially by lakes and rivers[e]. It is found alſo in China and Japan.

30. Root ſlender, fuſiform, fibrous, yellow, annual (perennial, *Allioni*). Root-leaves ſpreading on the ground in a four-cornered tuft, but ſoon decaying. Stem upright, a finger's length or a hand in height, ſometimes higher, ſlightly angular, ſmooth; branches oppoſite, each with the ſtem terminated by one flower. Leaves ſeven pairs or more, ovate, blunt, quite entire, connate-ſeſſile, upright, bright green, ſmooth. Calyx five-cornered. Corolla eight lines in diameter, greeniſh on the outſide, fine ſky-blue or azure within; ſegments lanceolate, ſpreading, with horned, ſmaller whitiſh ſegments interpoſed. The corolla is ſometimes ſix-cleft[f].

Ray remarks, that this ſpecies differs from all the Gentianellas which he has obſerved, in having the tube of the corolla no longer than the calyx, but the ſegments of the former ſpreading immediately over the top of the latter, as in the Pink.

Stigmas whitiſh, forming a cap flatted at top, with glands all round[g]. Capſule almoſt cylindric, long; filled with abundance of ovate, acuminate, wrinkled ſeeds[h].]

Mr. Miller obſerves, that after the top flower decays, there are frequently two ſmaller flowers come out from the ſide of the ſtalk, at the two upper joints; theſe flowering after each other, there is a ſucceſſion of flowers till autumn.

[Native of the mountains of Switzerland, Germany, Auſtria, Idria, and Italy; flowering in june. Ray relates that he found it abundantly in going from Munich to Augſbourg.

This alſo varies with a white flower.

31. The whole plant is only about a finger's length. Stem ſimple, ſlender, upright, angular. Leaves ſmall, roundiſh, broad, veined, connate, two or three pairs. Flowers terminating, in a looſe, broad, ventricoſe, membranaceous, ſtriated calyx; ſegments of the corolla oblong, narrow, equal, yellow.—Native of the Cape of Good Hope[i].

It ſeems to belong to a different genus.

32. The whole plant ſmooth and glaucous. *Root* fibrous[k], annual, woody, yellowiſh. *Stalk* from four inches to a foot in height[l], upright, hexangular[m],

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[u] Pallas.
[x] Linn. ſyſt.
[y] Scopoli.
[z] Linn.
[a] Haller,
[b] Pallas.
[c] Hort. kew.
[d] Linn. ſpec.

[e] Pallas.
[f] Pollich, Haller.
[g] Scopoli.
[h] Haller.
[i] Burman.
[k] Lyons Mſs.
[l] Stokes in With.
[m] Lyons Mſs.

or quadrangular, generally ſimple, but frequently putting out upright ſimple branches ſome way above the root, and ſometimes branching all the way to the top. *Leaves* next the root oblong, or wedge-ſhaped, narrowed at the baſe, blunt at the end—ſtem-leaves lanceolate, pointed, upright, the uppermoſt often bent inward:—floral leaves linear:—all ſeſſile, three-nerved, quite entire. *Flowers* in a corymb, upright, and ſubſeſſile: *calyx* upright, ſlightly adhering to the tube of the corolla, permanent; ſegments awl-ſhaped, connected by a membrane; at the baſe, two very ſhort awl-ſhaped bractes[n]: *corolla*, tube one-third longer than the calyx, ſlightly coloured, ſtreaked; border generally roſe-coloured or pink, plaited at the baſe, the fiſſures keeled on the outſide, and the ſegments on the inſide[o]; there are no ears or proceſſes between the ſegments[p]. *Filaments* from the top of the tube, ſhorter than the corolla: *anthers* oblong, upright, after they have ſhed their duſt twiſted ſpirally from right to left; which circumſtance has induced ſome botaniſts to remove this plant into the genus *Chironia*. *Germ* oblong, filling the tube of the corolla, having a longitudinal furrow on each ſide: *ſtyle* one, half the length of the germ, inclining to one ſide, cloven half way down, and diviſible without much force all the way: *ſtigmas* two, on ſhort pedicels, nearly orbicular, greeniſh-yellow. *Capſule* one-celled, the edges of the valves being turned inwards, but not ſo far as to meet. *Seeds* roundiſh yellow[q].

Our Gerarde, remarked (1597) that "the flowers, (which he deſcribes as growing at the top of the ſtalk in a ſpokie buſh or rundell, of a red colour tending to purple), in the day time, and after the ſun is up do open themſelves, and towards evening do ſhut up again."

Native of moſt parts of Europe from Sweden and Denmark ſouthwards to Italy; and in all the temperate parts of Ruſſia, in dry paſtures: flowering from june to auguſt.

It is extremely bitter, with a diſagreeable flavour, whence Haller obſerves that it was called *fel terræ*, or gall of the earth, by the ancients. He alſo determines it to be the *graveolentia Centaurea* of Virgil, to which Lucretius gives a more ſignificant epithet of *triſtia*, expreſſive of its extreme bitterneſs.

It is the baſis of the famous Portland powder, which prevents fits of the gout, when taken in a large quantity, and a long time together; but brings on hardneſs of the liver, palſy, and apoplexy. A tincture of the leaves, and the upper part of the root, is a good medicine to weak ſtomachs and cachectic habits. A decoction of the whole plant deſtroys lice, and cures the itch[r].

It is not uncommon with a white corolla: this alſo is ſometimes only four-cleft[s]. In boggy places it is found with a very ſhort ſtem, remarkably branched[t].

Although good reaſons be given by Mr. Curtis and Dr. Stokes, why this ſpecies ſhould be removed into the genus *Chironia*, yet averſe from change I have left it where Linneus placed it, and other botaniſts ſtill continue it.

33. Stem ſcarcely an inch high. Root-leaves commonly in fours, ovate; ſtem-leaves oppoſite, obovate; all naked, quite entire. Flower terminating, ſolitary. Calyx five-cornered; ſegments acute, membranaceous. Corolla ſcarlet, with the ſegments very acuminate.

Native of Sweden[u].

34. Stem ſcarcely a hand high, round, and ſomewhat woody. Branches oppoſite, extremely ſimple, four-cornered, compreſſed, ſmooth and even. Leaves ſubſeſſile, lanceolate, ſmooth and even, longer than the internodes of the branches. Flowers ſeſſile. Calyx ſhort; ſegments acuminate, keeled, ſcarioſe at the edge. Corolla reſembling that of *G. Centaurium*, but fulvous, with ſharp ſegments. Stamens in the throat. Style ſimple, filiform, ſhorter than the tube of the corolla. Capſule ſubglobular.

Native of the Eaſt Indies[x].

Linneus ſuppoſes the South American plant to be the ſame with this: it has however a more tender branched ſtalk than the American; the leaves are ſhorter and narrower; the corollas narrower, with a longer tube, and ſharp but not mucronate ſegments; the calyxes ovate-acute, with ſegments ſhorter than the capſule. In the American plant the ſtem is more ſtiff and robuſt, with the angles ſomewhat rugged not ſmooth and even; the ſegments of the calyx narrower and reflex[y]. See n. 37.

35. This reſembles *G. Centaurium*, but the flowers are peduncled and yellow; the leaves have not three nerves but one only[z].

Gerard adds, that the tube of the corolla is longer, the flowers fewer in number, and the ſtyle double.—And Pallas, that the ſegments of the calyx are almoſt capillary; the tube of the corolla very narrow, dilated at the throat, the ſegments of the border nearly linear. Stem ſeldom more than a hand high, ſharply four-cornered, dichotomous at top. Leaves uſually oval, not ovate-lanceolate as in *G. Centaurium*. Peduncles thick, round, half an inch in length. Calyxes ſharply five-cornered, the ſegments ſubulate, as long as the tube of the corolla, the whole of which is an inch in length. Capſule cylindric, a little longer. The calyx is permanent, and ſeparable not without difficulty from the corolla.—There is a variety with two flowers at top, one terminating, the other lateral; ſometimes bifid, or three-flowered, the lateral flowers equally peduncled, the middle one ſeſſile[a].

Native of the ſea coaſts in the South of France, and Italy: about Naples, &c. alſo about Tiflis, and every where on the ſhore of the Euxine, where it has uſually white corollas[b]. In the Azores. Introduced in 1777, by Maſſon[c]. It is annual, and flowers in may. With us in july and auguſt.]

36. This is an annual plant, with an upright ſtalk, about a foot high, ſending out ſeveral branches towards the top. The flowers are produced from the ſide and at the top of the ſtalk in looſe irregular umbels; they are white, and about the ſize of thoſe of Common Centaury.——Native of the South of France and Italy.

[This has frequently purple corollas.

37. Native of America.—The Eaſt-Indian plant (n. 34.) is ſcarcely different. Root perennial. Stems ſeveral, a hand high, jointed. Leaves lanceolate. Flowers ſeſſile. Corollas yellow; the ſegments five and ſharp. Nectary a roundiſh ſcale annexed to the baſe of each filament within the tube of the corolla. Stigma capitate. Capſule half-two-celled[d].

Koenig ſent two plants from the Eaſt Indies, both agreeing with the Linnean character, but very diſtinct from each other. α. With the ſtalk angular at the baſe, but the upper part round; branched and ſtreaked: the leaves lanceolate and three-nerved: the flowers in whorls from the upper axils. This is the ſame with that which is deſcribed above.

β. With the ſtalk regularly four-cornered, and perfectly ſimple. The leaves linear-lanceolate, fleſhy and nerveleſs. Flowers from every axil, of the ſame form and ſize as the others. This is the plant which is figured by Burman[e].

38. Size and ſtature of *G. Amarella*. Stem undivided, four-cornered with the corners membranaceous. Leaves three-nerved, ſharp. Peduncles oppoſite, bearing at the end five flowers on very ſhort pedicels. Calyxes very ſhort, narrow. Corollas blueiſh, with a ſmall border, pervious at the throat[f].

According to Retzius, the *G. involucrata* of Friis, figured alſo in fl. dan. t. 344. is entirely diſtinct from this; not having five flowers on a peduncle, but from one or two to ten; the leaves blunt, and the calyxes by no means very ſhort. He refers it rather to *aurea*, n. 27.—Found in Pennſylvania by Kalm.

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[n] Lyons Mſs. [o] Stokes in With. [p] Scopoli. [q] Curtis and Stokes in With. [r] Withering. [s] Hudſon. [t] Ger. prov. Vaillant, Haller. [u] Swartz in act. holm.

[x] Linn. ſuppl. [y] Vahl. [z] Linn. mant. [a] Gouan. [b] Pallas. [c] Hort. kew. [d] Linn. ſyſt. [e] Retzius. [f] Linn. ſpec.

39. A foot in height, tender and very ſmooth, with but few branches. Leaves ſubpetioled, ſmall: the upper ones more remote. Peduncle long, naked, terminating, one-flowered. Bractes two, below the flower, oppoſite, awl-ſhaped, upright. Calyx linear. Tube of the corolla funnel-form, longer than the calyx: border flat, beardleſs, yellow.

Found in the Azores by Maſſon[g]. See n. 35.

40. A very ſmall, filiform annual plant, ſcarcely branched, native of the mountainous woods of Martinico[h]: in the hollows of trees, ſcarcely pervious to the light. Stem upright, ſimple, four inches high, tender, ſhining, ſtraw-coloured, with oppoſite, very ſhort, remote ſtipules, at the joints. Flower terminating, ſolitary, erect, yellowiſh, inodorous[i].

41. So nearly allied, ſays Linneus, to *campeſtris* (n. 43.) as to be ſcarcely diſtinguiſhable, except by the calyx. Stem ſomewhat angular, branched; branches not longer than the leaves, (which are lanceolate) terminated by bunches of flowers. When this has a quadrifid calyx, it is in plants that are bitten down, and the diviſions are conſtantly equal: beſides the calyx of *campeſtris* is really four-leaved[k].

Root annual, twiſted, yellowiſh. Stem ſquare, erect, bearing ſeveral pairs of ſeſſile, ovate, three-nerved, dark-green leaves, and clothed from top to bottom with flowers, on ſhort, axillary, forked ſide branches, one being terminal. Calyx pale, with green ribs, and divided half way down into five lanceolate, nearly equal ſegments. Tube of the corolla twice as long as the calyx; ſegments of the border five, rarely three or four, horizontal when the ſun ſhines, the orifice crowned with a purple upright fringe, which conceals the ſtamens. Germ oblong: ſtyles very ſhort: ſtigmas divaricated[l].

From the variation of the number of parts in the corolla, which I had obſerved to be frequently four and five on the ſame plant, I was formerly led to a falſe concluſion, that this and the *campeſtris* are not ſpecifically different, but of this I now agree with Mr. Woodward that there is little doubt, the corolla varying ſo much as to number in this genus, as not to be depended upon for ſpecific diſtinctions.

In dry paſtures, through moſt parts of Europe, with us not uncommon, eſpecially in calcareous ſoils: flowering from july to ſeptember. Linneus ſays, in the autumn, with Colchicum or Meadow Saffron, later than campeſtris[m]. According to Ray, at the end of auguſt, or ſomewhat earlier.

A variety under the name of *the taller autumnal Gentian, with Centaury-like leaves*, is ſaid, in Ray's ſynopſis, to have been found near Welwyn in Hertfordſhire, and Belchamp St. Paul in Eſſex: but it does not differ in any thing eſſential from the other.

Another variety is mentioned by Ray under the name of G. fugax verna ſ. præcox, differing in no reſpect from Amarella except in the time of flowering. This earlineſs may perhaps be owing to the plants having ſprung up in autumn, and ſtood the winter[n].

42. Upright, almoſt ſimple, a foot or leſs in height. Root ſlender ſomewhat woody. Stalk ſubquadrangular, a little contracted. Root-leaves ſmaller than the others, ovate, attenuated towards the baſe; the lower ſtem-leaves reſembling theſe; the reſt very remote from each other, oblong, five-nerved, ſeſſile; the uppermoſt ſomewhat claſping, and more lanceolate: they are all paler underneath, and ſometimes purpliſh. Flowers five on the top of the ſtalk between two pairs of leaves, on very long peduncles, and ſometimes from the next axils acceſſory little branches having one, two, or three flowers and one pair of leaves. Peduncles ſubquadrangular. Calyx angular, funnel-ſhaped, with two of the ſegments alternately broader, cordate-rounded, rolled back a little, and as it were eared. When the flower is five-cleft, three of the ſegments are ovate and ſmaller, the two others wider. Corolla uſually four-cleft, the tube whitiſh, the ſegments rounded, pale blue, extremely villoſe, at the baſe within, inſomuch that the tube is entirely cloſed with the long hairs. Anthers ſmall, brown, incumbent, not upright as in moſt of the ſpecies. Germ fuſiform, with a twin ſtigma. Near the ſea, it branches very much, and grows large; the farther it recedes from the ſea, the ſmaller it becomes; inſomuch that in moſſy wet ſituations inland, it is hardly an inch high, ſlender, and one-flowered. The maritime plants have generally the corolla violet or reddiſh, on open heaths at a diſtance from the ſea, it is pale blue or white; in marſhes commonly blue.—Certainly diſtinct from *G. campeſtris*.—Found throughout all Kamtſchatka, the iſlands towards Japan and America, and on the ſhore of America itſelf. The herb, both freſh and dry, is uſed by the natives as a ſtomachic and antiſcorbutic, and againſt vernal diarrhœas cauſed by feeding on fiſh; it is not however ſo bitter as ſome of the other ſpecies. It flowers the beginning of auguſt; and perfects its ſeeds in ſeptember[o].

43. Linneus can hardly be perſuaded that this is diſtinct from Amarella (n. 41.). He thinks it may be a variety, or perhaps a hybridous or mule plant. Scopoli boldly makes them one, becauſe the flowers cloſe at the approach of wet, in both; the ears of the corolla are finely jagged and upright; the edges of the calycine teeth are reflex; the baſe of the corolla adheres ſo cloſe to the calyx, that when torn away it carries off the inner ſkin along with it; and the ſtigmas are alike in form and poſition.

Others have no doubt of their being perfectly diſtinct. The calyx in this conſiſts of four ſeparate leaflets; the two outer oval-lanceolate, very large, the inner lanceolate, ſomething membranaceous, but one-fourth the breadth of the outer. Stem more angular, approaching to ſquare, and branched; the branches longer than the leaves, with the flowers more ſcattered; leaves ſhorter, and not ſo ſharply pointed. The flowers alſo are larger than thoſe of *Amarella*, though the plant is uſually ſmaller. Haller deſcribes it as extremely branched, and there are ſpecimens in England branched from the root to near the top; the branches long, with leaves and flowers ſcattered the whole length: but *Amarella* has the branches ſhort, even the lower ones not exceeding the length of the leaves from which they ſprang; the upper ones in general much ſhorter[p].

It is rather paler in colour, and never ſo tall as Amarella; the ſtem being leſs drawn up, the flowers fewer, and on longer flower-ſtalks, they appear more corymboſe; but the eſſential mark of diſtinction is in the calyx being deeply divided into four unequal ſegments, two external, oppoſite, oval, very large, completely enfolding and concealing the two others, which are lanceolate and not a fifth part of their breadth[q].

According to Pallas, it differs from *Amarella* in being taller and more branched, the leaves narrower, two ſegments of the calyx much larger than the others, the corolla ſmaller by half, paler, more frequently four-cleft, &c. It differs from the foregoing ſpecies, in the ſtem putting out flowering branches almoſt from the root, branches frequent, and leaves more lanceolate, the herb of a darker green and frequently purpliſh, the flowers ſmaller and ſubſeſſile, all the leaves of the calyx ſharp not alternately wide and heart-ſhaped, the ſegments alſo of the corolla ſharp. He adds—1. that it varies in ſize from a foot and half or a ſpan to three inches, and from a very branching ſtate to perfect ſimplicity.—2. in the ſize and colour of the corolla.—3. in the diviſion of the corolla into four or five ſegments; which is the caſe ſometimes even on the ſame plant.

Native of moſt part of Europe from Lapland to Italy. Frequent in Ruſſia and Siberia to the lake Baikal: whereas Pallas has not obſerved *Amarella* in Siberia, nor in Ruſſia, except on mount Caucaſus. With us it is not ſo common as *Amarella*: but it has been obſerved about Kendal and other places in the north, in Wales, Cheſhire, Cornwall, Stratton-heath in Norfolk, Bury in Suffolk, &c.

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[g] Linn. ſuppl.

[h] Linn. ſpec.

[i] Jacquin.

[k] Woodw. Mſs.

[l] Engl. bot.

[m] Fl. ſuec.

[n] Engl. bot.

[o] Pallas.

[p] Woodw. Mſs.

[q] Engl. bot.

In Engliſh Botany it is obſerved, that it grows in paſtures, more particularly towards the ſea; and that it is not ſo much confined to a calcareous ſoil as the Amarella. Linneus ſays that it flowers in ſummer, after the ſolſtice. With us in ſeptember and october. Various months are ſet down by others, as april to june, and auguſt. Dr. Withering ſays that he has ſeen it flowering in a garden in october. This, as well as the two former, is annual.

According to Linneus, poor people uſe it inſtead of hops in beer: and according to Pallas, as a medicine, in common with many other ſpecies.

44. Root ſmall, round, ſtraight, not annual, (biennial *Pallas.*) Stalk from two to eight inches long (a foot *Haller,*) reddiſh, angular, ſmooth, leafy; ſometimes ſimple and one flowered, ſometimes with oppoſite branches, terminated by upright, ſeſſile, ſolitary flowers. Leaves ſeſſile, the lower ones ſhorter, obovate or ſpatulate; the reſt linear-lanceolate, acuminate, longer, quite entire, upright, ſmooth, not veined. Calyx quadrangular, lax, cleft into four parts down to the middle, green with a ſhade of duſky purple; the ſegments upright, lanceolate, acuminate. Corolla large, deeper or paler blue; the tube greeniſh, and obſcurely quadrangular, the ſegments oblong-obovate, blunt. Filaments pale, flat, ciliate at bottom: anthers oblong, twin, bay-coloured with a yellow pollen. Germ lanceolate, four-cornered but flatted, on a long pedicel. Capſule fuſiform, much flatted. Stigmas at firſt orbiculate, afterwards bifid and revolute[r]. According to Pollich there are only four ſtamens. Scopoli obſerves four nectareous glands at the baſe of the pedicel on which the germ ſtands.

The corolla varies in different countries: in America it is much ciliated: in Italy but little; in Iceland and Norway it is only ſerrate[s].

Pallas remarks, that this ſpecies is the connecting link between this genus and the Swertias; that it is very upright, with ſtiff branches, ſometimes exceedingly branched, much higher in Siberia and mount Caucaſus than the European plant, but with ſmaller flowers. Pallas has figured them both.

Native of Switzerland, Norway, Denmark, Germany, Auſtria, Carniola, Italy, Siberia, Caucaſus, Canada: flowering in auguſt and ſeptember: in Italy in october, and even till winter.—It is uſed officinally, by the natives; and deſerves a place in gardens from the beauty of the flowers[t].

45. Leaves lanceolate, three-nerved, connate. Flowers fewer from the lower axils, but more crowded from the top of the ſtalk. At each bunch of flowers there are two ſmall leaves. Calyx ſhort, truncate, with the teeth remote and ſhort[u]. It is divided into the ſame number of ſegments with the corolla: that is, moſt frequently four, but ſometimes five. Corolla of a fine blue colour; between the ſegments are toothlets interpoſed, uſually bifid, but ſometimes ſimple, or trifid[x].

Pollich ſays that there are only four ſtamens. Both he and Leers remark, that the ſtigmas are rolled back in a ſpiral. The root is perennial; and it puts up ſeveral ſtalks, from a ſpan to a foot high and more.

The leaves being in pairs, and each pair croſſing the next at right angles, has given occaſion to the trivial name *Cruciata*, and the Engliſh name *Croſſwort Gentian.*

Native of Switzerland, Germany, Auſtria, Carniola, Hungary, the Apennines, Ruſſia, and Siberia: flowering in july and auguſt. In our gardens it flowers in june, and ſometimes in may. Cultivated in 1596, by Gerarde[y].

46. Native of Chili.

47. Root white, woody, ſimple or with large fibres. Root-leaves ſmall, narrow, oblong. Stalk about three inches high, ſimple or branched, at each joint a pair of ſmall, narrow, ſharp leaves. Flowers at the ends of the branches on long pedicels, yellow, ſmall, almoſt always cloſed, ſeeming, as far as could be diſcerned, to have five petals. Capſule elliptical[z]. The diviſion of the corolla is probably a miſtake; though perhaps it may be ſometimes five-cleft.

Every part of the herb is ſmooth. Flowers expanding only in bright ſunſhine[a].

Uſually branched, though ſometimes the ſtalk is ſimple. Corolla pale yellow, cut into four equal ſegments. Stamens four. Calyx cut almoſt to the baſe into four ſegments, rounded at the back[b].

It is a ſmall annual plant, growing in bogs, in Denmark, France, and England. Mr. Ray firſt remarked it towards the end of Cornwall (near St. Ives) in rotten marſhy ground. Dr. Pulteney ſent it out of Dorſetſhire. It is alſo found in Hampſhire and Devonſhire[c]. The time of flowering is July.

48. Root annual, fibrous. The plant has the appearance of *G. Centaurium.* Stalk erect, a ſpan high, dichotomous, quadrangular. Leaves ſeſſile, ovate, quite entire, ſmooth, ſomewhat fleſhy; the lower ones roundiſh; under the upper ramifications awl-ſhaped, very ſhort. Flowers ſeſſile, ſolitary in the diviſions of the ſtem, of a purple colour. Calyx bent in a little, ſtreaked, with four awl-ſhaped teeth. Tube of the corolla the ſame length with the calyx; border in two parts, each part divided in two; the two upper ones erect, the other two bent down incloſing a larger anther below, on the outſide ſpreading. Stamens four unequal, three within the tube, the fourth inſerted into the throat of the corolla, with a larger anther than the others. Germ oblong; ſtyle flexuoſe, longer than the ſtamens; ſtigma two-lipped, villoſe on the inſide, with the lips reflex. Capſule ſhorter than the calyx opening with a ſpring.

Native of Malabar, in cultivated fields. Diſcovered by Koenig[d].

49. Stem large, woody, round, with many, very long, climbing branches, without ſpines or tendrils. Leaves ovate-lanceolate, quite entire, ſmooth, aſh-coloured, oppoſite. Flowers lateral, with a ſmall, five-toothed calyx, and a bell-ſhaped corolla, with a wide tube, on the outſide aſh-coloured dotted with white, within filled up with denſe purple hairs; border ſpreading, white, bluntly five-cleft, ſhort, the ſegments uſually laciniate-plaited. Capſule roundiſh.

Native both of China and Cochinchina, climbing trees and hedges. It has an unpleaſant fetid ſmell, which is loſt in drying; and a very bitter flavour. In the Chineſe plant the leaves are often cordate, ſlightly emarginate at the baſe. It is tonic and ſtomachic[e].

50. Stem round, erect, ſimple. Leaves connate at the baſe, two inches long, very ſmooth, three-nerved. Flowers from the upper axils and at the end of the ſtalk; the lower ones ſolitary on each ſide, ſometimes only in one axil; terminating ones four, ſeſſile. At the baſe of each calyx two linear leaves, narrowed towards the baſe, ſhorter than the calyx; which is tubular, widening gradually upwards, with five teeth the length of the calyx itſelf, leafy, linear-lanceolate, blunt, attenuated below. Corolla large, an inch and half wide, almoſt like that of *G. ſaponariæ.*—Native of Virginia.

51. Stem herbaceous, four-cornered with decurrent lines, ſmooth. Leaves ſeſſile, oppoſite, an inch long; the upper ones ſubcordate, all very ſmooth, ending in a ſhort dagger-point, and three-nerved. Peduncles at the ends of the branchlets, commonly in pairs, one longer, two-flowered, the other ſhorter, one-flowered; at the baſe on each ſide is a briſtle-ſhaped leaf. Calyx tubular, ſmooth. Corolla almoſt like that of *G. Centaurium.*—Native of the Eaſt-Indies[f].

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[r] Krocker.
[s] Linn.
[t] Pallas.
[u] Linn. mant.
[x] Haller.
[y] Hort. kew.
[z] Ray hiſt.
[a] Engl. bot.
[b] Vaillant.
[c] Hudſon.
[d] Linn. mant.
[e] Loureiro.
[f] Vahl.

52, 53. Natives of the Cape of Good Hope; obſerved by Thunberg.

PROPAGATION AND CULTURE.

Of this numerous genus not above ſixteen are cultivated in our gardens; and five only are wild in this country. The greater part are natives of the European Alps. Several of theſe have been lately introduced from thence by Doctors Pitcairn and Fothergill, but it is difficult to preſerve ſome of them long in a ſituation ſo different from their proper one. Cluſius affirms, that he could not by any art make the ſecond or third ſpecies continue, or bear flowers in a garden.] The perennial ſorts in general may be propagated both from ſeed, and by offſets, taken off in autumn, which is the beſt ſeaſon for removing all theſe plants; but they ſhould not be removed or parted oftener than every third year, if they are expected to produce ſtrong flowers.

[The 1ſt, 34th and 35th with a few others not in cultivation at preſent require the protection of the green-houſe: the 16th and two or three others, little known, muſt be raiſed in a hot-bed, and kept in a ſtove; the reſt are hardy, and were they not difficult to preſerve, many of them would be very acceptable in borders of flowers.]

2. This plant delights in a light loamy ſoil and a ſhady ſituation, where it will thrive much better than in a light dry ſoil, or an open expoſure. It is propagated by ſeed, which ſhould be ſown in pots ſoon after it is ripe, for if it is kept till the ſpring, it will not ſucceed; theſe pots ſhould be placed in a ſhady ſituation, and kept clean from weeds. In the ſpring the plants will appear, when they muſt be duly watered in dry weather, and kept clean from weeds till the following autumn; then they ſhould be carefully ſhaken out of the pots, ſo as not to break or injure their roots; and a ſhady border of loamy earth ſhould be well dug and prepared to receive them, into which the plants ſhould be put at about ſix inches diſtance each way, obſerving to let the top of the roots be a little below the ſurface of the ground, then preſs the earth cloſe to the roots; after this they will require no farther care, but to keep them conſtantly clean from weeds; and if the following ſpring ſhould prove dry, they ſhould be duly watered, which will greatly forward their growth. In this border the plants may ſtand two years, by which time they will be fit to tranſplant where they are deſigned to remain; therefore in autumn, ſo ſoon as their leaves decay, they may be removed; but as the roots of theſe plants run deep into the ground, like Carrots, there muſt be great care taken in digging them up, not to cut or break their roots, for that will greatly weaken, if it does not kill them. After the plants are well fixed in their places, they require no other culture, but to dig the ground about them early in the ſpring before they begin to ſhoot, and in the ſummer to keep them clean from weeds. The roots of theſe plants will continue many years, but the ſtalks decay every autumn; the ſame roots do not flower two years together, nor ſeldom oftener than every third year; but when they flower ſtrong, they make a fine appearance; and as theſe delight in ſhady moiſt ground, where but few ornamental plants will thrive, they ſhould not be wanting in good gardens.

3. to 13. may be propagated and cultivated in the ſame manner. [Pallas ſays that the 4th is eaſily raiſed from ſeed in the Ruſſian gardens.]

The 9th and ſome of the others muſt have a moiſt loamy ſoil, otherwiſe they will not thrive. [Cluſius relates, that he made the 9th flower in a garden, but that it drooped, and loſt much of its native vigour and elegance.]

The 11th not ſtriking its roots ſo deep into the ground as the officinal yellow Gentian, may be tranſplanted with leſs hazard, eſpecially if it be removed with a good ball of earth to the roots. In a ſtrong moiſt ſoil this will flower annually.

14. This is commonly propagated by parting the roots, but it muſt not be often tranſplanted or parted, in order to have it flower ſtrong; it ſhould have a loamy ſoil and a ſhady ſituation. It may alſo be increaſed by ſeeds ſown in autumn; in a good ſoil the plants will be ſtrong enough to flower the ſecond year, and theſe ſeedling plants will flower much ſtronger than thoſe which are propagated from offſets.

[This is one of the ſpecies beſt known, and much eſteemed for the brilliant azure of its flower, ſo large in proportion to the ſize of the plant.

Ray obſerves, that although it be a native of the higheſt Alps, yet it readily admits cultivation; and that it was much ſought after in his time by gardeners and floriſts for the beauty of the flower.

The other alpine *Gentianellas* may be increaſed and treated in the ſame manner. In common with other alpine plants, theſe love a pure air, an elevated ſituation, and a loamy ſoil, moderately moiſt; they do not proſper therefore very near London[g].

Cluſius affirms, in particular, that *G. verna* (n. 22.) rejects all culture.]

Several of theſe (as 28, 29, 30.) growing on ſpongy ground, it is difficult to cultivate them in gardens. The ſeeds muſt be ſown in pots, or upon a moiſt boggy ground in autumn, in the ſhade; when the plants come up the ſurface of the ground ſhould be covered with moſs, which ſhould be conſtantly kept moiſt.

44. and 45. may be increaſed and treated as n. 14.

[32. The common Centory cannot be cultivated in gardens, according to Bodæus a Stapel. Yet Mr. Ray raiſed it in his garden from ſeed, and it grew, flouriſhed, and perfected its ſeed.]

16. This is propagated by ſeeds, ſown on a hot-bed ſoon after they are ripe. The plants muſt be treated in the ſame manner as other tender annual plants from hot countries. If the ſeeds be ſown in autumn in pots placed in the tan-bed in the ſtove, they will ſucceed better than when ſown in the ſpring, the plants will flower early, and good ſeeds may be obtained.

GENTIANA. See *Orobanche*, *Saponaria*, *Sarothra*, *Swertia*.

GENTIANA PERFOLIATA. See *Chlora*.

GENTIANELLA. See *Gentiana* and *Ruellia*.

[GENTIANOIDES. See *Gentiana*.

GEOFFROYA. (*So named by Jacquin in honour of Monſieur Geoffroy, Memb. Acad. Par. He was author of* Materia Medica, *and died in* 1731.)

Lin. gen. n. 878. *Reich.* 952. *Schreb.* 1193. *Jacqu. amer.* 207. *Juſſ.* 363.

Claſſ. 17. 4. Diadelphia Decandria.

Nat. order of *Papilionaceæ* or *Leguminoſæ*.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, bell-ſhaped, half-five-cleft: the two upper diviſions diverging, ſpreading.

COR. Papilionaceous: *banner* roundiſh, emarginate, flat, reflex; *wings* the ſame length with the banner, blunt, concave; *keel* compreſſed, the ſame length and figure with the wings.

STAM. *Filaments* diadelphous (ſimple and nine-cleft) the length of the keel. *Anthers* roundiſh.

PIST. *Germ* roundiſh. *Style* ſubulate. *Stigma* obtuſe.

PER. *Drupe* ovate, large, with a longitudinal groove on each ſide.

SEED. *Nut* ſubovate, woody, rather flatted, with a longitudinal groove on each ſide, acute, two-valved.

ESSENTIAL CHARACTER.

Cal. five-cleft. *Drupe* ovate. *Nut* flatted.

SPECIES.

1. Geoffroya ſpinoſa. *Thorny Geoffroya.*
   Lin. ſpec. 1043. *ſyſt.* 667. *Reich.* 3. 485. *Jacqu. amer.* 207. *t.* 180. *f.* 2. *pict.* 102. *t.* 262. *f.* 58.
   Umari. *Marcgr. braſ.* 121. *Raii hiſt.* 1518. *n.* 3.
   Thorny; leaflets oblong.
2. Geoffroya inermis. *Smooth Geoffroya.*
   Ait. hort. kew. 3. 52. *Swartz prodr.* 106. *Wright in philoſ. tranſ.* 1777. *p.* 517. *t.* 10. *Woodv. med. bot.* 306. *t.* 112.
   Without thorns; leaflets lanceolate.

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[g] Curtis.

DESCRIPTIONS, &c.

1. This is a thorny tree, ſays Linneus, with pinnate leaves, and a drupaceous fruit, reſembling the peach.

It is deſcribed by Jacquin, as an inelegant tree, twelve feet high, upright, branched. Thorns few, awl-ſhaped, frequently an inch long, thick on the trunk and branches. Leaves pinnate; midrib ſmooth, grooved above, four inches long; leaflets commonly ſeven on each ſide, with an odd one, oblong, blunt, ſmooth, quite entire. Racemes ſimple, denſe, axillary, three or four inches long. Flowers on very ſhort peduncles, with corollas of a dirty fulvous colour, diffuſing widely a moſt fetid odour. The Drupe does not ill repreſent the freſh fruit of an Almond, the rind is very ſlightly tomentoſe, and of a greeniſh yellow colour. The pulp is ſoft, ſweet, yellowiſh, has a nauſeous ſmell, and ſtains the hands with ruſt-colour not eaſily waſhed out. The nut or ſtone is whitiſh, adheres cloſe to the pulp, and contains a white kernel, that has a farinaceous aſtringent taſte. A plant with papilionaceous flowers, and a drupe for a fruit, is a great ſingularity[a].—Native of Carthagena in New Spain.

2. This tree riſes to a conſiderable height, and towards the top ſends off ſeveral branches: the wood is hard enough to admit of being poliſhed: the external bark is ſmooth and gray; internally it is black and furrowed. Leaves pinnate[b].

Leaflets oppoſite, oblong-ovate, or lanceolate, acuminate, ſmooth above, nerveleſs beneath, on ſhort petioles. Flowers in cluſters, upon large branched ſpikes. Calyx very ſlightly five-parted, with ſhort, ovate diviſions. Corolla pale roſe-colour. Keel of the corolla ovate, ſpreading, very ſlightly divided into two parts. The fruit is a large ſubovate drupe, incloſing a woody nut.—Native of Jamaica[c]. Introduced in 1778, by Meſſrs. Kennedy and Lee[d].

In Jamaica it has the name of Cabbage-bark or Worm-bark tree. The bark, which has a mucilaginous ſweetiſh taſte, and a diſagreeable ſmell, was firſt noticed as a vermifuge by Mr. Peter Duguid; but Dr. Wright, who reſided a long time at Jamaica, has communicated the fulleſt information concerning this tree: according to him, the bark is powerfully medicinal, and its anthelmintic effects have been eſtabliſhed at Jamaica by long experience.

It may be given in decoction, ſyrup, powder or extract; but muſt be uſed with caution in ſmall doſes at firſt[e].]

GERANIUM. (*From γερανος, a crane, the fruit having the form of a crane's head and neck.*)

Lin. gen. n. 832. *Reich.* 897. *Schreb.* 1118. *Tournef.* 142. *Gærtn. t.* 79. *Cavan. diſſ.* 4. 194. *Juſſ.* 268.

Claſſ. 16. 4. Monadelphia Decandria.

Nat. order of *Gruinales.—Gerania.* Juſſ.

GENERIC CHARACTER.

CAL. five-leaved: *leaflets* ovate, acute, concave, permanent.

COR. *Petals* five, obcordate or ovate, ſpreading, regular.

Nectary five honied glands, faſtened to the baſe of the longer filaments.

STAM. *Filaments* ten, awl-ſhaped, connected ſlightly at the baſe, ſpreading at top, ſhorter than the corolla. *Anthers* oblong, verſatile.

PIST. *Germ* five-cornered, beaked. *Style* awl-ſhaped, longer than the ſtamens, permanent. *Stigmas* five, reflex.

PER. *Capſule* five-grained, beaked, the cells opening inwards, each having a ſimple naked tail fixed to it.

SEEDS ſolitary, ovate-oblong.

ESSENTIAL CHARACTER.

Cal. five-leaved. *Cor.* five-petalled, regular. *Nect.* five honied glands, faſtened to the baſe of the longer filaments. *Fruit* five-grained, beaked: *beaks* ſimple, naked, neither ſpiral nor bearded.

SPECIES.

* *Peduncles one-flowered.*

1. Geranium ſibiricum. *Siberian Crane's-bill.*
Lin. ſpec. 957. *Reich.* 3. 329. *Burm. ger.* 5. *Gmel. ſib.* 3. *t.* 67. *Jacqu. hort.* 1. *t.* 19.
Peduncles commonly one-flowered, leaves five-parted, acute, leaflets pinnatifid.

2. Geranium ſanguineum. *Bloody Crane's-bill.*
Lin. ſpec. 958. *Reich.* 329. *Burm. ger.* 3. *Hudſ. angl.* 305. *Wither. arr.* 734. *Lightf. ſcot.* 372. *Engl. bot.* 272. *Relh. cant. n.* 505. *Hall. helv. n.* 930. *Pollich pal. n.* 655. *Fl. dan. t.* 1107. *Krock. ſileſ. n.* 1123. *Villars dauph.* 3. 381.
α. G. ſanguineum maximo flore. *Bauh. pin.* 318. *Mor. hiſt. ſ.* 5. *t.* 16. *f.* 17.
G. ſanguineum. *Ger. emac.* 945. 2. *Petiv. brit. t.* 64. *f.* 9.
G. 7 hæmatodes. *Cluſ. hiſt.* 2. 102. *f.* 1. *Park. par.* 227. 6. *Raii hiſt.* 1061. *n.* 32. *ſyn.* 360. 14.
G. gruinum hæmatodes ſupinum radice reptatrice. *Lob. ic.* 1. 660.
C. ſextum. *Fuchſ. hiſt.* 209.
G. ſanguineum ſ. hæmatodes craſſa radice. *Bauh. hiſt.* 3. 478. *f.* 2.
β. G. Lancaſtrenſe. *Mill. dict. n.* 4.
G. hæmatodes Lancaſtrienſe, flore eleganter ſtriato. *Dill. elth.* 163. *t.* 163. *f.* 163. *Petiv. brit. t.* 64. *f.* 11. *Raii ſyn.* 360. *n.* 16. *hiſt.* 1061.
Peduncles one-flowered, leaves five-parted, trifid, orbiculate.

[3. Geranium ſpinoſum.
Lin. ſyſt. 618. *Reich.* 329. *mant.* 98. *Burm. afr.* 18. *t.* 31. *ger.* 16. *n.* 2. *Cavan. diſſ.* 195. *t.* 75. *f.* 2.
Peduncles one-flowered, ſtem fleſhy, knobbed, ſpines ſolitary, ſtrict.

4. Geranium emarginatum.
Lin. ſyſt. 618. *ſuppl.* 306.
Peduncles one-flowered, leaves ovate, emarginate, crenate.

* * *Peduncles two-flowered, ſhrubby.*

5. Geranium anemonefolium. *Smooth Crane's-bill.*
L'Herit. geran. n. 6. *t.* 36. *Ait. hort. kew.* 2. 432. *Curt. magaz.* 206.
G. palmatum. *Cavan. diſſ.* 4. 216. *t.* 84. *f.* 2.
Leaves palmate, leaflets pinnatifid; ſtem ſhrubby.]

6. Geranium macrorhizum. *Long-rooted Crane's-bill.*
Lin. ſyſt. 616. *mant.* 434. *Reich.* 321. *hort. cliff.* 343. 4. *Burm. ger.* 10. *Jacqu. ic.* 1. *t.* 134. *collect.* 1. 258.
G. batrachoides odoratum. *Bauh. pin.* 318. *Mor. hiſt.* 2. 514. *ſ.* 5. *t.* 16. *f.* 15. *Raii hiſt.* 1061.—longius radicatum. *Bauh. hiſt.* 3. 477. *Ger. emac.* 942. 4.
Calyxes inflated, petals entire, piſtil very long, ſcape dichotomous.

* * * *Peduncles two-flowered, perennial.*

[7. Geranium caneſcens. *Silky-leaved Crane's-bill.*
L'Herit. geran. n. 12. *t.* 38. *Ait. hort. kew.* 2. 433.
Leaves ſubpeltate, five-parted, caneſcent underneath, lobes gaſhed, petals emarginate.

8. Geranium incanum. *Hoary Crane's-bill.*
Lin. ſpec. 957. *Reich.* 327. *amoen.* 6. 91. *Burm. ger. n.* 26. *Pluk. phyt. t.* 186. *f.* 4. *Raii hiſt.* 3. 513. *n.* 28.
Calyxes awned, petals entire, arils hirſute, leaves ſubdigitate, pinnatifid.

9. Geranium tuberoſum. *Tuberous-rooted Crane's-bill.*
Lin. ſpec. 953. *Reich.* 321. *hort. cliff.* 343. 3. *Burm. ger.* 9. *Krock. ſileſ. n.* 1197. *Bauh. hiſt.* 3. 474. *f.* 3. *Dod. pempt.* 61. *Raii hiſt.* 1060. 26. *Ger.* 795. *emac.* 940. *Park. parad.* 228. *t.* 227. *f.* 4.
G. tuberoſum majus. *Bauh. pin.* 318.
G. bulboſum. *Lob. ic.* 661.—vulgare. *Park. theat.* 706.
Leaves many-parted, ſegments linear, ſubdivided, obtuſe.]

10. Geranium phæum. *Dark-flowered Crane's-bill.*
Lin. ſyſt. 616. *ſpec.* 953. *Reich.* 321. *Burm. ger.* 11. *Jacqu. vind.* 122. *Hall. helv. n.* 934. *Hudſ. angl.* 301. *Wither. arr.* 726. *Fl. dan. t.* 987. *Krock. ſileſ. n.* 1108?

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[a] Jacquin. [b] Woodville. [c] Wright in phil. tranſ. [d] Hort. Kew. [e] Woodv. & Wright.

G. patulum. *Villars dauph.* 3. 371?

G. phœo ſ. pullo flore. *Cluſ. hiſt.* 2. 99. 1. *Bauh. hiſt.* 3. 477. *f.* 3. *Raii hiſt.* 1062. 35. *Park. theat.* 704. 3.

G. batrachoides pullo flore. *Ger. emac.* 942. *f.* 3.

Peduncles ſolitary, oppoſite to the leaves, calyxes ſlightly awned, ſtem erect, petals waved.

11. Geranium fuſcum.

Lin. ſyſt. 616. *Reich.* 322. *mant.* 97. *Park. theat.* 704. *Lob. ic.* 1. 661. 1.

G. montanum fuſcum. *Bauh. pin.* 318.

G. fuſcum ſ. maculatum. *Park. parad.* 229. *n.* 7. *Ger.* 799. *f.* 1. *emac.* 945. *f.* 1.

G. phœum flore reflexo. *Bauh. hiſt.* 3. 477. *f.* 2. *Raii hiſt.* 1063. *n.* 36.

G. montanum. *Dod. pempt.* 64. *f.* 2.

Peduncles two-flowered, oppoſite to the leaves, in pairs, ſtem patulous, petals quite entire.

[12. Geranium reflexum. *Purple-flowered Crane's-bill.*

Lin. ſyſt. 616. *Reich.* 322. *mant.* 257.

G. flore purpureo reflexo, italicum. *Barrel. ic.* 39.

Peduncles and leaves alternate, petals reflex, laciniated, the length of the calyx, which is awnleſs.

13. Geranium lividum. *Wrinkled-leaved Cranes-bill.*

L'Herit. geran. n. 18. *t.* 39. *Ait. hort. kew.* 2. 434. *Hall. helv. n.* 935.

G. phæum. *Villars dauph.* 3. 369?

Leaves half-ſeven-lobed, gaſhed, calyxes ſimple, hairy, petals flat, ſomewhat waved.]

14. Geranium nodoſum. *Knotty Crane's-bill.*

Lin. ſpec. 953. *ſyſt.* 616. *Reich.* 322. *mant.* 434. *Burm. ger.* 7. *Hudſ. angl.* 301. *Wither. arr.* 727. *Villars dauph.* 3. 369. *Bauh. pin.* 318.

G. 5, 6 Plateau. *Cluſ. hiſt.* 2. 101. *Raii ſyn.* 361.

Petals emarginate, ſtem-leaves three-lobed, entire, ſerrate, lucid underneath.

15. Geranium ſtriatum. *Streaked Crane's-bill.*

Lin. ſpec. 953. *Reich.* 323. *amoen.* 4. 282. *Burm. ger.* 6. *Curt. magaz.* 55. *Hall. helv. n.* 936. *Krock. ſileſ. n.* 1110.

G. romanum verſicolorum ſ. ſtriatum. *Park. parad.* 229. *t.* 227. *f.* 7. *Mor. hiſt.* 2. 516. *ſ.* 5. *t.* 16. *f.* 24. *Raii hiſt.* 1063. *n.* 37.

Leaves five-lobed, lobes widened in the middle; petals two-lobed, netted-veined.

16. Geranium argenteum. *Silvery-leaved Crane's-bill.*

Lin. ſpec. 954. *Reich.* 324. *amoen.* 4. 323. *Burm. ger.* 8. *Villars dauph.* 3. 375.

G. argenteum alpinum. *Bauh. pin.* 318. *Pluk. phyt. t.* 186. *f.* 3.

G. longius radicatum. *Pona bald. t.* 342. *Cluſ. hiſt.* 2. 342. *Segu. veron.* 1. 471. *t.* 10.

G. argenteum montis Baldi. *Bauh. hiſt.* 3. 474. *Raii hiſt.* 1061. *n.* 30.

Petals emarginate, leaves ſubpeltate, ſeven-parted, trifid, tomentoſe-ſilky.

17. Geranium maculatum. *Spotted Crane's-bill.*

Lin. ſpec. 955. *Reich.* 324. *Gron. virg.* 2. 101. *Burm. ger.* 17. *Dill. elth.* 158. *t.* 132. *f.* 159. *Raii hiſt.* 3. *app.* 245. *n.* 18.

Stem dichotomous, erect; leaves five-parted, gaſhed, the uppermoſt ſeſſile.

18. Geranium pratenſe. *Meadow Crane's-bill.*

Lin. ſpec. 954. *Reich.* 324. *fl. ſuec. n.* 618. *hort. cliff.* 344. *n.* 6. *Gærtn. fruct.* 384. *t.* 79. *Burm. ger.* 16. *Hudſ. angl.* 302. *Wither. arr.* 728. *Curtis lond.* 4. *Lightf. ſcot.* 368. *Relh. cant. n.* 498. *Hall. helv. n.* 931. *Scop. carn. n.* 852. *Pollich pal. n.* 648. *Leers herborn. n.* 537. *D'Aſſo arrag.* 634. *Krock. ſileſ. n.* 1113.

G. batrachoides, Gratia Dei germanorum. *Bauh. pin.* 318.

G. batrach. *Ger.* 797. 2. *emac.* 943. 1. *Bauh. hiſt.* 3. 475. *Raii hiſt.* 1061. *n.* 33. *ſyn.* 360. *Petiv. brit. t.* 65. *f.* 7. *Mor. hiſt. ſ.* 5. *t.* 16. *f.* 14. *Matth.* 857. *Lob. ic.* 1. 659. 2.—flore purpureo. *Park. parad.* 228. *t.* 227. *f.* 5.

G. quintum. *Fuchſ. hiſt.* 208.

G. 3. batrach. majus. *Cluſ. hiſt.* 2. 100. 1.

Leaves ſubpeltate, many-parted, wrinkled, acute, petals entire.

[19. Geranium paluſtre. *Marſh Crane's-bill.*

Lin. ſpec. 954. *ſyſt.* 617. *Reich.* 323. *amoen.* 4. 323. *Burm. ger.* 13. *Pollich pal. n.* 647. *Leers herborn. n.* 536. *Fl. dan. t.* 596. *Krock. ſileſ. n.* 1112.

G. batrachoides paluſtre, flore ſanguineo. *Dill. elth.* 160. *t.* 134. *f.* 161.

G. ſanguineum majus. *Beſl. eyſt. vern.* 1. *t.* 9. *f.* 2.

Peduncles very long, declined, leaves five-lobed, gaſhed, petals entire.

20. Geranium aconitifolium. *Aconite-leaved Crane's-bill.*

L'Herit. geran. n. 26. *t.* 40. *Ait. hort. kew.* 2. 435.

G. rivulare. *Villars dauph.* 3. 372. *t.* 40.

Leaves ſubpeltate, ſeven-parted, petals entire, veiny-lined.]

21. Geranium ſylvaticum. *Wood-Crane's-bill.*

Lin. ſpec. 954. *Reich.* 323. *fl. lapp. n.* 266. *ſuec. n.* 617. *hort. cliff.* 344. *n.* 7. *Burm. ger.* 12. *Hudſ. angl.* 302. *Wither. arr.* 727. *Engl. bot.* 121. *Hall. helv. n.* 932. *Scop. carn. n.* 851. *Leers herborn. n.* 535. *Gunn. norv. n.* 73. *Fl. dan. t.* 124. *Krock. ſileſ. n.* 1111. *Villars dauph.* 3. 373.

G. paluſtre. *Roſe elem. app.* 441. *t.* 1.

G. batrachoides folio aconiti. *Bauh. pin.* 317.

G. batrach. *Ger.* 797. 1.—montanum. *Raii hiſt.* 1062. *n.* 34.

G. batrach. alterum. *Ger. emac.* 942. 2.

G. 2. batrach. minus. *Cluſ. hiſt.* 2. 99. 2.

Leaves ſubpeltate, five-lobed, gaſh-ſerrate, ſtem erect, petals emarginate.

22. Geranium pyrenaicum. *Mountain Crane's-bill.*

Lin. ſyſt. 617. *Reich.* 320. *mant.* 97 & 257. *L'Herit. geran. n.* 31. *Ait. hort. kew.* 2. 436. *Hudſ. angl.* 302. *Wither. arr.* 729. *Curtis lond.* 3. 42. *Burm. ger.* 27. *Ger. prov.* 434. *n.* 12. *t.* 16. *f.* 2. *Villars dauph.* 3. 376.

G. perenne. *Hudſ. angl. ed.* 1. 265. *Mill. dict. n.* 11.

Leaves rounded, five-lobed or three-lobed, gaſhed, petals two-lobed.

**** *Peduncles two-flowered, annual.*

[23. Geranium molle. *Common Crane's-bill* or *Dove's-foot.*

Lin. ſpec. 955. *ſyſt.* 617. *Reich.* 326. *Burm. ger.* 21. *Hudſ. angl.* 303. *Wither. arr.* 731. *Curtis lond.* 2. 50. *Lightf. ſcot.* 370. *Hall. helv. n.* 939. *Scop. carn. n.* 850? *Pollich pal. n.* 651. *Leers herborn. n.* 539. *Fl. dan. t.* 679. *Krock. ſileſ. n.* 1118. *Villars dauph.* 3. 377.

G. columbinum villoſum petalis bifidis. *Vaill. par.* 79. *t.* 15. *f.* 3.

G. columbinum. *Ger.* *Raii hiſt.* 1059. 19. *ſyn.* 359. 10.

Peduncles and floral leaves alternate, petals bifid, calyxes awnleſs, ſtem ſomewhat erect.

24. Geranium rotundifolium. *Round-leaved Crane's-bill.*

Lin. ſpec. 957. *ſyſt.* 618. *Reich.* 328. *fl. ſuec. n.* 621. *hort. cliff.* 344. *n.* 9. *Burm. ger.* 20. *Hudſ. angl.* 303. *Wither. arr.* 732. *Engl. bot.* 157. *Hall. helv. n.* 941. *Scop. carn. n.* 846. *Leers herborn. n.* 542. *Krock. ſileſ. n.* 1121. *Villars dauph.* 3. 379.

G. fol. malvæ rotundo. *Bauh. pin.* 318.

G. alterum. *Fuchſ. hiſt.* 205.

G. fol. rotundo, &c. *Bauh. hiſt.* 3. 473.

Pes columbinus. *Dod. pempt.* 61. 2.

Petals almoſt entire, equal to the calyx, which is ſomewhat awned; leaves kidney-ſhaped, lobed, gaſhed, ſinuſes glandular.

25. Geranium puſillum. *Small-flowered Crane's-bill.*

Lin. ſpec. 957. *ſyſt.* 618. *Reich.* 328. *mant.* 435. *Burm. ger.* 23. *Cavan. diſſ.* 202. *t.* 83. *f.* 1. *Hall. helv. n.* 940.

G. parviflorum. *Curt. lond.*

G. malvæfolium. *Scop. carn. n.* 847.

G. columbinum majus, flore minore cæruleo. *Raii hiſt.* 1059. *ſyn.* 358. *Petiv. brit. t.* 64. *f.* 4, 3. *Vaill. par. t.* 15. *f.* 1.

Petals emarginate, arils even, with hairs preſſed cloſe, ſtem ſubpubeſcent.

26. Geranium lucidum. *Shining Crane's-bill* or *Dove's-foot.*

Lin. ſpec. 955. *Reich.* 325. *fl. ſuec. n.* 620. *Hudſ. angl.* 304. *Wither. arr.* 730. *Lightf. ſcot.* 370. *Relh. cant. n.* 502. *Engl. bot. t.* 75. *Burm. ger.* 19. *Hall. helv. n.* 942. *Pollich pal. n.* 670. *Fl. dan. t.* 218. *Villars dauph.* 3. 375. *Krock. ſileſ. n.* 1116. *Bauh. hiſt.* 3. 481.

G. lucidum ſaxatile. *Bauh. pin.* 318.

G. ſaxatile. *Thal. herc.* 44. *t.* 5. *Park. theat.* 707. *f.* 9. *Ger. emac.* 938. *n.* 3. *Raii hiſt.* 1060. *n.* 25. *ſyn.* 361. *Petiv. brit. t.* 64. *f.* 12.

G. ſaxat. lucidum. *Mor. hiſt. ſ.* 5. *t.* 15. *f.* 6.

G. rotundifolium ſaxatile montanum. *Col. ecphr.* 1. 138. *t.* 137.

Calyxes pyramidal, angular, raiſed in wrinkles, leaves five-lobed, rounded.

27. Geranium columbinum. *Long-ſtalked Crane's-bill.*

Lin. ſpec. 956. *ſyſt.* 617. *Reich.* 327. *fl. ſuec. n.* 623. *Burm. ger.* 22. *Hudſ. angl.* 304. *With. arr.* 731. *Lightf. ſcot.* 371. *Engl. bot.* 259. *Hall. helv. n.* 938. *Scop. carn. n.* 849. *Pollich pal. n.* 653. *Leers herborn. n.* 540. *Krock. ſileſ. n.* 1119. *Villars dauph.* 3. 381.

G. columb. fol. diſſectis, pediculis florum longiſſimis. *Raii ſyn.* 359. *Vaill. par. t.* 15. *f.* 4. *Petiv. brit. t.* 64. *f.* 8.

Peduncles longer than the leaf, leaves five-parted, multifid, calyxes five-cornered, awned, arils ſmooth.

28. Geranium incanum.

Lin. ſpec. 957. *Reich.* 327. *amoen.* 6. 91. *Burm. ger.* 26. *f.* 26. *Pluk. phyt. t.* 186. *f.* 4.

Peduncles two-flowered, calyxes awned, petals entire, arils hirſute, leaves ſubdigitate, pinnatifid.

29. Geranium diſſectum. *Jagged Crane's-bill.*

Lin. ſpec. 956. *ſyſt.* 618. *Reich.* 327. *amoen.* 4. 282. *fl. ſuec. n.* 622. *Burm. ger.* 15. *Hudſ. angl.* 304. *Wither. arr.* 732. *Lightf. ſcot.* 371. *Relh. cant. n.* 503. *Curt. lond. Retz. obſ.* 1. 22. *Hall. helv. n.* 937. *Scop. carn. n.* 848. *Pollich pal. n.* 652. *Leers herborn. n.* 541. *Fl. dan. t.* 936. *Villars dauph.* 3. 380. *Krock. ſileſ. n.* 1120.

G. columbinum majus diſſectis foliis. *Ger. emac.* 938. *n.* 2. *Raii hiſt.* 1059. *n.* 21. *ſyn.* 359. *Petiv. brit. t.* 64. *f.* 6.

G. majus, fol. imis longis ad uſque pediculum diviſis. *Vaill. par. t.* 15. *f.* 2.

G. annuum minus fol. laciniatis & pediculo longiſſimo. *Mor. hiſt. ſ.* 5. *t.* 15. *f.* 3.

Peduncles ſhorter than the leaf, leaves five-parted, trifid and multifid, petals emarginate, arils villoſe.]

30. Geranium carolinianum. *Carolina Crane's-bill.*

Lin. ſpec. 956. *Reich.* 326. *mant.* 434. *Burm. ger.* 24. *Gron. virg.* 101. 1. *Retz. obſ.* 1. 23. *Dill. elth.* 162. *t.* 135. *f.* 162.

Leaves five-parted, gaſhed, calyxes awned, petals emarginate, arils hirſute.

31. Geranium bohemicum. *Bohemian Crane's-bill.*

Lin. ſpec. 955. *Reich.* 324. *amoen.* 4. 323. *Burm. ger.* 24. *cent.* 176. *Krock. ſileſ. n.* 1117. *Dill. elth.* 159. *t.* 133. *f.* 160.

G. bohemicum batrachoides annuum. *Raii hiſt.* 1063. 39. *Mor. hiſt. ſ.* 5. *t.* 15. *f.* 1.

Petals emarginate, arils rough with hairs, cotyledons trifid, with the middle cleft truncate.

[32. Geranium robertianum. *Stinking Crane's-bill,* or *Herb Robert.*

Lin. ſpec. 955. *ſyſt.* 617. *Reich.* 325. *mat. med.* 165. *fl. ſuec. n.* 619. *Burm. ger.* 18. *Hudſ. angl.* 305. *Wither. arr.* 729. *Curtis lond.* 1. 52. *Lightf. ſcot.* 369. *Relh. cant. n.* 504. *Hall. helv. n.* 943. *Scop. carn. n.* 845. *Pollich pal. n.* 649. *Fl. dan. t.* 694. *Krock. ſileſ. n.* 1115. *Villars dauph.* 3. 373. *Blackw. t.* 480.

α. G. robertianum primum. *Bauh. pin.* 319. *Ger.* 794. & 800. 5. *emac.* 939 & 945. 5. *Dod. pempt.* 62. *Lob. ic.* 1. 657. 2. *Raii hiſt.* 1038. *n.* 17. *ſyn.* 358. *Petiv. brit. t.* 55. *f.* 5. *Mor. hiſt.* 3. 5. *t.* 15. *f.* 11.—murale. *Bauh. hiſt.* 3. 480.—vulgare. *Park. theat.* 710. 8.

G. tertium. *Fuchſ. hiſt.* 206.

β. G. lucidum ſaxatile, foliis Geranii Robertiani. *Raii ſyn.* 358. *Petiv. brit. t.* 65. *f.* 6.

Leaves quinate and ternate, gaſhed, calyxes ten-angled.

DESCRIPTIONS, &c.

The genus of Geranium, as conſtituted by Linneus, having become very unwieldy by modern diſcoveries, it is found very convenient to divide it; and a diviſion is commodiouſly made from this remarkable circumſtance; namely, that in ſome ſpecies all the ten filaments are fertile, whilſt in others three or even five of them are caſtrated, as Linneus ſpeaks; that is, are deſtitute of anthers. Hence three genera are now conſtituted out of one; *Erodium,* with five fertile ſtamens only, *Pelargonium* with ſeven, and this, retaining the old name, with all the ten fertile. There are alſo other marks of diſcrimination recited in their reſpective eſſential characters. Theſe three artificial genera or families, however, form but one natural family, agreeing in their five-leaved calyxes, their five-petalled corollas, their pentacoccous roſtrated fruits, and their general habit and ſtructure. They alſo agree in their infloreſcence, the peduncles being curved downwards before flowering time, but when the flowers are about to open, the general peduncle firſt, and then each pedicel becoming erect.

1. Root perennial. Stems herbaceous, annual, diffuſely dichotomous, jointed, almoſt round and ſmooth. At the diviſions on each ſide is a lanceolate acuminate ſtipule. Leaves oppoſite, five-parted, divided into unequally pinnatifid acute ſegments. Peduncle longer than the leaves, from the axils, with two bractes at top. Calycine leaflets ſomewhat hirſute, with ſhort awns. Petals pale purpliſh, without any ſtreaks, ſcarcely longer than the calyx, either quite entire, or ſlightly emarginate[a].]

Native of Siberia. Cultivated before 1768 by Mr. Miller, who received the ſeeds from Linneus. It flowers in June.

2. [Root perennial, ſomewhat woody. The whole plant ſet with white ſpreading hairs. Stems a foot or more in height, lax, ſpreading, branched, round, jointed, ſwelling at the joints. Leaves oppoſite, deeply lobed and cut, ſometimes ſeven-parted, the ſegments linear, the upper ſurface rough, the lower hairy, the edge alſo is hairy and entire. Peduncles axillary, much longer than the leaves, hairy, with a joint and two ſmall bractes more than half way down. Calycine leaflets oval, with membranaceous reddiſh edges, and terminated by a ſhort red awn. Petals obcordate, very large, pale red, with deeper veins, hairy at the baſe. The whole plant frequently turns red or purple after flowering[b].

Native of many parts of Europe, in thickets and rocky paſtures, flowering moſt part of the ſummer, and often introduced into gardens as an ornamental plant.]

β. Miller inſiſts that the Lancaſhire Bloody Crane's-bill is a diſtinct ſpecies, the plants which he raiſed from ſeeds having always continued the ſame. The ſtalks are ſhorter, and ſpread flat on the ground; the leaves are much leſs, and not ſo deeply divided; and the flowers are much ſmaller, of a pale colour, marked with purple. It grows naturally in Lancaſhire and Weſtmoreland.

[There are other varieties of this ſpecies. One is mentioned by Ray, with larger, paler leaves, more deeply divided. And a ſecond, in Engliſh Botany, ſent by Mr. Davall from Switzerland; which has two flowers and four bractes from each joint, the calyx awned, the petals heart-ſhaped, crimſon, veined, turning blue in decay, the ſeed-caſes nearly globoſe, briſtly at their ſummit, and the beak downy. The ſtem, flower-ſtalks, calyx and back of the leaves are clothed with white ſlender ſpreading hairs, the upper ſide and margin of the leaves with ſhort depreſſed briſtles.

3. This is a low ſucculent plant. Root ſimple, ſcarcely fibrous. Stem ſuffruticoſe, erect, branched, fenced all round with broad, ſmooth, irregular knots

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[a] Jacquin.

[b] Linn. Engl. bot. Wither. Stokes, Woodw. Mſs.

or tubercles, from the centre of which ariſes a very long, ſharp, black ſpine. Leaves oppoſite, ſubſeſſile, wedge-ſhaped, reflex, ſinuate-crenate. Flowers ſolitary, peduncled. Calyx awned. Corolla purple, ſpreading, larger than the calyx; petals quite entire. Native of the Cape of Good Hope [c].

4. This is allied to Geranium glaucum (Pelargonium glaucum). Native of the Cape of Good Hope. Obſerved by Thunberg [d].

5. The whole plant is remarkably ſmooth; whence it had originally the name of *lævigatum*. From a thick root, ariſes a very ſhort ſtem; the thickneſs of a finger and ſucculent, whence ſpring branches two feet long, with very long leafleſs internodes. Root and ſtem-leaves numerous, ſubpeltate-palmate, five-lobed, lobes pinnate, pinnules gaſhed, having little notches ending in a very ſhort awn: petioles longer than the leaves, thick, red, declining: ſtipules membranaceous, reddiſh, kidney-form. Upper leaves oppoſite, on petioles gradually ſhorter, ſubhaſtate-three-lobed; lobes pinnate, acute, the middle one longeſt: ſtipules ſhort, ovate, concave. Flowers in the forks, and at the ends of the branches, on erect peduncles. Involucre four-leaved; leaflets ovate, ſhort. Calyx ten-ſtreaked, awned. Corolla pale blue, ſpreading, an inch and half in diameter; petals quite entire. Capſules ſmooth [e].

Native of Madeira. Introduced by Mr. Francis Maſſon in 1778. It flowers from may to ſeptember [f].

6. Root perennial, the thickneſs of a finger, becoming woody, dark purple on the outſide, round, ſingle or branched, having many long, round, thickiſh fibres. Hence ſprings a bundle of leaves, and ſeveral almoſt upright ſtems or rather ſcapes. Theſe are all very ſoft and ſmooth, like the leaves of Marſh Mallow, with a very ſhort cloſe down. Moſt of the leaves are large ſubpeltate-ſeven-parted, on very long petioles; lobes oblong, a little narrowed towards the baſe, ſerrate-toothed, the edges tinged with pale red; the petiole round, ſtrong, erect; as are alſo the ſcapes, which are ſomewhat higher than the leaves, ſilky-tomentoſe, quite ſimple, leafleſs, terminating in two peduncles, or elſe ſimply two-flowered. Bractes two, gaſh-multifid, at the foot of the peduncles: and others at the pedicels which are ſimple, entire, ſeſſile, and form a ſort of involucre. Flowers large, elegant, deep red [g],] or bright purple. The whole plant, when rubbed, emits an agreeable odour. [Native of Italy. Cultivated in the botanic garden at Oxford in 1658. It flowers in may and june.

7. Native of the Cape of Good Hope, where it was obſerved by Mr. Francis Maſſon. Introduced in 1787. It flowers in may and june [h].

8. Herbaceous. Stems filiform, ſomewhat knotty, having briſtle-ſhaped ſcales at the knots. Lower leaves ſcattered, proſtrate, on long petioles, five-parted, multifid, hoary underneath, with linear ſegments. Peduncles ſcattered, either oppoſite to the petioles or axillary, long, with briſtle-ſhaped bractes, either all two-flowered, or elſe the upper ones four-flowered. Calyxes hairy. Beaks ſhort [i]. Native of the Cape of Good Hope. Cultivated in 1704, by the Dutcheſs of Beaufort [k].

9. Root tuberous. Plant low, ſcarcely branched. Leaves petioled, divided into ſix larger ſegments, which are unequally ſubdivided into linear obtuſe ſegments; at top, where the peduncles ſpring forth, ſubſeſſile. Flowers very abundant, terminating. Calyx awned [l].—Native of Italy and Sileſia. Cultivated in 1596, by Gerarde. It flowers in may [m].

10. Stems upright, nearly cylindrical, from eighteen inches to two and even three feet in height, below woolly, and having a few long ſhining hairs on them; joints large, commonly tinged with red. Leaves ſoft, the younger ones ſilky, ribbed; the lower on long petioles in pairs, the upper ſolitary; lobes moſtly five, unequally toothed, the lateral ones lobed: the lower leaves have frequently ſix or ſeven lobes, and the uppermoſt only three or four. Peduncles very ſlender. Bractes flaccid, yellow, ovate-lanceolate, at the baſe of each peduncle. Calyx ſoft, thick ſet with ſhort hairs terminated by little globules, interſperſed with a few long woolly hairs; the leaflets are marked with three lines, and terminated by little blunt callous ſubſtances. Petals ovate, ſomewhat five-cornered, acuminate, waved at the edge, blackiſh purple; ſhining; claws white; marked with five lines, and woolly. Filaments purple, broad and woolly at the baſe; ſlightly united by means of five glands. Anthers whitiſh, with purple lines. Pollen greeniſh yellow. Germ woolly. Style green; ſhorter than the ſtamens till the time of flowering. Arils hairy. Seeds oblong-ovate [n]. Native of Switzerland, Hungary, Styria, England about Clapham and Ingleton in Yorkſhire, Tovel near Maidſtone.

11. Linnæus ſeparates this unwillingly from G. phæum, with which it agrees in many circumſtances, and particularly in having the whole corolla ſpread out and dark coloured. It differs, however, in having the leaves rigid, the corolla more reflex and ſmaller, the petals ſuborbiculate, mucronate, quite entire, flat, the peduncles not ſolitary, two-flowered; but two diſtinct. Native of the South of Europe [o].

12. Stem a foot high, dichotomous or bifid, patulous, pubeſcent. Upper leaves alternate, five-lobed, wrinkled, tomentoſe, not ſpotted. Flowers drooping, on peduncles oppoſite to the leaves. Calyx awnleſs. Petals red, ſomewhat gaſhed, not longer than the calyx, reflex, gaping at the baſe. Stamens as long as, or longer than the corolla, nodding. Anthers yellow, with a brown edge. Native of Italy [p]. Cultivated in 1758, by Mr. Miller.

13. This is allied to the two laſt. The ſtem is the ſame; the lower leaves are conjugate, the upper ones ſolitary, narrower, deeply ſeven-cleft, with trifid ſerrate lobes. Stipules hirſute, green; thoſe of the ſtem large, on the petioles ſmall. Flower much larger, flat; the petals marked with a very ſmall ſtar, acuminate, broad, perfectly flat, elegantly plaited and ſerrate at the edge, pale blue (gris de lin) with a livid centre. Root thick, woody, rufous. Native of Switzerland, about Aigle, &c. [q]. Introduced in 1775, by Drs. Pitcairn and Fothergill.

14. This is an herbaceous plant, having knobs like little bulbs at the origin of the branches and peduncles; whence the name. Lower leaves petioled, three-lobed, ovate-acuminate, ſerrate; the upper ones ſmaller, ſubſeſſile, the middle ſegment larger than the others. Peduncles axillary, very long, ſimple. Calyx ſtreaked, awned. Corolla purple. Capſules ſmooth [r].

Stems ſmooth, ſhining, ſwelled at the joints. Lower leaves five-lobed, ſtem-leaves three-lobed, oppoſite; lobes lanceolate, divaricate, entire at the baſe, irregularly ſerrate upwards, each marked with three ſtrong nearly parallel nerves, and cloathed with a few ſhort ſtiff hairs ariſing from glands. Stipules and bractes alike, ſmall and pointed. Peduncles ſhort. Leaflets of the calyx awned, ſmooth. Petals red, obſcurely and regularly crenate [s].

Native of Dauphiné and the mountains of Cumberland, flowering in july and auguſt.]

15. Root perennial, ſending up many branching ſtalks a foot and half high. Leaves light green, thoſe on the lower part of the ſtalk have five lobes, and ſtand upon long foot-ſtalks; thoſe on the upper part have but three lobes, ſit cloſer to the ſtalks, and are ſharply indented on the edges. Peduncles long and ſlender. Petals obtuſe, deeply indented at top, of a dull white, finely reticulated with many purple veins. [The lobes of the leaves are gaſhed, and have a ferruginous or purpliſh brown ſpot at their baſe. Calyxes awned [t].

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[c] Cavanilles, Burm.

[d] Linn. ſuppl.

[e] Cavanilles.

[f] Hort. kew.

[g] Jacquin.

[h] Hort. kew.

[i] Burm.

[k] Hort. kew.

[l] Burm.

[m] Hort. kew.

[n] With. Woodw. Mſs. Haller.

[o] Linn. mant.

[p] Ibid.

[q] Haller.

[r] Burman.

[s] Woodw. Mſs.

[t] Linn. amoen.

Native of Italy. Cultivated in 1629[w]. It flowers in may and june.]

16. Root perennial, thick. Leaves on long petioles, ſilvery and ſhining. Flower-ſtalks four or five inches high, with one or two ſmall leaves on them, like thoſe below, but ſeſſile; and terminated by two pretty large pale flowers, with entire petals that ſpread open flat. It flowers in june. [Native of monte Baldo, and Dauphiné.]

17. Root perennial. Stems ſeveral, about a foot high, or more, dividing by pairs; from the middle of the diviſions come out the peduncles, which are pretty long and naked, each ſuſtaining two pale purple flowers, with entire petals. It flowers in june. Native of Carolina and Virginia. [Cultivated in 1732, by James Sherard, M.D.[x]]

18. Root perennial, ſending up many ſtalks, which riſe near three feet high, [forked, tinged more or leſs with red; hairs on the upper branches white, terminated by minute dark red globules. Leaves on long foot-ſtalks, ſeven or five-lobed, theſe again lobed, the latter deeply toothed, hairy, marked beneath with ſtrong veins; diviſions of the upper leaves almoſt linear. Bractes four, lanceolate, acute. Flowers moſtly two, on very ſhort downy peduncles. Calycine leaflets lanceolate, ribbed, membranaceous at the edges, thick ſet with fine white hairs tipt by ſcarlet globules, and ending in an awn. Petals very large, inverſely ovate, marked with from ſeven to nine whitiſh lines, and a little hairy at the baſe. Filaments very broad, and ſomewhat concave at the baſe; the anthers are purple, and the pollen is purple[y].] The common colour of the petals is a fine blue, but it varies to white, and ſometimes to variegated or ſtriped. The flowers appear in may and june. Native of meadows, in moſt parts of Europe.

19. The branches of this are extremely divaricated, bifariouſly and obtuſely angular. The petals are villoſe at the baſe, and are marked with three brown nerves.—It may be diſtinguiſhed from G. ſylvaticum (n. 21.), which it reſembles very much in the leaves, by the ſuperior length of the peduncles, which are alſo recurved before the flowers open, and are not erect, but declined; the petals likewiſe are entire, not emarginate.—Native of Germany, Ruſſia, Denmark[z]. Cultivated in 1732, by James Sherard, M.D.[a]

20. Native of Switzerland and Dauphiné. Introduced in 1775, by Drs. Pitcairn and Fothergill. It flowers in may[b].

Stems ſmooth, ſcarcely a foot high, forked. Lower leaves ſeven-lobed or ſeven-parted, on foot-ſtalks two inches long; upper five-lobed or five-parted, ſubſeſſile; uppermoſt quite ſeſſile, all pubeſcent on both ſides, ſubdivided, and the ſubdiviſions toothed: they are ſtrongly veined underneath. Stipules in pairs at the origin of each branch. A pair of bractes alſo to each peduncle, which is downy. Calycine leaflets ribbed, hairy, awned. Petals white, or ſlightly tinged with pale purple, marked with dark purple lines. Anthers violet. The ends of the calyx, the bractes, and the upper part of the peduncles are alſo purple.

21. Stems two or three feet high, covered with reflexed hairs, much branched. Lower leaves ſeven-lobed, middle five-lobed, upper three-lobed, ſeſſile, all ſlightly hairy, pale beneath, and veiny; the ſegments terminate in ſmall fleſhy glands. Peduncles ſometimes with more than two flowers. Bractes four, awl-ſhaped, ſmall. Calycine leaflets ribbed, membranaceous at the edge, mucronate; hairs on theſe, the peduncles, and the edges of the leaves, ending in ſmall globules. Petals large, purple, (ſometimes white, or variegated with white) ſlightly notched at the end, a little woolly at the baſe. Stamens all nearly equal. Aril hairy, with a brown elevated keel, but not rugged[c].

Native of mountainous woods and thickets in many, particularly the northern parts of Europe. With us in Durham, Weſtmoreland, Cumberland, Lancaſhire and Yorkſhire. About Ayſgarth Force, Wenſly dale; near Hales Owen in Shropſhire; Holt wood in Leziate, near Lynn, Norfolk, &c. It flowers in june and july.

22. This ſpecies is twice as large as the common ſort, (n. 23.) and always nearly upright. Stem hairy, forked twice or thrice. Leaves hairy; the lower generally ſeven-lobed, theſe again trifid, with rounded or blunt diviſions, the middle one frequently crenate. The upper leaves are moſtly three-lobed, the lobes trifid, entire, the ſegments more acute than in the lower leaves, and the lobes more patent; they are often red at the edge. Peduncles ſolitary, from the forks, above from the boſom of the leaves, than which they are longer. Bractes four, acute. Calycine leaflets broad and ſhort, terminated by a red gland. Petals as long again as the calyx, purple, deeply cloven, the ſegments roundiſh and entire. The five outer filaments are ſhorter than the other five, and have abortive anthers. Aril even, ſharply keeled, ſcarcely pubeſcent[d].

Native of the South of France, the Pyrenees, and England. Near London about Chelſea, Brompton and Batterſea; near Enfield, Oxford, Bingley and Keighley in Yorkſhire.

23. Stems procumbent, round, reddiſh, from nine inches to a foot in length, villoſe, branched. Root-leaves roundiſh, hoary, and veiny underneath, deeply divided into ſeven ſegments, which are jagged: ſtem-leaves alternate, divided into fewer, narrower and more pointed ſegments. Stipules at each joint four, membranous and withering. Peduncles the length and form of the petioles, oppoſite to them, and bifid: pedicels nearly three times ſhorter, with ſmaller ſtipules, ſome of the hairs on which appear glandular when viewed with a glaſs. Calycine leaflets ovate, three-ribbed, hairy, unequal, terminated by a reddiſh and ſomewhat blunt point. Petals purple, obcordate, a little longer than the calyx; with ſmall claws edged on each ſide with hairs. Filaments unequal, broad at bottom, not perceptibly united. Anthers blue. Style with glandular hairs. Seeds ſmooth, covered with a wrinkled aril.

G. molle when growing detached is procumbent, but among other plants it is drawn upright. It varies much in ſize, and the flowers vary in colour through many gradations of purple to pale red and white[e].

The peduncles alternating with the floral leaves, and the ſtem and branches cloathed with long ſoft hairs ſtanding at right angles with the ſtalk, ſufficiently diſtinguiſh this from the rotundifolium, with which it is frequently confounded[f].

It is the moſt common of all our Geraniums, on dry banks, under walls, in corn fields, and in paſtures: beginning to flower in april, and continuing through the ſummer.

24. Stems much branched, ſtraggling, but ſcarcely proſtrate. Leaves oppoſite. Peduncles alternate on the ſtem, and ariſing from the axil of a leaf, which is always ſmaller, and on a ſhorter foot-ſtalk than its oppoſite. Stem and branches covered with a very ſhort down, which feels extremely ſoft like velvet, when drawn through the fingers. The leaves are rounder, and of a paler colour; the ſeeds are dotted, ſo as to appear reticulated. Hairs on the aril ſpreading. Theſe marks diſtinguiſh it from the foregoing[g].

The filaments are clearly diſtinct at the baſe. The petals are fleſh-coloured or purple, varying to white, emarginate or obcordate. Mr. Woodward does not think that the diviſion of the petals is to be at all depended on. When freſh gathered it has a pretty ſtrong ſcent of muſk, but it ſoon goes off[h].

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[w] Hort. kew. [x] Ibid. [y] Wither. & Woodw. Mſſ.
[z] Linn. [a] Hort. kew. [b] Ibid.
[c] Wither. Woodw. Mſs. Engl. bot.

[d] Wither. Stokes, Curtis, Engl. bot. [e] Curtis.
[f] Woodw. Mſs. [g] Ibid. & Engl. bot.
[h] Withering.

On walls, roofs, banks, and in ſandy paſtures, about Iſlington, Hackney, Batterſea, Wandſworth, Mortlake, Kew, &c. near London; Church Bramton in Northamptonſhire; about Bath and Briſtol; in Suffolk common.

25. Stems ſpreading, about a foot long, pale green or ſometimes reddiſh, very ſlightly downy, branched. Leaves roundiſh, ſeven-lobed; lobes trifid, obtuſe, ſome of them more deeply divided, the ſinuſes rather acute; veiny, villoſe, ſoft, pale green; the root-leaves on very long petioles, the ſtem-leaves oppoſite, unequal, nearly as long as the peduncles; their lobes more acute. Stipules lanceolate, broad at bottom, red, ſhining; ſegments ſharp, edged with hairs. Flowers very ſmall, purpliſh blue, on peduncles from the axils, about an inch long. Bractes like the ſtipules, but ſmaller. Calycine leaflets ſtriated, covered with hairs which point upwards, white on the edge, the two outer ones wider than the reſt. Corolla a little larger than the calyx, bell-ſhaped and open; petals obcordate, emarginate. Filaments five longer, with ovate, blue anthers; five ſhorter and ſterile. Seeds kidney-ſhaped, ſmooth, reddiſh; aril pale brown, even, with white hairs preſſed cloſe to it.

It differs from the *molle* in having the leaves more divided, of a paler and more yellow colour; the flowers much ſmaller, of a bluer and leſs brilliant hue; the ſtems ſcarce perceptibly hairy, or but ſlightly pubeſcent: the leaves in general grow oppoſite, but frequently not ſo towards the top of the ſtem, and are more open behind: the fertile ſtamina are never more than five; and the aril is not tranſverſely wrinkled as in the *molle*, but comparatively ſmooth. It forms a larger tuft than the *molle*, and ſometimes varies with white flowers, as that does. It is alſo equally common in many places; particularly on the weſt ſide of London, in neglected gardens and fallow fields; flowering in june and july[i].

Probably ſmall varieties both of *molle* and *rotundifolium* have been taken for this. The figure, in the third edition of Ray's ſynopſis, by Dillenius, ſeems to be one of the latter. There are two ſpecimens in the Linnean herbarium, one of which is clearly ſo; the other appears to be diſtinct[k].

26. Stems and leaves ſmooth and ſhining as if varniſhed, whence its ſignificant trivial name; they are, however, ſlightly hairy. Leaves kidney-ſhaped, moſtly five-lobed, theſe again divided half way into three lobes, the middle one having uſually three notches, the ſide ones entire: it varies, however, from this diſpoſition. In rocky ſituations the leaves are only half an inch broad, and not ſo much divided. Flowers on ſhort ſpreading peduncles, with very minute bractes. Petals roſe-coloured, emarginate. The aril has ſeveral rugged longitudinal ribs, and is hairy at top. The whole plant is ſometimes red[l]. Native of moſt parts of Europe, on walls, roofs, banks, in rocky and ſhady places, and in a chalky ſoil among corn. It flowers from june to auguſt.

27. Slender, moſtly procumbent, with ſmall, rigid, cloſe-preſſed hairs. Leaves a little hairy on both ſurfaces, divided to the foot-ſtalk into ſeveral lobes, theſe again divided with linear ſegments. Stipules lanceolate, red, two on each ſide of the ſtem. Peduncles very long. Pedicels much divaricated. Calyx five-angled, very large and ſwelling; ſometimes hairy, membranous at the edges, terminated by ſhort awns reddiſh at the ends. Petals reddiſh blue, or pale purple, marked with three lines, emarginate, the little tooth between the lobes not very pointed. Anthers blue. Arils ſmooth, ſlightly keeled. Seed covered with minute punctures[m].

Native of moſt parts of Europe, in corn fields and paſtures, and under hedges. It flowers from june to auguſt.

28. The leaves reſemble thoſe of *Potentilla argentea*, ſome of them are five-cleft beyond the middle, and pinnatifid; others are digitate, with linear pinnatifid pinnas. The ſtipules are trifid. Native of the Cape of Good Hope[n].

29. Stalks many, about a foot long, ſpreading, roundiſh, pale green, here and there reddiſh, beſet with ſhort white hairs pointing downwards, jointed; with alternate, ſpreading branches. Leaves oppoſite, on long foot-ſtalks, divided to the baſe into five ſegments, and theſe again divided uſually into three (or three to ſix) ſmaller ones, which are uſually entire, but the middle one is ſometimes again ſubdivided; all of them are linear, but unequal, ſomewhat pointed, with hairs on both ſides pointing upwards, red on the edges and at the tip, the ſinuſes obtuſe: the ſegments of the root-leaves approach nearer to each other, and are blunter; foot-ſtalks ſpreading, a little flattened, hairy like the ſtalk. Stipules two-lobed, with a broad white baſe, the lobes ſemicordate, acuminate, red, ſhining, having a whitiſh line on the back, which together with the margin is edged with hairs. Flowers ſmall, purpliſh red, on peduncles ſhorter than the leaves. Bractes two, red, minute. Calycine leaflets three-ribbed, awned, beſet with glandulous hairs. Corolla a little ſhorter than the calyx; petals oblong-cordate, emarginate. Anthers nearly ovate, blue. Piſtil woolly, with glandulous hairs. Stigma reddiſh. Aril villoſe, with the ſame glandular hairs.

G. diſſectum can ſcarcely be miſtaken for any other; it is, however, not only diſtinguiſhed by its finely divided leaves, whence its trivial name, but by the flowers, which are uſually of a bright colour, being on ſuch very ſhort foot-ſtalks as to appear ſeſſile among the leaves; the petals alſo are uſually ſhorter than the calyx by the awns of the latter, which are unuſually long: the calyx and ſtyle are thickly covered with viſcid hairs, and the hairs on the ſtalk do not ſpread horizontally, as in many other ſpecies, but obviouſly point downwards. It varies greatly in ſize; alſo with fleſh-coloured and white flowers. Native of moſt parts of Europe, by road ſides, on banks, in fallow fields, and on the borders of paſtures, flowering in may and june till auguſt[o].]

30. This greatly reſembles common Dove's-foot Cranes-bill, but is ſmaller, and the branches are ſhorter: the flowers are very ſmall, of a pale blue colour. Seeds black, with ſhort erect beaks. Native of Carolina.

31. Stems many, branched. Leaves five-lobed, crenate, on long foot-ſtalks, and moſtly oppoſite. Flowers on long, ſlender, axillary peduncles. Corolla of a fine blue colour. Arils and beaks black. Native of Bohemia. [This, however, is doubtful. Cultivated in 1683, by Mr. James Sutherland. It flowers from june to auguſt[p].

32. Stems ſpreading, branched, blood-red, hairy, particularly in young plants. Leaves oppoſite, hairy eſpecially when growing in the ſhade, firſt three-lobed, the lobes again three-lobed, the lower ones diſtinct, the upper ones lengthened with confluent lobes, the jags terminated by a ſmall red ſpine. Stipules four at each joint, two on each ſide. Peduncles very long. Pedicels ſhort. Calycine leaflets ovate-lanceolate, nerved, hairy, ending in a long awn, the ten angles formed by the firſt and third outer leaves being each folded into three keel-like angles, the ſecond and fifth each into one, and the fourth into two; the angles become more evident as the ſeeds ripen. Petals roſe-coloured (varying to white) ſpreading and equal, the lamina ſomewhat heart-ſhaped, the claw long and linear, the middle part of it prominent, grooved, and ſpreading into three whitiſh nerves. Filaments not very evidently united at bottom; anthers red or purpliſh, with yellow pollen. Style villoſe: ſtigmas fine crimſon, a little turned back. Seeds brown, ſmooth, ovate, flattened on one ſide, in a wrinkled aril.

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[i] Curtis.
[k] Woodw. Mſs.
[l] Ibid. & Engl. bot.
[m] Wither. Woodw. Mſs. Engl. bot.
[n] Linn. amoen.
[o] Curtis.
[p] Hort. kew.

The whole is beſet with pellucid hairs, but becomes ſmoother as the plant grows older. It is commonly red at the joints, and the whole plant is frequently red. It has a diſagreeable rank ſmell when bruiſed.

A decoction of Herb Robert has been known to give relief in calculous caſes. It is conſiderably aſtringent, and is given to cattle when they make bloody water, or have the bloody flux. Mr. Curtis aſks whether this practice may not originate from the old notion of ſignatures[q].

Native of all Europe, in woods, under hedges, in hollow trees, on walls and the roofs of houſes, among rubbiſh, and in ſtony places, flowering from april through the whole ſummer.

The name *Stock-bill* is ſet down in Dr. Withering's arrangements, which is probably a corruption of *Stork-bill*.

β. In the variety which occurs near Swanning in Dorſetſhire, and on the ſhore of Selſey iſland, the whole plant is ſhining; the leaves ſmaller, and more deeply divided.]

PROPAGATION AND CULTURE.

The annual ſorts of Geranium may be increaſed by ſeeds, and if theſe be permitted to ſcatter, the plants will come up without any farther care. The perennial ſorts, which are more numerous, may be increaſed the ſame way, or by parting the roots in autumn. They may be planted in almoſt any ſoil or ſituation, and require no other culture but to keep them clean from weeds. Many of them, indeed, are common weeds, but even ſome of theſe have beauty enough to recommend them to a place in a garden, particularly the ſecond, eighteenth, twenty-firſt and twenty-ſecond ſpecies.

Moſt of the Erodiums alſo are hardy, and may be increaſed in the ſame manner; the annual ſorts by ſeeds, and the perennial by dividing the roots. Some of them, as the craſſifolium, incarnatum, glaucophyllum and chamædryoides, require the protection of a green-houſe. The ſeeds of the glaucophyllum ſhould be ſown on a moderate hot-bed in ſpring, and when the weather is warm, the plants ſhould be carefully tranſplanted on a ſheltered border.

[GERANIUM. See *Erodium*, *Grielum*, *Monſonia*, & *Pelargonium*.

GERARDIA. (*So named by Plumier in honour of John Gerarde, our old Engliſh botaniſt, author of the Herbal,* 1597 *folio, and a great cultivator of exotic plants, of which he publiſhed a catalogue in* 1596.)

Lin. gen. n. 747. *Reich.* 805. *Schreb.* 1004. *Plum.* 12. *Juſſ.* 119. Nigrina. *Mantiſs.* Melaſma. *Berg. cap. t.* 3. *Gærtn. t.* 55.

Claſſ. 14. 2. Didynamia Angioſpermia.

Nat. order of *Perſonatæ.—Scrophulariæ.* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-cleft, upright, ſharp, permanent.

COR. one-petalled, ringent: *tube* round, longer than the calyx: *upper lip* upright, blunt, flat, broader, emarginate: *lower lip* reflex, three-parted: *diviſions lateral*, emarginate; *middle* ſhorter, two-parted.

STAM. *Filaments* four, ſcarcely the length of the tube, two a little ſhorter. *Anthers* ſmall.

PIST. *Germ* ovate, ſmall. *Style* ſimple, ſhort. *Stigma* blunt.

PER. *Capſule* ovate, two-celled, two-valved, gaping at the baſe; *partition* contrary.

SEEDS ovate, ſolitary.

ESSENTIAL CHARACTER.

Cal. five-cleft. *Cor.* two-lipped: lower lip three-parted, the lobes emarginate, the middle ſegment two-parted. *Capſ.* two-celled, gaping.

SPECIES.

1. Gerardia tuberoſa. *Tuberous Gerardia.*
Lin. ſpec. 848. *Reich.* 3. 120. *Plum. ic.* 75. *f.* 2.
Leaves ſubovate, tomentoſe, repand, the length of the ſtalk.

2. Gerardia japonica. *Japoneſe Gerardia.*
Lin. ſyſt. 553. *Thunb. jap.* 251.
Leaves ovate, gaſh-pinnatifid, petioled, ſtalk ſimple.

3. Gerardia delphinifolia. *Larkſpur-leaved Gerardia.*
Lin. ſpec. 848. *Reich.* 3. 121. *amœn.* 4. 318.
Leaves linear, pinnatifid, ſtalk ſomewhat branched.

4. Gerardia ſcabra. *Rough Gerardia.*
Lin. ſyſt. 553. *ſuppl.* 279.
Hiſpid, ſcabrous; leaves oblong, pinnatifid.

5. Gerardia purpurea. *Purple Gerardia.*
Lin. ſpec. 848. *Reich.* 3. 121. *Gron. virg.* 1. 72. 2. 193. *Baniſt. virg.* 1926. *Pluk. mant. t.* 388. *f.* 1. (Digitalis)—Conf. *Pluk. phyt. t.* 12. *f.* 2.
Leaves linear.

6. Gerardia tubuloſa. *Long-tubed Gerardia.*
Lin. ſyſt. 553. *ſuppl.* 279.
Smooth; leaves linear, entire, ſharp; tube of the flower longer than the calyx.

7. Gerardia flava. *Yellow Gerardia.*
Lin. ſpec. 848. *Reich.* 3. 121. *Gron. virg.* 94. (Anonymos) *Pluk. mant. t.* 368. *amalth. t.* 389. *f.* 1. *Baniſt. virg.* 1926. (Digitalis).
Leaves lanceolate, pinnate-toothed, ſtalk extremely ſimple.

8. Gerardia pedicularia.
Lin. ſpec. 849. *Reich.* 122. *Gron. virg.* 68. (Pedicularis). *Pluk. mant.* 64. *Raii ſuppl.* 397. (Digitalis).
Leaves oblong, doubly-ſerrate, ſtalk panicled, calyxes crenate.

9. Gerardia glutinoſa.
Lin. ſpec. 849. *Reich.* 122. *Oſb. itin. t.* 9.
Leaves ovate, ſerrate, bractes linear, hiſpid.

10. Gerardia Nigrina.
Lin. ſyſt. 553. *ſuppl.* 278.
Nigrina viſcoſa. *Lin. ſyſt. edit.* 13. 167.
Melaſma ſcabrum. *Berg. cap.* 162. *t.* 3. *f.* 4.
Scabrous, leaves lanceolate, ſerrate at bottom, ſtalk four-cornered.

DESCRIPTIONS, &c.

Stalk upright. Leaves oppoſite. Flowers ſolitary, axillary, ſomewhat bell-ſhaped[a].

1. Root-leaves as on the ſpike. Bractes imbricate, one-flowered. Border of the corólla wheel-ſhaped. It may be doubted whether it be not of another genus[b].

Linneus recommends a farther examination of the fructification.—Native of South America.

2. Stalk villoſe. Leaves pinnate at the baſe, above gaſh-pinnatifid, villoſe; pinnas acute, ſerrate. Flowers axillary, peduncled, ſolitary. Peduncle many times ſhorter than the leaves. Corolla purpliſh.—It differs from *G. pedicularia* in having a ſimple ſtalk, peduncle ſhorter than the leaf, and gaſh-pinnatifid leaves, with ſerrate pinnas.—Native of Japan[c].

3. Stem a foot high, obtuſely four-cornered, upright, even, with few alternate branches. Leaves oppoſite, ſmooth. Flowers axillary, from the middle to the top of the ſtem, oppoſite, directed one way, on very ſhort peduncles. Calyx tubular, with five linear teeth the length of the calyx. Corollas oblong, with a gaping mouth, and a five-lobed rounded border, the two upper lobes ſhorter. Anthers twin, two having the ſpine of the baſe extended downwards, the other two having the ſpine parallel to the anther. Style the ſame length with the ſtamens. Stigmas blunt[d].—Annual. Native of the Eaſt-Indies.

4. Found at the Cape of Good Hope, by Thunberg.

5. Root annual. Stalks a foot high, filiform, either very ſimple, or brachiate, ſmooth. Leaves quite entire, oppoſite, but often alternate alſo. Flowers oppoſite, on one-flowered, filiform peduncles, or elſe ſeſſile. Calyxes ſmooth, ſmall, bell-ſhaped, five-toothed. Corollas very deep purple, either wheel-ſhaped or bell-ſhaped, or tubular; thus

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[q] Curtis & Withering.

[a] Juſſieu. [b] Ibid. [c] Thunberg. [d] Linn. amoen.

varying much in figure[e].—Native of North America.—It is the only ſpecies of this genus yet cultivated among us, and was introduced in 1772, by Samuel Martin, M. D. It flowers in july and auguſt[f].

6. Found at the Cape of Good Hope, by Thunberg[g].

7. Stalk a foot high or more. Leaves ſubpetioled (like thoſe of Lycopus or Jacea), gaſhed at the baſe like pinnate leaves with patulous ſinuſes. Spike terminating, lax, conſiſting of oppoſite large, yellow flowers. Anthers tending downwards into two thorns. There is no fifth ſtamen. Native of North America[h].

8. Corollas pubeſcent on the outſide, oblong, patulous. Teeth of the calyx crenate. It dries black, like a Pedicularis, and is allied to *P. triſtis*. Native of North America[i].

9. Stem roundiſh, upright; with ſhorter branches. Leaves petioled, ſharp, above an inch wide; deeply ſerrate, ſubvilloſe. Racemes terminating, ſolitary, compoſed of oppoſite flowers on very ſhort peduncles. Calyxes five-parted, ſharp, the uppermoſt diviſion largeſt. A filiform bracte or two, of the ſame length with the calyx, is cloſe to it, hiſpid like that, with glutinous hairs.—Native of China[k].

10. This was formerly made a diſtinct genus by Linneus, under the name of *Nigrina*; but he was afterwards of opinion that it could not be ſeparated from the Gerardias.—Native of the Cape of Good Hope[l].

GERASCANTHUS. See *Cordia*.

GERBERA. See *Arnica*.]

GERMANDER. See *Teucrium*.

GEROPOGON. (*From* Γέρων, *an old man, and* Πώγων, *a beard; from the whiteneſs of the ſeed-crown.*)

Lin. gen. n. 904. *Reich.* 983. *Schreb.* 1228. *Juſſ.* 170. *Gærtn. t.* 160.

Claſſ. 19. 1. Syngeneſia Polygamia Æqualis.

Nat. order of *Compoſitæ Semifloſculoſæ*, or Compound flowers, with ſemiflorets or ligulate florets only.—*Cichoraceæ*, Juſſ.

GENERIC CHARACTER.

Cal. *common* ſimple, many-leaved: *leaflets* lanceolate-ſubulate, keeled, upright, longer than the corolla.

Cor. *compound* ſubimbricate, uniform. *Corollules* hermaphrodite: *outer* as many as there are leaflets in the calyx; *inner* fewer, ſhorter.

Proper one-petalled, ligulate, truncate, five-toothed.

Stam. *Filaments* five, very ſhort. *Anther* cylindric, tubular.

Pist. *Germ* oblong. *Style* filiform, the ſame length with the ſtamens. *Stigmas* two, bowed back, filiform.

Per. none. *Calyx* oblong, upright, gaping.

Seeds of the *Ray* ſubulate, the ſame length with the calyx. *Down* with five patulous awns—of the *Diſk* ſubulate, ſhorter. *Down* feathered.

Rec. with briſtle-ſhaped chaffs: (naked, G.)

Obs. *There is a ſpecies with a calycled calyx.*

ESSENTIAL CHARACTER.

Cal. ſimple. *Recept.* with briſtle-ſhaped chaffs. *Seeds* of the diſk, with a feathered down—of the ray, with five awns.

SPECIES.

1. Geropogon glabrum. *Smooth Geropogon*, or *old man's beard.*
Lin. ſpec. 1109. *Reich.* 3. 611. *hort. upſ.* 243. (Tragopogon). *Jacqu. hort.* 1. *t.* 33. *Allion. pedem. n.* 845. *Raii ſuppl.* 149. *Gærtn. fruct.* 2. 374.
Leaves ſmooth.

2. Geropogon hirſutum. *Rough Geropogon.*
Lin. ſpec. 1109. *Reich.* 3. 611. *Allion. pedem. n.* 846.
Tragopogon gramin. fol. hirſutis. *Bauh. pin.* 275.
Leaves hairy.

[3. Geropogon calyculatum. *Perennial Geropogon.*
Lin. ſyſt. 709. *Reich.* 3. 611.
Tragopogon calyculatus. *Jacqu. hort.* 2. *t.* 106.
Calyxes calycled.

DESCRIPTIONS, &c.

Theſe plants have the ſame habit with Tragopogon and Scorzonera. The flowers in the two firſt ſpecies not yellow, but red: theſe are annual. The third ſpecies is perennial. All of them are natives of Italy.]

1. This has an upright ſtalk more than a foot high, with long graſs-like leaves. The ſtalk branches at top into two or three diviſions, each terminated by one fleſh-coloured flower. [The whole plant is ſmooth. Leaves narrow-enſiform, acuminate, ſeſſile. Calyx uſually ſeven-leaved. Seeds even, ſcarcely rough; the rays ſtiffly ſpreading, the middle ones erect[a].]

2. Stalk upright, a foot high. Leaves narrow. It ſeldom divides into branches, but is terminated by one flower.

[Theſe were cultivated by Mr. Miller in 1759.

3. Root perennial. Stems ſeveral, branched. Flowers terminating, nodding before they open. Calyx calycled, with numerous floſcules[b]. Leaves ſublinear, acuminate, the loweſt ſtem-leaves and the root-leaves channelled beneath, and hairy on both ſides, the upper ones flat, and a little hirſute only on the back. Stems aſcending, round, a foot and half high, villoſe and leafy. Peduncles almoſt leafleſs, ſtriated, pubeſcent, terminated by a ſingle flower. Each calyx has about eight leaves, lanceolate, acuminate, with a membranaceous edge. Fruiting calyx angular. Corolla yellow on both ſides. Receptacle naked. The ſeeds have a long, ſtiff, ſubplumoſe egret, yellow at the baſe, purple at top[c].

Introduced in 1774, by Joſeph Nicholas de Jacquin, M.D. It flowers in june[d]. The two others flower later, in july or auguſt.

PROPAGATION AND CULTURE.

See Tragopogon.

GESNERA. See *Geſneria*.]

GESNERIA. (*So named by Plumier in honour of Conrad Geſner of Zurich, the famous botaniſt and natural hiſtorian.*)

Lin. gen. n. 749. *Reich.* 807. *Gærtn.* 177. *Juſſ.* 165. *Browne* 262. Geſnera. *Plum.* 9. *Jacqu. amer.* 179. *Gen. Schreb. n.* 1006.

Claſſ. 14. 2. Didynamia Angioſpermia.

Nat. order of *Perſonatæ*.—*Campanulaceæ*. Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, ſuperior, five-cleft, ſharp, permanent.

Cor. one-petalled, incurved and recurved: *tube* thickiſh, with a contracted neck and funnel-form throat: *border* five-cleft, blunt; upper diviſions concave, three lower flat, ſpreading.

Stam. *Filaments* four, ſhorter than the corolla. *Anthers* ſimple.

Pist. *Germ* inferior, flatted. *Style* filiform, the ſame in ſituation and length with the ſtamens. *Stigma* capitate.

Per. *Capſule* roundiſh, and crowned with the patulous calyx, ſubbilocular: *partition* in the middle longitudinally interrupted.

Seeds extremely numerous, and very ſmall. *Receptacles* on each ſide faſtened to the partition.

Obs. *If the capſule be cut tranſverſely near the top, it appears to be one-celled; if through the middle, two-celled.* Swartz.

ESSENTIAL CHARACTER.

Cal. five-cleft, ſitting on the germ. *Cor.* incurved and recurved. *Capſ.* inferior, two-celled.

SPECIES.

1. Geſneria humilis. *Low Geſneria.*
Lin. ſpec. 851. *Reich.* 3. 124. *Plum. ic.* 133. *f.* 2.
Leaves lanceolate, ſerrate, ſeſſile; peduncles branched, many-flowered.

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[e] Linn. ſpec.
[f] Hort. kew.
[g] Linn. ſuppl.
[h] Linn. ſpec.
[i] Ibid.
[k] Ibid.
[l] Linn. ſuppl.

[a] Jacquin.
[b] Linn. ſyſt.
[c] Jacquin.
[d] Hort. kew.

[2. Geſneria acaulis. *Stemleſs Geſneria.*
Lin. ſpec. 851. *Reich.* 3. 124. *amœn.* 5. 400. *Swartz. obſ.* 227. *Brown. jam.* 262. 2. *Sloan. jam.* 1. 159. *t.* 102. *f.* 1. (Rapunculo affinis).
Leaves lanceolate-ovate, ſerrate, ſubpetioled, crowded at the end; peduncles three-flowered, ſhorter than the leaf.]

3. Geſneria tomentoſa. *Woolly Geſneria.*
Lin. ſpec. 851. *ſyſt.* 554. *hort. cliff.* 318. *Jacqu. amer.* 179. *t.* 175. *f.* 64. *pict.* 89. *t.* 261. *f.* 47. *Gærtn. fruct.* 2. 472. *Brown. jam.* 261. *Swartz. obſ.* 228. *Sloan. jam.* 1. 162. *t.* 104. *f.* 2. *Raii ſuppl.* 396. 3. (Digitalis).
Leaves ovate-lanceolate, crenate, hirſute, peduncles lateral, very long, corymbiferous.

4. Geſneria Craniolaria.
Swartz. prodr. 89. *Plum. gen.* 27. *t.* 137.
Craniolaria fruticoſa. *Lin. ſpec.* 861. *Reich.* 3. 141. *Mill. dict. n.* 2.
Leaves wedge-ſhaped, oblong, tooth-laciniate, peduncles terminating, corollas bell-ſhaped.

[5. Geſneria grandis.
Swartz. prodr. 89.
Leaves broad-lanceolate, very long, toothletted, rough-haired above, rugged beneath, peduncles terminating; ſtem arboreſcent.

6. Geſneria ſcabra.
Swartz. prodr. 89.
Leaves ovate-lanceolate, ſerrate, rugged, peduncles axillary, corollas cylindric, recurved.

7. Geſneria corymboſa.
Swartz. prodr. 89.
Leaves ovate, acute, ſerrate, ſcarioſe, ſharp, peduncles many-parted, flowers in corymbs.

8. Geſneria exſerta.
Swartz. prodr. 89.
Leaves ovate-lanceolate, crenate, ſmooth, peduncles three-flowered, genitals twice the length of the corolla, capſules ovate.

9. Geſneria calycina.
Swartz. prodr. 90.
Leaves lanceolate-ovate, acuminate, ſerrate, ſmooth, peduncles three-flowered, genitals longer than the corolla, calyxes bell-ſhaped, capſules cylindric.

10. Geſneria ventricoſa.
Swartz. prodr. 90.
Leaves elliptic, acuminate, crenate, ſmooth, peduncles four-flowered or thereabouts, ſegments of the calyx awl-ſhaped, elongated, corollas ventricoſe.

11. Geſneria pulchella.
Swartz. prodr. 90.
Cyrilla pulchella. *L'Herit. ſt. nov.* 147. *t.* 71. *Ait. hort. kew.* 2. 330.
Columnea erecta. *Lamarck. encycl.* 2. 66. *n.* 2.
Achimenes 2. *Brown. jam.* 271. *t.* 30. *f.* 1.
Herbaceous, leaves ternate, ovate, acute, ſerrate, villoſe, peduncles axillary, one-flowered.

12. Geſneria pumila.
Swartz. prodr. 90.
Stemleſs, leaves ovate-wedge-ſhaped, crenate, ſubſeſſile, peduncles ſubbiflorous, ſhorter than the leaves.

DESCRIPTIONS, &c.

Theſe are either herbs or ſhrubs. The flowers are on axillary peduncles, many together, and accompanied with bractes[a]. They are natives of South-America and the Weſt-Indies.

1. Root diffuſed, creeping. Stem branched, naked at bottom. Leaves aggregate at top, deciduous. Peduncles branched, three-flowered.]

This is of much humbler growth than the third ſpecies; the leaves are much ſmaller; and the flowers are deeper cut at their brims. It was found growing naturally by the late Dr. Houſtoun at Carthagena in New Spain. [Alſo by Sir Hans Sloane in Jamaica. Cultivated by Mr. Miller before 1733.

2. Stem round, woody, having a clay-coloured bark, with ſome furrows in it, riſing three or four inches high, having at the top very many oblong leaves, ſtanding very thick, without any order, on foot-ſtalks a quarter of an inch in length, covered with a reddiſh wool like moſs. They are ſeven inches long, and an inch and half broad near the farther end, whence they narrow to a point, and they alſo grow gradually narrower to the foot-ſtalk. From the axils come out ſmall peduncles, branched, ſuſtaining ſcarlet flowers an inch long, which are followed by a ſhort, fungous, cornered ſeed-veſſel, having no diſtinct cells, containing many ſmall, oblong yellowiſh ſeeds[b].

Browne calls it *ſmall tufted Geſneria, with ſcarlet flowers*; and obſerves that the ſtem is always ſimple, creeping along the rocks, and bearing a pretty large tuft of leaves at the extremity, with ſingle flowers ſpringing from each axil.

Swartz deſcribes the ſtem as very ſhort at firſt, but as it advances becoming frequently a foot in length, and in this ſtate covered with withered leaves and calyxes. The leaves are rugged and wrinkled. The calyx is five-parted; the parts linear, and very long. The limb of the corolla is contracted and five-notched. The filaments are nearly equal; the anthers roundiſh and connected. The germ is ovate; the ſtyle longer than the corolla. The capſule is covered with the calyx, is five-cornered, grooved and two-celled.

Native of Jamaica.]

3. This riſes with a ſhrubby ſtalk to the height of ſix or ſeven feet, dividing into two or three irregular branches, covered with a ruſſet wool. Leaves ſeven or eight inches long, and two and a half broad in the middle, having a ruſſet woolly midrib; they are placed on every ſide the branches without order, and on ſhort foot-ſtalks: towards the ends of the branches, at every joint, from the axils, come out the peduncles; they are naked, and nine inches in length, branching at the top into many ſmaller peduncles, each ſuſtaining a ſingle flower of a duſky purple colour. Capſule roundiſh, ſitting cloſe in the calyx, the diviſions of which riſe above it.

[Swartz deſcribes the ſtem as upright, a yard in height, ſuffruteſcent, round, wrinkled and hirſute. Leaves ſcattered towards the end of the ſtalk, on very ſhort petioles, ſpreading, acuminate, ſerrate, nerved and netted-veined, ſomewhat clammy, ſoftiſh, tomentoſe-hirſute, hoary underneath. Stipule roundiſh, revolute, crenate, tomentoſe. Peduncles erect, round, hirſute, clammy, forming a ſort of corymb at top, with unequal, ſubdivided pedicels. Corolla irregular, ſubcampanulate, gibbous at the baſe, and under the limb: the two upper ſegments approximate, ſo as to form one as it were that is bifid, arched in the middle, ſpotted on the inſide with yellow and dark purple; the three lateral ones are ſpreading, ovate, acute, the loweſt ventricoſe underneath; the tube is ſpotted within. The two anterior filaments are longer than the two others, and are bowed in towards the piſtil. Anthers convex. Style longer than the corolla. Stigma cut half way tranſverſely. Capſule crowned with the calyx, two-celled:—according to Gærtner, one-celled, opening at the top with an oval hole, of an ovate-globular ſhape, covered with the tomentoſe calyx faſtened cloſe to it, and ſerving as a bark, the teeth of it forming a ſort of crown above it: there are two fungous oppoſite receptacles, faſtened to the ſide of the capſule, ſeparated near the axis, and dividing the capſule into two cells communicating with each other. This plant bears ſome affinity to the Saxifrages in the ſituation of theſe receptacles, and in the opening of the capſule.

This is called by Browne, *hairy erect Geſneria, with open flowers.* It is a native of Jamaica, and was cultivated by Mr. Miller in 1759[c].]

4. This ſort grows naturally at the Havannah, and in ſome of the other iſlands in America. It riſes with a ſhrubby ſtalk to the height of ten or twelve feet, dividing upwards into a few branches, which are garniſhed with ſpear-ſhaped leaves, cut on their edges; theſe are ſoft and hairy. The flowers are produced from the ſide of the branches, growing

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[a] Juſſieu.

[b] Sloane.

[c] Hort. kew.

ſeveral together on the ſame foot-ſtalk; they are ſhaped like thoſe of the Foxglove, of a greeniſh yellow colour, with brown ſpots on the inſide; the flowers have a ſwelling tube, which is recurved, and the brim is ſlightly divided into five unequal ſegments. Theſe appear in July, but are not ſucceeded by ſeeds in England.

[5 to 12. All theſe are natives of Jamaica, and the tenth of ſome other iſlands in the Weſt-Indies; they were all obſerved by Swartz. They are ſhrubby, except the eleventh, which is annual, according to Swartz, but perennial, as marked by others.—Browne deſcribes this as having a ſlender even ſtem, ſeldom riſing above ten or fourteen inches in height; and throwing out a beautiful ſingle reddiſh flower from the axil of each of the upper leaves. Filaments longer than the corolla, and ſomewhat twiſted as they riſe.

Monſ. Lamarck ſaw it in flower in the garden belonging to Monſ. L'Heritier, who named it Cyrilla pulchella; which ſee. He firſt received it in flower by means of Brouſſonet from England: where it was introduced in 1778 by Mr. William Forſyth[d].]

PROPAGATION AND CULTURE.

Theſe plants are propagated by ſeeds, which muſt be procured from the countries where they grow naturally. They ſhould be brought over in their capſules, for as they are very ſmall and light, when they are ſeparated from the partition to which they adhere, they ſoon loſe their vegetative quality.

The ſeeds ſhould be ſown in pots filled with light earth, and plunged into a hot-bed of tanner's bark as ſoon as they arrive, for they ſometimes lie long in the ground; thoſe which I have ſown in autumn came up the following ſpring; therefore when they happen to arrive here at that ſeaſon, the pots in which the ſeeds are ſown ſhould be plunged into the tan-bed in the ſtove, and during the winter the earth ſhould be now and then gently watered to prevent its drying too much, but it muſt not be too moiſt. In the ſpring the pots ſhould be removed out of the ſtove, and plunged into a freſh hot-bed, which will bring up the plants ſoon after. When theſe are fit to remove, they ſhould be each planted into a ſeparate pot, and plunged into a good hot-bed of tan, obſerving to ſhade them till they have taken new root; then they muſt be treated in the ſame way as other tender plants from the ſame countries.

In autumn they muſt be plunged into the tan-bed in the ſtove, where, during the winter, they ſhould have but little water given to them; for if they receive much wet, it will deſtroy them. In this ſtove the plants muſt conſtantly remain, for they will not thrive if they are kept out of the tan. In the ſummer they ſhould have free air admitted to them at all times when the weather is warm; and they muſt be frequently refreſhed with water during that ſeaſon, but it muſt not be given to them in too great plenty. As the plants advance in growth they will require larger pots, but there muſt be care taken not to over-pot them, for they will not thrive in large pots. With this management the plants will flower the ſecond year, and may be continued three or four years, but they are not of long duration in their native country.

The fourth ſort ſeldom flowers till the third year, and as it does not produce ſeeds here, it is with difficulty preſerved in the European ſtoves.

[The eleventh ſort deſerves to be cultivated in the flower-gardens of America. It thrives beſt in a cool gravelly ſoil, well furniſhed with moiſture, and intermixed with rich mould[e].

GESNERIA. See *Digitalis.*

GETHIOIDES. See *Allium pallens.*

GETHYLLIS. (Γηθυλλις *or* Γηθυον, *is the name of a plant in Ariſtophanes, Athenæus, &c. So named, as ſpringing from the earth.)*

Lin. gen. n. 590. *Reich.* 644. *Schreb.* 584. *Thunb. nov. gen.* 13. *Juſſ.* 54. Papiria. *Thunb. act. Lund. p.* 1. *ſ.* 2.

Claſſ. 6. 1. Hexandria Monogynia.

Nat. order of *Spathaceæ.—Narciſſi,* Juſſ.

GENERIC CHARACTER.

CAL. none, unleſs a ſheath obliquely truncate.

COR. one-petalled, ſuperior: tube long, filiform, radical: *border* expanding flat, ſix-parted; *diviſions* oblong.

STAM. *Filaments* ſix, inſerted into the mouth of the tube, ſhorter than the border, uſually divided. *Anthers* linear, ſpirally bent in.

PIST. *Germ* inferior. *Style* ſimple, longer than the ſtamens. *Stigma* capitate.

PER. *Berry* club-ſhaped, blunt, radical (ſeſſile in the bulb itſelf, and proceeding from it) ſomewhat fleſhy, one-celled.

SEEDS neſtling, one upon another in three rows, globular, ſmooth.

> OBS. *In ſome flowers, particularly in* G. ciliaris, *the filaments are divided above the baſe, with as many anthers; but two anthers are ſeldom ſeen on one filament; ſo that the ſame flower may have eight, ten, or more anthers.*

ESSENTIAL CHARACTER.

Cal. none. *Cor.* ſix-parted. *Berry* club-ſhaped, radical, one-celled.

SPECIES.

1. Gethyllis villoſa. *Hairy Gethyllis.*
   Lin. ſyſt. 339. *ſuppl.* 198. *Thunb. nov. gen.* 1. 14. *n.* 3.
   Papiria villoſa. *Thunb. act. lund.* 1. 111.
   Leaves linear-filiform, ſpiral, villoſe; ſegments of the corolla ovate-oblong.
2. Gethyllis ciliaris. *Fringed Gethyllis.*
   Lin. ſyſt. 339. *ſuppl.* 198. *Thunb. nov. gen.* 1. 14. *n.* 2.
   Papiria ciliaris. *Thunb. act. lund.* 1. 111.
   Leaves linear, ſpiral, ciliate; ſegments of the corolla ovate-oblong.
3. Gethyllis ſpiralis. *Spiral Gethyllis.*
   Lin. ſyſt. 339. *ſuppl.* 198. *Thunb. nov. gen.* 1. 14. *n.* 1.
   G. afra. *Lin. ſpec.* 633. *ſyſt. edit.* 13. 367. *Reich.* 2. 412. *hort. cliff.* 493.
   Papiria ſpiralis. *Thunb. act. lund.* 1. 111.
   Leaves linear, ſpiral, ſmooth: ſegments of the corolla oblong.
4. Gethyllis lanceolata. *Lanceolate Gethyllis.*
   Lin. ſyſt. 339. *ſuppl.* 198.
   Papiria lanceolata. *Thunb. act. lund.* 1. 112.
   Leaves lanceolate, flat, ſegments of the corolla lanceolate.

DESCRIPTIONS, &c.

All theſe plants have the habit or air of *Colchicum,* but are ſufficiently diſtinguiſhed from it, by having a monopetalous corolla, and a berry for a fruit. There is but one flower on a naked ſtalk; and the fruit has a grateful odour, with a pleaſant taſte. They are natives of the Cape of Good Hope, where they were obſerved by Thunberg, who has figured and deſcribed them[f]. The third ſpecies only has been long known in Europe. That was cultivated in 1780, by the late Dr. Fothergill. The two firſt were introduced here by Mr. Francis Maſſon, in 1777 and 1778[g].]

GEUM (*of Pliny. Derivation uncertain.*)
Engl. *Avens or Herb-Bennet.*
Fr. *Benoite.*

Lin. gen. n. 636. *Reich.* 692. *Schreb.* 867. *Gærtn. t.* 74. *Juſſ.* 338. Caryophyllata. *Tournef.* 151. A. D. F. G.

Claſſ. 12. 5. Icoſandria Polygynia.

Nat. order of *Senticoſæ.—Roſaceæ,* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, ten-cleft, uprightiſh: ſegments alternately very ſmall, ſharp.

COR. *Petals* five, rounded: *claws* the length of the calyx, narrow, inſerted into the calyx.

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[d] Hort. kew.

[e] Brown. jam.

[f] Linn. ſuppl.

[g] Hort. kew.

STAM. *Filaments* numerous, ſubulate, length of the calyx, into which they are inſerted. *Anthers* ſhort, broadiſh, blunt.

PIST. *Germs* numerous, collected into a head. *Styles* inſerted into the ſide of the germ, (terminating, *G.*) hairy, long. *Stigmas* ſimple.

PER. none. Common receptacle of the ſeeds oblong, (columnar. *G.*) hirſute, placed on the reflex calyx.

SEEDS numerous, compreſſed, hiſpid, awned, with a long ſtyle.

ESSENTIAL CHARACTER.

Cal. ten-cleft. *Pet.* five. *Seeds* with a kneed awn.

SPECIES.

1. Geum virginianum. *American Avens.*
Lin. ſpec. 716. *ſyſt.* 479. *Reich.* 2. 551. *hort. cliff.* 195. *Gron. virg.* 56. *Ait. hort. kew.* 2. 217.
G. canadenſe. *Jacqu. hort.* 2. 82. *t.* 175.
Caryophyllata virg. albo fl. minore, rad. inodora. *Herm. parad. t.* 111.
C. virginienſis. *Park. theat.* 136?
Flowers upright; awns hooked, naked; ſtem-leaves ternate, the upper ones lanceolate, petals ſhorter than the calyx.

[2. Geum ſtrictum. *Upright Avens.*
Ait. hort. kew. 2. 217.
G. canadenſe. *Lin. ſyſt.* 480. *Murr. nov. comm. gott.* 5. 33. *t.* 4. B.
G. aleppicum. *Jacqu. ic. collect.* 1. 88.
Flowers upright; awns hooked, naked; ſtem-leaves pinnate, leaflets and ſtipules gaſh-cleft; petals longer than the calyx.]

3. Geum urbanum. *Common Avens*, or *Herb-Bennet.*
Lin. ſpec. 716. *Reich.* 2. 551. *hort. cliff.* 195. *fl. ſuec. n.* 460. *mat. med.* 132. *Gærtn. fruct.* 351. *Hudſ. angl.* 226. *With.* 537. *Curtis lond.* 2. 36. *Lightf. ſcot.* 273. *Relh. cant. n.* 378. *Hall. helv. n.* 1130. *Pollich pal. n.* 501. *Neck. gallob.* 226. *Leers herborn. n.* 397. *Fl. dan. t.* 672. *Krock. ſileſ. n.* 807. *Murr. nov. comm. gott.* 5. 33. *t.* 4. A. *Blackw.* 253. *Gærtn. fruct.* 351.
Caryophyllata urbana. *Scop. carn. n.* 628. *Allion. pedem. n.* 1494.
C. vulgaris. *Bauh. pin.* 321. *Cluſ. hiſt.* 2. 102. *Mor. hiſt.* 2. *ſ.* 4. *t.* 26. *f.* 1, 2.
C. *Dod. pempt.* 137. *Fuchſ.* 384. *Ger.* 842. 1. *emac.* 994. 1. *Park. theat.* 136. *f.* 1. *Raii hiſt.* 606. *ſyn.* 253. *Petiv. brit. t.* 40. *f.* 1.
Caryophyllata *Brunf.* & Herba benedicta *ej.* 4.
β. C. vulgaris majore flore. *Bauh. pin.* 321. *Fuchſ.* 385. *Trag.* 37. *Hudſ.* & *With.* β. &c. *Raii hiſt.* 606. 2. *ſyn.* 253. *Petiv. brit. t.* 40. *f.* 2.
Flowers upright; awns hooked, naked; ſtem-leaves ternate, root-leaves lyrate-pinnate.

[4. Geum japonicum. *Japan Avens.*
Lin. ſyſt. 480. *Thunb. jap.* 220.
Flowers upright; fruits hirſute; awns naked, leaves with three lobes or more.]

5. Geum rivale. *Water Avens.*
Lin. ſpec. 717. *Reich.* 2. 552. *hort. cliff.* 195. *fl. ſuec. n.* 461. *mat. med.* 132. *fl. lapp.* 216. *Hudſ. angl.* 226. *With.* 538. *Sowerby engl. bot. t.* 106. *Lightf.* 274. *Relh. n.* 379. *Hall. helv. n.* 1129. *Fl. dan. t.* 722. *Leers herborn. n.* 398. *Krock. ſileſ. n.* 808.
Caryophyllata rivalis. *Scop. carn. n.* 629.
C. aquatica, nutante flore. *Bauh. pin.* 321. *Mor. ſ.* 4. *t.* 26. *f.* 7.
C. ſeptentrionalium. *Lob. ic.* 1. 694.
C. montana 1. *Cluſ. hiſt.* 2. 103.—purpurea. *Ger. emac.* 995. 4. *Raii hiſt.* 607. *ſyn.* 253.—mont. ſ. paluſtris purpurea. *Park. theat.* 137. *f.* 5. *Petiv. brit. t.* 40. *f.* 3.
C. aquat. fl. rubro ſtriato. *Bauh. hiſt.* 2. 398. 2.
β. C. aquat. altera. *Bauh. pin.* 322. *Mor. t.* 26. *f.* 8.
γ. C. mont. fl. pleno prolifero Breynii. *Raii hiſt.* 607.—prolif. floſculis elegantiſſimis. *Loeſ. pruſſ.* 35. *t.* 6. *Lin. ſuec.* β. *Ger. emac.* 995. *f. ult. Pet. t.* 40. *f.* 4.
Flowers nodding, awns hooked, villoſe, petals retuſe, roundiſh-wedge-ſhaped, leaves pinnate.

[6. Geum hybridum. *Mule Avens.*
Lin. ſyſt. 480. *Jacqu. miſc.* 2. 33. *icon. rar. t.* 6.
Caryophyllata montana tertia. *Cluſ. rar.* 104.
Flower nodding, calyx leafy, longer than the polypetalous corolla.]

7. Geum montanum. *Mountain Avens.*
Lin. ſpec. 717. *ſyſt.* 480. *Reich.* 2. 552. *Jacqu. auſtr.* 4. 38. *t.* 373. *Hall. helv. n.* 1131. *Krock. ſileſ. n.* 809. 2. *t.* 13. *D'Aſſo aragon. n.* 452.
Caryophyllata montana. *Scop. carn. n.* 630.
C. alpina. *Pon. bald.* 342.—lutea. *Bauh. pin.* 322. *Mor. t.* 26. *f.* 3.
C. montana. *Cam. epit.* 727. *Cluſ. hiſt.* 2. 103. 2. *Ger.* 842. *f.* 2. *emac.* 994. 2. *Park. theat.* 136. *f.* 2. *Raii hiſt.* 608.—fl. magno luteo. *Bauh. hiſt.* 2. 398. *f.* 1.
β. G. alpinum. *Mill. dict. n.* 5.—C. alpina minor. *Bauh. pin.* 322. *prodr.* 139. *Park. theat.* 137. *f.* 3. *Raii hiſt.* 608.—minima. *Ger. emac.* 995. *f.* 5.—fl. aureo. *Barrel. ic. t.* 399.
Stem one-flowered, awns ſtraight, villoſe, leaves pinnate, hairy, outmoſt leaflet very large and roundiſh, the lower ones gradually ſmaller.

[8. Geum potentilloides. *Siberian Avens.*
Ait. hort. kew. 2. 219.
G. Laxmanni. *Gærtn. fruct.* 352.
Dryas geoides. *Pallas itin.* 3. 732. *t.* Y. *f.* 1. *Jacqu. hort.* 3. 38. *t.* 68. *Falck ruſſ. t.* 11.
Caryophyllata potentilloides. *De Lamarck encycl.* 1. 400.
Stem one or two-flowered, awns ſtraight, naked, calyxes of the fruit upright, leaves pinnate, toothed.

9. Geum reptans. *Creeping Avens.*
Lin. ſpec. 717. *ſyſt.* 480. *Reich.* 2. 553. *Hall. helv. n.* 1132. *Jacqu. auſtr.* 5. 38. *t. app.* 22. *Krock. ſileſ. n.* 810.
Caryophyllata alpina apii folio. *Bauh. pin.* 322. *Mor. hiſt.* 2. 431. *ſ.* 4. *t.* 26. *f.* 5.—minor altera. *Park. theat.* 136. *n.* 4. *Raii hiſt.* 608.—tenuifolia incana, &c. *Barrel. ic. t.* 400. *Bocc. muſ. t.* 128.
Stems one-flowered, awns ſtraight, villoſe, leaves pinnate, gaſhed, hairy, runners creeping.

DESCRIPTIONS, &c.

Theſe are perennial herbaceous plants. The leaves uſually unequally pinnate, with the terminating leaflet larger than the reſt. The ſtipules faſtened to the petiole. The peduncles terminating or axillary, ſupporting few flowers, ſometimes only one. Natives of Europe and North America. Flowering from may to ſeptember.]

1. Stem a foot and half or two feet high, branching at top into ſmall peduncles, each terminated by a ſmall white flower.

[This ſpecies differs from G. *urbanum*, which it otherwiſe much reſembles, in having white petals ſhorter than the calyx; the flowers nodding during flowering time; the peduncles being thicker towards the flower; the ſeeds hairy, and the root-leaves ſubbipinnate[a].

Parkinſon mentions an Avens from New-England brought by John Newton a Chirurgion of Colliton, but he ſays it differs from G. rivale only in being taller and greater.

Cultivated in 1739, by Mr. Miller. It flowers in july and auguſt: and is a native of North America[b].

2. This has the habit of G. urbanum. Stems upright, round, a foot and half high and more, moſt of the branchlets ending in one-flowered peduncles. Root-leaves pinnate and petioled, with the outmoſt leaflet very large, rounded and lobed, the ſide ones ovate, differing much in ſize, all ſeſſile and unequally ſerrate: ſometimes the extreme leaflet is trifid-palmate; ſometimes, but more rarely, all the leaflets are deeply gaſhed. Stem-leaflets lanceolate, and acute. Uppermoſt ſtem-leaves ſimple, and below theſe ternate. Stipules ſeſſile, gaſhed. Petals

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[a] Linn. ſpec.

[b] Hort. kew.

yellow, ſcarcely longer than the calyx. Fruit twice as large as in G. urbanum[c].

Native of North America. Introduced in 1778, by Monſ. Thouin. It flowers in may and june[d].

3. Stalks from one to two feet high, nearly upright, ſomewhat flexuoſe, ſlightly angular, hairy, branched at top. Root-leaves varying, but moſt commonly pinnate, petioled with a ciliate ſheath, the end-leaflet large, divided ſometimes into three lobes, at others more deeply into three parts, the lateral leaflets few, ſmall, unequal; all deeply ſerrate, veined, and hairy: ſtem either divided almoſt to the baſe, or really ternate; accompanied with a large pair of roundiſh, toothed ſtipules, reſembling the leaflets. Peduncles ſingle, nearly upright, round, ſomewhat hairy, ſupporting one flower. Corolla ſmall, yellow, with very ſhort claws. Filaments yellowiſh, at firſt bent in, afterwards upright, half as long as the larger ſegments of the calyx: (not longer than the ſmaller ſegments. *Scop.*) Anthers roundiſh, yellow, turning brown: (having hairs about the edge, viſible only in a glaſs. *Scop.*) Germs hairy. Styles ſmooth, purple, fixed to the top of the germ, jointed in the middle, a little thickened at top[e]. Seeds about 110, ovate, of a pale ferruginous colour, covered with two ſkins; the outer leathery, terminated by the awn; the inner membranaceous, very thin, pale ſtraw-colour: embryo elliptic, ſlightly flatted, white; cotyledons oblong, thin; radicle ſhort, at bottom[f].

Common in moſt parts of Europe, in woods and hedges; flowering from may to ſeptember.

The roots have a mildly aſtringent aromatic taſte, ſomewhat like that of Cloves, whence this plant has the name of *Caryophyllata.* They ſhould be gathered in dry warm ſituations, for in ſhady, moiſt places they have little virtue. Gathered in the ſpring, and put freſh into ale, they give it a pleaſant flavour, and prevent its turning ſour. Infuſed in wine it is eſteemed a good ſtomachic; but in water Haller affirms it to have been attended with bad effects, when given in malignant fevers, producing delirium. Chewed in the mouth, the roots take off from a diſagreeable breath[g].

β. Obſerved by Dr. Liſter in Tedford wood on the Lincolnſhire wolds. Cultivated by Ray in his garden at Cambridge, from the neighbouring woods.

4. Stalk round, flexuoſe, upright, hirſute, a foot high or more, ſometimes, but ſeldom, a little branched at top. Branches alternate, very ſhort, ſomewhat tomentoſe. Leaves alternate, petioled, roundiſh, toothed, villoſe, ſoft, an inch in length. Petiole tomentoſe, a little ſhorter than the leaf. Stipules in pairs, leafy, ovate, gaſh-toothed, ſhorter than the petiole. Flowers terminating the ſtem and branches, ſolitary. Petals the length of the calyx. Seeds ovate, rough, with gray hairs. Awns ſubulate, hooked, reflex, ſmooth.—Native of Japon[h].

5. Root creeping, reddiſh, aſtringent, aromatic, ſmelling like cloves. Stem a foot high, upright, round and branched, bending at top, but becoming erect as the fruit ripens. Leaves lyrate, much larger than in *G. urbanum*, jagged, gaſh-ſerrate and hirſute. Stipules undivided, or jagged. Peduncles purpliſh, hirſute, with hairs terminating in a red globule, becoming leſs bent as the ſeeds ripen. Calyx cylindric, hirſute, with the ſame ſort of hairs as are on the peduncle, of a dull red colour. Petals upright, never expanding, the length of the calyx, purpliſh red and veined. Stamens near 100, or even more; filaments ſmooth, anthers yellow. Receptacle of the ſeeds oblong and peduncled; whereas that of *G. urbanum* is ovate and ſubſeſſile: the tip alſo of the awns is hairy, not naked as in the other[i].

Native of moſt countries of Europe, in moiſt paſtures and woods, indicating (according to Linneus) a barren ſoil, not fit for corn. Alſo in the Levant, and North America.—With us it is more common in the north, as on the water of Leith, near Edinburgh, and other places in Scotland on mooriſh grounds; Settle, Ingleton, &c. in Yorkſhire, and Lancaſhire, and by ſides of rivers and on mountains in many places of the northern counties. About Chevely and Wood-Ditton in Cambridgeſhire, where it was firſt found by Dr. Chevallier, the late maſter of St. John's College. In Wolverton wood near Lynn; at Marham near Swaffham, and near Norwich, in Norfolk. Near Sudbury, in a bog. Near Aſton in Warwickſhire. Alſo in Wales, by Mr. Thomas Glynn before 1633[k]. About Snowdon, &c.

It flowers from the end of may to autumn.

The powdered root is beneficial in diarrhœas and hæmorrhages, and is much uſed by the Canadians in the cure of tertian agues. It will cure malt-liquor of its ropyneſs.

This ſpecies varies with yellow flowers, and they frequently become double and proliferous.—Near Strickland in Weſtmoreland, obſerved by Mr. Lawſon; alſo at Brearcliff[l].

6. This ſeems to be a mule plant produced between the ſubſequent and foregoing ſpecies[m].

It grows much taller than G. rivale, and is in every reſpect a larger plant. The lower leaves are interruptedly pinnate, with three pairs of leaflets, beſides the ſmaller ones, and that at the end, which is very large. Calyx duſkier purple, tinged with green. Corolla yellow, only tinged with purple at the edge, about the ſame length with the calyx, having ſometimes more petals than five.

7. Root-leaves in a tuft, on petioles of different lengths; theſe are hairy, and have ſeveral pairs of leaflets on them, (five or more. *Haller.*) the loweſt very ſmall, the ſucceeding ones gradually larger, and the pair immediately under the great terminating leaflet much bigger than any of the reſt: the extreme leaflet is two or three inches in length and breadth, obſcurely lobed, gaſh-ſerrate, and veined. The leaves of the ſtem ſeſſile, ſolitary, alternate, trifid, the pinnas ſmaller and more crowded than in the others, ſeſſile and gaſh-ſerrate. Stem unbranched, from a ſpan to a foot and half in height. Flowers large, ſolitary, ſpreading, upright. Calyx wide, hairy, green. Petals yellow, almoſt ſaffron-coloured, emarginate, (ſometimes ſeven in number. *Haller.*) Anthers golden. Receptacle hairy[n].

In the mountains of Switzerland, Auſtria, Sileſia, Dauphiné, Arragon: Ray found it near the Great Chartreuſe in Dauphiné; and I gathered it on the Col. de Balme, in going from Chamouni to the Valais in 1779.—It flowers in june and july—with us in our gardens from may to ſeptember. Cultivated in 1597. Gerarde ſays it flouriſhes and increaſes infinitely in our London gardens.

β. Small Mountain Avens is made a diſtinct ſpecies by Mr. Miller,] who ſays that it is a very low plant, with flower-ſtalks about three inches long, bending on one ſide, each terminated by one bright yellow flower, about the ſame ſize with thoſe of the common ſort.

[Found on monte Baldo, &c.

8. On account of the calyx when ripe being bell-ſhaped; the corolla yellow and five-petalled; the receptacle elongated, the awns naked and jointed, this approaches nearer to a *Geum* than a *Dryas.* The leaves are pubeſcent on both ſides, blue underneath, and the whole appearance is that of a Geum. —The ripe calyx is cloſed by the five larger ſegments converging, and the briſtle-ſhaped, rigid, permanent filaments. Receptacle cylindric, ſlender, excavated, naked, a little ſhorter than the calyx. Seeds numerous, obovate, gibbous on one ſide, thence compreſſed into a ſtraight keel, ſhagreened on all ſides with raiſed dots, of a brown-ferruginous colour. Awn ſtraight, like a needle, twice as long as the ſeed, and inſerted into the top of it, ſmooth, and falling of itſelf when ripe[o].

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[c] Jacquin. [d] Hort. kew. [e] Curt. & With. [f] Gærtner. [g] Curtis, Wither. Haller, Linn. ſuec. Krocker. [h] Thunberg. [i] Withering, Scopoli, Leers, Krocker.

[k] Ger. emac. [l] Merret. [m] Murr. in ſyſt. [n] Krocker. [o] Gærtner.

Native of Siberia. It flowers in june.

Introduced in 1780, by Simon Pallas, M.D.[p]

9. Root large and woody. Stems ſome almoſt upright, flowering, hirſute, others procumbent, creeping; all round, having palmate, ſeſſile, alternate leaves, otherwiſe naked; the flowering ſtems are but little longer than the leaves, and bear uſually one flower, ſeldom two, and very ſeldom three. Moſt of the root-leaves are on petioles, rough with hairs; they are compoſed of two or three pairs of leaflets (four or five. *Haller)*, with very ſmall ones interpoſed, the laſt pair larger than the others, the extreme leaflet very large, three or five-lobed: they are gaſh-ſerrate or toothed, hirſute, green, ſomewhat like the leaves of Parſley, ſmaller than in the other ſorts, and deeper cut. Flower much larger than in the *montanum:* calyx green, with the ſegments often reddiſh; they are larger than in the *montanum*, and lanceolate: petals yellow, emarginate, marked with lines, much larger than the calyx; the whole corolla ſometimes two inches in diameter. Styles ſilky. Receptacle villoſe[q].

Native of Switzerland, Auſtria, Sileſia, Savoy and Piedmont: flowering in june and july.—Introduced in 1775, by Doctors Pitcairn and Fothergill[r].]

PROPAGATION AND CULTURE.

The third ſort being common in a wild ſtate, is admitted only into botanic gardens. They are all hardy plants, which require a ſhady ſituation, but will thrive in any ſoil. They may eaſily be propagated by ſeeds, which ſhould be ſown in autumn; for when they are ſown in the ſpring, they do not grow the ſame year.

[Geum. See *Dryas* and *Saxifraga.*

GHINIA. (*So named by Schreber, in honour of Lucas Ghini, a famous phyſician and botaniſt of Bologna, in the ſixteenth century.*)

Lin. gen. Schreb. n. 42. & add. 817.

Tamonea. *Aubl. guian.* 268. *Juſſ.* 109. *Swartz. prodr.* 94.

Claſſ. 2. 1. Diandria Monogynia.—Didynamia. *Sw.*

Nat. order of *Perſonatæ.—Vitices*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, tubular, permanent: *mouth* expanded, five-toothed, acuminate.

Cor. one-petalled, irregular: *tube* long, narrow; *border* two-lipped; *upper lip* largeſt, roundiſh, concave, aſcending; *lower* three-parted, *ſegments* roundiſh, the middle one largeſt, bent down, emarginate.

Stam. *Filaments* four, inſerted into the tube above the baſe, two longer than the others. *Anthers* with oblong cells; *one* at the end, fertile in the longer filaments, barren in the ſhorter; *the other* inſerted towards the middle of the filament, in ſhape of a ſcale.

Pist. *Germ* roundiſh. *Style* the length of the tube. *Stigma* four-lobed.

Per. *Drupe* turbinate, angular, longer than the calyx, which is permanent.

Seed. *Nut* angular, four or five-celled, with one ſeed in each cell. (four-cornered, four-ſpined at the end, four-celled; with ſolitary kernels. *Sw.)*

Obs. *Allied to* Verbena.

ESSENTIAL CHARACTER.

Cal. five-toothed, teeth acuminate. *Cor.* two-lipped. *Stam.* four, with two barren anthers at the end of the ſhorter filaments. *Per.* a Drupe, containing a four or five-celled nut, with a ſeed in each cell. (A fleſhy four-celled nut. *Sw.)*

SPECIES.

1. Ghinia ſpinoſa.

Tamonea ſpinoſa. *Swartz. prodr.* 94.]

Verbena curaſſavica. *Lin. ſpec.* 28. *Reich.* 1. 53. *Mill. dict. n.* 17.

[Kæmpfera. *Houſt. rel.* 3. *t.* 2.

Fruits four-ſpined.

2. Ghinia mutica.

Tamonea mutica. *Swartz. prodr.* 94.

T. ſpicata. *Aubl. guian.* 660. *t.* 268.

Fruits without ſpines.]

DESCRIPTIONS, *&c.*

1. Stem ſlender, woody, branching, near three feet high. Leaves oval, ſharply indented, light green, on ſhort foot-ſtalks. Flowers diſtant, ſeſſile, in a looſe ſpike, on ſlender, naked, axillary peduncles, ſix or ſeven inches in length. Corollas ſmall, bright blue. Seeds two, terminated by ſhort awns, and incloſed in the calyx.

[It is an annual plant, and native of the Weſt-Indies, Antigua, Curacoa, &c[s].] The ſeeds were ſent to Mr. Miller from La Vera Cruz, by Dr. Houſtoun.

[2. This alſo is an annual plant, about a foot and half in height. Stem ſtrong, ſtraight, a little woody. Leaves rounded or ſubovate, deeply toothed, having ſhort hairs on both ſurfaces. Petiole three or four lines in length. Spikes axillary, oppoſite. Flowers ſolitary, few, alternate, pedicelled, with a ſmall, linear bracte at the baſe of each pedicel. Corolla blue. Fruit black, incloſed within the calyx; nut cloſe and woody, four-celled or five-celled, each cell having a ſmall kernel in it. Native of Guiana, and the iſland of Cayenne[t].

Gigalobium. See *Mimoſa.*

Gilibertia of Gmelin, the ſame with *Quiviſia* of Cavanilles and Juſſieu.

Gilliflower. See *Dianthus.*

———— Stock. See *Cheiranthus.*

———— Queen's, or Dame's Violet. See *Heſperis.*

GINANNIA. (*So named by Scopoli in honour of Giuſeppe Ginanni of Ravenna, ſcholar of Valliſnieri. Opera poſthuma, Ven.* 1755, *fol. curante Georgio Foſſato, Franceſco Ginanni is his nephew.*)

Lin. gen. Schreb. n. 691. *Scop.*

Palouë. *Aubl.* 141. Palovea. *Juſſ.* 351.

Claſſ. 9. 1. Enneandria Monogynia.

Nat. order of *Lomentaceæ.—Leguminoſæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* double: *outer* one-leafed, bifid, acute; *inner* one-leafed, cup-ſhaped, four or five-cleft; *ſegments* oval, concave, obtuſe, ſpreading, one larger than the reſt.

Cor. *Petals* three, oblong, obtuſe, fringed, ſpreading, inſerted into the larger ſegment of the calyx at the baſe.

Stam. *Filaments* nine, filiform, flexuoſe, longer than the corolla, inſerted into the mouth of the calyx. *Anthers* parallelopid, verſatile.

Pist. *Germ* oblong, compreſſed, at the bottom of the calyx affixed to a *pedicel*, with a membranaceous wing at top. *Style* filiform, flexuoſe, the length of the ſtamens. *Stigma* obtuſe.

Per. *Legume* long, ſtraight, one-celled, two-valved, pedicelled.

Seeds very many, oval, flatted, ſmooth.

ESSENTIAL CHARACTER.

Cal. double, both one-leafed. *Pet.* three, fringed, ſpreading. *Germ* pedicelled, with a membranaceous wing at top. *Legume.*

SPECIES.

Ginannia guianenſis.

Paloue guianenſis. *Aubl. guian.* 365. *t.* 141.

DESCRIPTION, *&c.*

This is a ſhrub growing to the height of fifteen feet, beginning to be branched at one or two feet from the ground. Leaves alternate, entire, ſmooth, ovate-oblong, acuminate, ſubſeſſile; the largeſt ſix inches long, and two inches and a half wide. Stipules minute, in pairs, at the baſe of the petioles. Flowers terminating, three or four together, on a ſhort peduncle, on which are four or five ſoft green ſcales, or bractes.

Native of the foreſts of Guiana, flowering in february, and fruiting in may[u].

Juſſieu doubts whether the corolla may not have five petals, two of which drop off quickly; and alſo, whether there may not be a tenth filament, which is barren?

After all, may not this ſhrub be a ſpecies of Brownea?

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[p] Hort. kew.

[q] Krocker, Haller.

[r] Hort. kew.

[s] Swartz.

[t] Aublet.

[u] Ibid.

Ginger. See *Amomum.*

Gingidium. See *Artedia, Daucus, Tordylium.*

GINKGO (*vel* Gin an, *vulgo* Itſio *Kæmpf.*)

Kæmpf. amoen. 813. *Thunb. jap.* 358. *Lamarck. encycl.*

SPECIES.

Ginkgo biloba. *Maidenhair Tree.*

Lin. ſyſt. 987. *Reich.* 4. *mant.* 313. *Thunb. jap.* 358. *Ait. hort. kew.* 3. 479. *Kæmpf. amoen.* 811.

Gingo du Japon. *Lamarck. encycl.* 712.

DESCRIPTION, *&c.*

This tree grows to a prodigious ſize, with a trunk frequently as thick as the largeſt oak; the branches are alternate and ſpreading. Leaves alternate, petioled, wedge-ſhaped, rounded on the upper edge, where they are ſlightly gaſhed or notched unequally, with a large ſinus in the middle, dividing them into two lobes: they come out in bundles at the knots or tubercles of the branches, are ſmooth, and finely ſtriated by numerous parallel forked veins, but they have neither rib nor nerve, and are not much unlike the leaves of Maidenhair; they are from an inch and half to three inches in width; and the petioles are about two inches long, ſlightly channelled, pubeſcent at the baſe above, with the edges of the leaf running down the top[a].

Of the fructification we yet know very little with certainty. The flowers are male and female ſeparate, probably on different trees. The male flowers were produced laſt year (1795) in the royal botanic garden at Kew, but in a ſtate not ſufficiently perfect to determine the character abſolutely. They come out in april, before the leaves, and from the ſame bud with them, towards the end of the branches; on aments or catkins, as Kæmpfer deſcribes them, pendant and longiſh, abounding in pollen.—The female flowers are probably ſolitary or few in number in the axils of the leaves, Kæmpfer having aſſigned this ſituation to the fruits, which he ſays grow on a thick fleſhy peduncle an inch in length, and having figured them ſingle: he deſcribes them as round or oblong, of the appearance and ſize of a Damaſcene Plum or Damſon, with a warted ſurface becoming yellow as the fruit ripens, and a fleſhy, juicy, white pulp, adhering very cloſely to the nut, which reſembles that of the Piſtachia, but is almoſt double the ſize, and more of the form of an Apricot ſtone; the ſhell is woody, thin, brittle and whitiſh, and the kernel is white, rather firm, ſweet, with a mixture of auſterity, or bitterneſs, when raw, but is agreeable when roaſted gently on the coals, before the ſkin is taken off. In this ſtate it is ſuppoſed to help digeſtion.

Native of Japan and China. Cultivated in 1758 by Mr. James Gordon[b], who firſt ſent the tree to Linneus[c].

GINORA. (*So named by Jacquin in honour of the Marquis Carlo Ginori, who had a botanic garden near Florence, kept up by his ſon Lorenzo.*)

Lin. gen. n. 605. *Reich.* 661.

Ginoria. *Jacqu. amer.* 91. *Schreb. n.* 826. *Juſſ.* 331.

Claſſ. 11. 1. Dodecandria Monogynia.

Nat. order of *Salicariæ.* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed: *tube* bell-ſhaped: *border* ſix-cleft; *ſegments* lanceolate, ſpreading, coloured, permanent.

Cor. *Petals* ſix, roundiſh, ſpreading, longer than the calyx, with long claws inſerted into the neck of the calyx.

Stam. *Filaments* twelve, ſubulate, patulous, as long as the calyx, and inſerted into it. *Anthers* kidney-ſhaped.

Pist. *Germ* roundiſh, flatted. *Style* ſubulate, the ſame length with the corolla, permanent. *Stigma* obtuſe.

Per. *Capſule* flatted and roundiſh, ſhining, coloured, ſomewhat four-grooved, four-valved, one-celled, gaping at the tip.

Seeds very many, minute. *Receptacle* roundiſh, large.

ESSENTIAL CHARACTER.

Cal. ſix-cleft. *Pet.* ſix. *Capſ.* one-celled, four-valved, coloured, containing many ſeeds.

SPECIES.

1. Ginora americana.

Lin. ſpec. 642. *ſyſt.* 447. *Reich.* 2. 429. *Jacqu. amer.* 148. *t.* 91. *pict.* 73. *t.* 137.

DESCRIPTION, *&c.*

An elegant ſhrub, with the appearance of Myrtle. Leaves oppoſite. Peduncles axillary and terminating, bearing one flower[d].

It grows upright, to the height of three or four feet, and divides into ſmooth branches, round, except that they are compreſſed at the origin of the twigs and leaves, all woody. Leaves lanceolate, acute, quite entire, ſmooth, ſpreading, an inch and half long, on very ſhort petioles. Peduncles ſlender, ſpreading, ſolitary, an inch in length. Flowers handſome, almoſt an inch in diameter, without any ſcent. Calyx red; corolla blue; capſule dark-red, outwardly reſembling a berry[e].

Native of Cuba, by river ſides, and called there Roſa del rio, or river Roſe.

Ginseng. See *Panax.*

GISEKIA. (*So named by Linneus in honour of Paulus Dietericus Giſeke, Profeſſor of Phyſics at Hamburgh.*)

Lin. gen. *Reich. n.* 422. *Schreb.* 532. *Juſſ.* 315.

Koelreutera. *Murr. comm. nov. goett.* 3. *t.* 2. *f.* 1.

Claſſ. 5. 5. Pentandria Pentagynia.

Nat. order of *Succulentæ.—Portulaceæ,* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* five-leaved: leaflets ovate, concave, blunt, ſcarioſe at the edge, permanent.

Cor. none.

Stam. *Filaments* five, ſubulate, ovate at the baſe, ſhort. *Anthers* roundiſh.

Pist. *Germ* ſuperior, roundiſh, retuſe, five-parted. *Styles* ſhort, bowed back. *Stigmas* blunt.

Per. *Capſules* five, roundiſh, ſomewhat flatted, ſcabrous, blunt, approximating.

Seeds ſolitary, ovate, ſmooth.

ESSENTIAL CHARACTER.

Cal. five-leaved. *Cor.* none. *Capſ.* five, approximating, roundiſh, one-ſeeded.

SPECIES.

1. Giſekia pharnacioides. *Trailing Giſekia.*

Lin. ſyſt. 304. *Reich.* 1. 768. *mant.* 562.

Koelreutera molluginoides. *Comm. gott. nov.* 3. 67. *t.* 1. *f.* 1.

DESCRIPTION, *&c.*

Stalks herbaceous, decumbent, ſmooth, round, ſcored with a line on the upper ſide, a foot long, with remote joints. Branches of the baſe alternate. The herb reſembles that of *Illecebrum ficoideum.* Leaves oppoſite, petioled, elliptic-lanceolate, quite entire, blunt, ſmooth and even, ſpreading. Peduncles axillary, ſolitary, round, naked. Umbel ſimple, many-flowered. Flowers green on the outſide, white within, hanging down, except on the day of flowering[f].—The lower branches are trichotomous, the reſt flexuoſely and alternately dichotomous. The leaves in the trichotomies oppoſite, the reſt alternate; all flat and granulated. Moſt of the flowers axillary, on one-flowered peduncles: the ſegments of the calyx with ſcattered hairs on the inſide. Capſules or ſeeds black[g].

It is an annual plant, native of the Eaſt-Indies; flowering here in june.—Introduced in 1783, by John Earl of Bute[h].

Githago. See *Agroſtemma.*

GLABRARIA. (*So named from the ſmoothneſs of the wood, which ſhines like ſilk.*)

Lin. gen. *Reich. n.* 975. *Schreb.* 1219. *Juſſ.* 433.

Claſſ. 18. 4. Polyadelphia Polyandria.

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[a] Thunb. Lamarck, Kæmpf.

[b] Hort. kew.

[c] Linn. mant.

[d] Linn. ſpec. & Juſſ. gen.

[e] Jacquin.

[f] Linn. mant.

[g] Juſſieu.

[h] Hort. kew.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, tubular, five-cleft, ſhorter by half than the corolla.

Cor. *Petals* five, lanceolate, blunt, equal. *Nectary* ſurrounding the germ, with ſubulate, upright, coloured briſtles, the length of the calyx.

Stam. *Filaments* thirty, capillary, interpoſed between the nectaries, in ſixes connected at the baſe, the ſame length with the calyx. *Anthers* kidney-ſhaped.

Pist. *Germ* ſubglobofe (tetracoccous?) *Style* filiform, the length of the ſtamens. *Stigma* ſimple.

Per. *Drupe* juiceleſs, one-celled.

Seed, a bony, oval *nucleus.*

ESSENTIAL CHARACTER.

Cal. five-cleft. *Pet.* five. *Nect.* compoſed of briſtles the length of the calyx. *Stam.* thirty, always in ſixes. *Per.* a Drupe.

SPECIES.

1. Glabraria terſa.

Lin. ſyſt. 697. *Reich.* 3. 586. *mant.* 276. *Lour. cochinch.* 471. *Rumph. amb.* 3. 71. *t.* 44. (Lignum leve.)

DESCRIPTION, &c.

A large tree reſembling *Laurus Camphora,* or the Camphor-tree. Leaves alternate, petioled, ovate-lanceolate, quite entire, ſmooth, acuminate, ſubtomentoſe underneath, even nevertheleſs, and glaucous. Flowers white, in little axillary balls, forming a ſort of raceme, leafleſs, and much ſhorter than the leaves. Calyxes the colour of Elæagnus.—Native of the Eaſt-Indies[a].

The wood is very light and pale-coloured; being not liable to rot, or to be attacked by inſects, it is much uſed in building both houſes and ſhips.

Gladiolo accedens. See *Xyris.*

Gladiolo ſimilis. See *Antholyza.*]

GLADIŎLUS (*of Pliny. Dimin. from* Gladius, *a ſword; and ſo named from the form of the leaves.*)

Engl. *Corn-flag.* Fr. Glayeul.

Lin. gen. n. 57. *Reich.* 63. *Schreb.* 77. *Tourn.* 190. *Thunb. diſſ.* 5. *Gærtn. t.* 11. *Juſſ.* 58.

Claſſ. 3. 1. Triandria Monogynia.

Nat. order of *Enſatæ.—Irides,* Juſſ.—*Liliaceæ.* Hall. Boerh. Adans. *Bulboſæ,* Raii.

GENERIC CHARACTER.

Cal. A *Spathe,* two-valved, inferior, ſhorter than the corolla: *valves* oblong, permanent; the outer one larger, incloſing the inner.

Cor. one-petalled, ſuperior: *tube* cylindric, bent: *border* ſomewhat bell-ſhaped, ſix-parted; *ſegments* oblong, from erect-patulous, the uppermoſt and loweſt lateral either without or within.

Stam. *Filaments* three, inſerted into the orifice of the tube, filiform, ſhorter than the corolla. *Anthers* ovate, incumbent.

Pist. *Germ* inferior, triangular. *Style* filiform. *Stigmas* three, rolled back and ſpreading, blunt, villoſe.

Per. *Capſule* ovate, three-cornered, blunt, three-celled, three-valved.

Seeds very many, ſmooth.

Obs. Antholyza *may very well be placed in this genus.—Gærtn.*

ESSENTIAL CHARACTER.

Cor. ſix-parted, irregular, unequal. *Stigmas* three.

SPECIES.

1. Gladiolus communis. *Common Corn-flag.*

Lin. ſpec. 52. *Reich.* 1. 100. *hort. cliff.* 20. *upſ.* 16. *Thunb. Gladiol. n.* 9. *Hall. helv. n.* 1261. *Scop. carn. n.* 48. *Krock. ſileſ. n.* 55. *D'Aſſo aragon. n.* 31. *Curt. magaz. t.* 86. *Plenck, ic. t.* 33.

Gladiolus. *Dod. coron.* 162. *hiſt.* 209. *Rivin. mon. t.* 110.

G. floribus uno verſu diſpoſitis—item utrinque floridus. *Baub. pin.* 41. *Mor. hiſt.* 2. 343. *ſ.* 4. *t.* 4. *f.* 4, 6, 3.

G. ſ. Xiphion. *Baub. hiſt.* 2. 701. *f.* 2. *Raii hiſt.* 1168.

G. narbonenſis, *Beſt. eyſt. æſt.* 4. *t.* 10. *f.* 3, 4. & italicus, *Ger.* 95. *f.* 1, 2. and 96. *f.* 3. *emac.* 104. *f.* 1, 2.

G. narbonenſis & italicus. *Park. parad.* 189. *t.* 191. *f.* 1, 2.

α. flore rubro. *Common red Corn-flag.*

β. flore incarnato. *Fleſh-coloured* or *bluſh Corn-flag.*

γ. flore albo. *White Corn-flag.*

δ. G. byzantinus, *Conſtantinopolitan Corn-flag.* *Mill. dict. n.* 3. *fig. t.* 142. *f.* 1. *Park. par. t.* 191. *f.* 3. *Raii hiſt.* 1169.

G. major byzant. *Baub. pin.* 41. *Mor. f.* 2.

Leaves ſword-ſhaped; flowers diſtant.

[2. Gladiolus imbricatus.

Lin. ſpec. 52. *Reich.* 1. 100.

Leaves ſword-ſhaped, flowers imbricate.

3. Gladiolus alatus.

Lin. ſpec. 53. *Reich.* 1. 100. *amoen.* 6. 83. *Thunb. diſſ. n.* 15. *Breyn. rar.* 25. *t.* 12. *f.* 2.

Siſyrinchium viperatum. *Pluk. phyt. t.* 224. *f.* 8.

Leaves ſword-ſhaped, the ſide petals very broad.

4. Gladiolus tubiflorus. *Long-tubed Corn-flag.*

Lin. ſyſt. 87. *ſuppl.* 96. *Thunb. gladiol. n.* 23. *Ait. hort. kew.* 1. 62. *Jacqu. ic.* 2. *collect.* 3. 271.

Leaves linear-lanceolate, villoſe, ſomewhat plaited, longer than the ſcape, tube very long, ſpathes hirſute.]

5. Gladiolus plicatus. *Hairy Corn-flag.*

Lin. ſpec. 53. *Reich.* 1. 100. *Thunb. Glad. n.* 24. *Ait. hort. kew.* 1. 63. *Jacqu. ic. vol.* 2.

Ixia plicata. *Amoen. acad.* 4. 300.—ſcillaris. *Mill. dict. n.* 3. *fig. t.* 155. *f.* 1.

Siſyrinchium latifolium, &c. *Breyn. ic.* 22. *t.* 9. *f.* 2.

Leaves oblong-lanceolate, villoſe, plaited, tube longer than the ſpathes.

[6. Gladiolus ſtrictus. *Upright Corn-flag.*

Ait. hort. kew. 1. 63.

Leaves linear-lanceolate, villoſe, plaited, tube equal to the ſpathe.]

7. Gladiolus triſtis. *Square-ſtalked Corn-flag.*

Lin. ſpec. 53. *ſyſt.* 86. *Reich.* 1. 101. *Thunb. diſſ. n.* 8. *Breyn. prodr.* 3. *t.* 7. *f.* 1. *Mill. fig. t.* 235. *f.* 1. *Trew ehret.* 10. *t.* 39. *Curt. magaz. t.* 272.

Leaves linear-croſs-ſhaped, corollas bell-ſhaped.

[8. Gladiolus carinatus. *Spotted-ſtalked Corn-flag.*

Ait. hort. kew. 1. 64.

Leaves linear, keeled on both ſides, ſmooth, tube of the corolla ſhorter than the ſpathes and the borders, ſtigmas undivided, folded together.

9. Gladiolus blandus. *Bluſh-coloured Corn-flag.*

Ait. hort. kew. 1. 64.

Leaves linear-lanceolate, nerved, ſmooth; flowers in ſpikes, the upper ſegment reflex; ſtigmas ſlightly two-lobed.

10. Gladiolus undulatus.

Lin. ſyſt. 86. *Reich.* 1. 101. *mant.* 27. *Lour. cochinch.* 36.

Leaves ſword-ſhaped, petals nearly equal, lanceolate, waved.]

11. Gladiolus recurvus.

Lin. ſyſt. 86. *Reich.* 1. 101. *mant.* 28. *Mill. fig. t.* 235. *f.* 2. *Thunb. diſſ. n.* 3.

Leaves ſword-ſhaped, petals nearly equal, lanceolate, bowed back.

[12. Gladiolus ſpicatus.

Lin. ſpec. 53. *Reich.* 1. 101. *Thunb. diſſ. n.* 13.

Leaves linear, ſtem extremely ſimple, flowers in ſpikes.

13. Gladiolus alopecuroides.

Lin. ſpec. 54. *Reich.* 1. 102. *amoen.* 4. 301. *Thunb. diſſ. n.* 14.

Ixia plantaginea. *Ait. hort. kew.* 1. 59.

Leaves linear, ſpike diſtich, imbricate.]

14. Gladiolus anguſtus. *Narrow-leaved Corn-flag.*

Lin. ſpec. 53. *Reich.* 1. 102. *hort. cliff.* 20. *t.* 6. *Mill. fig. t.* 142. *f.* 2. *Thunb. diſſ. n.* 21. *Breyn. ic. t.* 7. *f.* 2? *Jacqu. ic. vol.* 2.

Leaves linear, ſmooth, flowers in ſpikes, diſtant, the upper ſegment of the corolla ſtraight; ſtigmas ſpatulate, undivided.

[15. Gladiolus flavus. *Yellow Corn-flag.*

Ait. hort. kew. 1. 65.

Leaves lanceolate-ſword-ſhaped, flat; the throat of the upper lip of the corolla has three laminas, ſhaped like the nail, and placed perpendicularly; bractes acuminate.

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[a] Linn. mant.

16. Gladiolus ſecuriger. *Copper-coloured Corn-flag.*
Ait. hort. kew. 1. 65.
Leaves linear-ſword-ſhaped, flat; throat of the upper lip has three laminas, ſhaped like the nail, and placed perpendicularly, bractes obtuſe.

17. Gladiolus ramoſus.
Lin. ſpec. 53. *Reich.* 1. 102.
Stem branched, leaves linear.

18. Gladiolus capitatus.
Lin. ſpec. 53. *Reich.* 1. 102.
Moræa cœrulea. *Thunb. diſſ. n.* 15.
Stem branched, heads peduncled, root tuberous.

19. Gladiolus criſpus.
Lin. ſyſt. 86. *ſuppl.* 94. *Thunb. diſſ. n.* 7. *t.* 1.
Leaves lanceolate, crenate, waved, flowers directed the ſame way, ſpikes two, tube filiform, long.

20. Gladiolus junceus.
Lin. ſyſt. 86. *ſuppl.* 94. *Thunb. diſſ.* 18.
Leaves broad-lanceolate, culm branched, flowers directed the ſame way, ſtyle ſix-parted.

21. Gladiolus anceps.
Lin. ſyſt. 86. *ſuppl.* 94. *Thunb. diſſ. n.* 17. *t.* 2.
Ixia Lapeirouſia. *Gmel. ſyſt.* 108.
Leaves ſword-ſhaped, waved, ſtem branched, ancipital, divaricate.

20. Gladiolus gramineus.
Lin. ſyſt. 86. *ſuppl.* 95. *Thunb. diſſ. n.* 26.
Petals lanceolate, briſtle-ſhaped, acuminate.

23. Gladiolus marginatus.
Lin. ſyſt. 86. *ſuppl.* 95. *Thunb. diſſ.* 20.
Ixia marginata. *Ait. hort. kew.* 1. 59.
Leaves cartilaginous-margined, ſmooth, many-nerved, ſpike lengthened, flowers alternate, nodding.

24. Gladiolus montanus.
Lin. ſyſt. 86. *ſuppl.* 95. *Thunb. diſſ. n.* 1. *t.* 1.
Leaves ſword-ſhaped, nerved, ſmooth, flowers in ſpikes, corolla ringent.

25. Gladiolus falcatus.
Lin. ſyſt. 87. *ſuppl.* 95. *Thunb. diſſ. n.* 4. *t.* 1.
Stem ſimple, leaves ſickle-ſhaped, flowers alternate, ſtyle trifid.

26. Gladiolus flexuoſus.
Lin. ſyſt. 87. *ſuppl.* 96. *Thunb. diſſ. n.* 2. *t.* 1.
Leaves linear, ſtem ſimple, flexuoſe, flowers in ſpikes, ringent, tube long.

27. Gladiolus longiflorus. *Long-flowered Corn-flag.*
Lin. ſyſt. 87. *ſuppl.* 96. *Thunb. diſſ. n.* 22.
Ixia longiflora. *Berg. cap.* 7. *Ait. hort. kew.* 1. 58.
—paniculata. *La Roche diſſ.* 26. *t.* 1.
Stem round, tube of the corolla very long, ſpathes and leaves linear, ſmooth.

28. Gladiolus ſpathaceus.
Lin. ſyſt. 87. *ſuppl.* 96. *Thunb. diſſ. n.* 25.
Stem branched, flowers in imbricate ſpikes, ſpathes membranaceous, awned, leaves plaited.

29. Gladiolus ſetifolius.
Lin. ſyſt. 87. *ſuppl.* 96. *Thunb. diſſ. n.* 19.
Stem branched, corolla ringent, the loweſt leaf filiform-ſetaceous.

30. Gladiolus Cardinalis. *Superb Corn-flag.*
Curtis magaz. t. 135.
Leaves ſword-ſhaped, many-nerved; flowers directed the ſame way, many on a ſtem; corolla upright, with a bell-ſhaped border.

DESCRIPTIONS, *&c.*

Theſe are herbaceous perennial plants, with a tuberous coated root; a ſimple ſtalk; the flowers ſpecious, in ſpikes, with a ſpathe to each flower. The germination as in the *Ixia*, with the lobe abſolutely ſeſſile[a].] Moſt of them, except the firſt, known only to modern times, and natives of the Cape.

1. Root round, compreſſed, yellowiſh, covered with a brown furrowed ſkin; hence ſpring two ſword-ſhaped leaves, embracing each other at the baſe, and between them riſes the flower-ſtalk, growing near two feet high, having one or two narrow leaves embracing it like a ſheath, and terminated by five or ſix purple flowers, one above another at ſome diſtance, ranged on the ſame ſide of the ſtalk. The ſpathe covers the flower-bud before it expands, but ſplits open lengthwiſe when it opens, and ſhrivels up to a dry ſkin, remaining about the ſeed-veſſel till the ſeeds are ripe. The three upper ſegments of the corolla are near together, the lower one turns down, and the two ſide ſegments ſpread open at top, but are curved downwards at bottom.

[The three lower ſegments are marked with a white ſpot. Seeds imbricate, as far as eight in one cell.

It was cultivated by Gerarde in his garden in 1596[b], and it was even then very common.

He gives the names not only of Corn-flag, but Corn-ſedge, and Corn-Gladin. Johnſon adds that of Sword-flag.

Mr. Miller makes three ſpecies of this: 1. the common ſort, deſcribed above; *G. flor. uno verſu diſpoſitis* of C. Bauh.—with the flowers diſpoſed on one ſide the ſtalk, varying with white and fleſh-coloured flowers. This Gerarde calls Italian Corn-flag.—2. the Italian (G. Italicus.)—*utrinque floridus* of C. Bauh.—with flowers on each ſide the ſtalk; of which he ſays there is alſo a variety with white flowers.—This Gerarde and Parkinſon figure under the name of French Corn-flag.—3. The great Corn-flag of Byzantium (G. Byzantinus)], which has larger roots, but of the ſame form; the leaves alſo are much broader and larger, with deeper channels. The flower-ſtalks riſe higher, the flowers are much larger, of a deeper red colour, and the ſheaths are longer. It makes a fine appearance when in flower, and is worthy of a place in every good garden; the rather, becauſe the roots do not increaſe ſo faſt as to be troubleſome.

[Parkinſon, beſides the French, Italian and Byzantine Corn-flags, has three varieties—the bluſh, white, and ſmall purple. He obſerves that Gerarde miſtook the French for the Italian: and that John Tradeſcante aſſured him, that he ſaw many acres of ground in Barbary ſpread over with them.

2. Flowers ſmall, all directed one way, and imbricate. Native of Ruſſia[c].

3. Stem a ſpan high, thickiſh, flexuoſe between the flowers. Leaves ſtreaked, ſmooth, bluntiſh, thoſe next the flowers ſhorter, in a double row. Upper lip of the corolla ſickle-ſhaped, narrow; ſide petals or wings of the ſame length, rhomb-ſhaped, very broad; lower lip three-parted, the leaflets ovate and equal. Native of the Cape of Good Hope[d].

4. Leaves a ſpan long and more. Stem round, villoſe, a finger's length. Flowers ſeſſile, moſtly on one ſide. Bractes three at the baſe of each germ, hirſute, acuminate; the outer an inch and half long; the inner half that length. Tube of the corolla filiform-cylindric, twice as long as the ſpathes, violet, fading to white: border funnel-ſhaped, ſix-parted; diviſions lanceolate, acuminate, a quarter only of the length of the tube, ſtraw-coloured; the three upper ones beyond the middle reflex, with a forked red ſpot at the baſe, and an angular very deep red ſpot in the middle of the ſide ones; the three lower diviſions have no ſpot. Stigmas ſomewhat wedge-ſhaped, villoſe above. Native of the Cape of Good Hope, where it was found by Thunberg and Maſſon. It flowers in june; and was introduced in 1774[e].

5. Leaves plaited at the nerves. Flowers two or three, violet, fading to white. Bractes in threes, narrow, the outer one largeſt[f].]

Root round, compreſſed, about the ſize of a ſmall Spring Crocus; the ſkin red: from this ariſe five or ſix ſword-ſhaped, hairy leaves, from two to four inches long, and one third of an inch broad, dark green, ſitting cloſe at the baſe, but ſpreading upwards, like the ſticks of a fan: between theſe riſes the flower-ſtalk, ſix or eight inches in length, naked to the top, terminated by a ſpike of deep blue flowers: corolla divided to the baſe into ſix obtuſe parts, equal in ſize and poſition. Style the length of the ſtamens dividing into three parts, each crowned by a roundiſh ſtigma. It flowers in may, and the ſeeds ripen in july; ſoon after which the ſtalk and leaves decay to the root[g].

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[a] Juſſieu.

[b] Hort. kew.
[c] Linn. ſpec.
[d] Linn. amoen.
[e] Hort. kew.
[f] Linn. ſpec.
[g] Mill. fig.

Cultivated in 1757, by Mr. Miller[h]; who raiſed it from ſeeds which were ſent him from the Cape of Good Hope.

[6. This varies with a deep blue corolla, the tube and the baſe of the ſegments a very dark purple: and with a pale purple corolla, the tube blue. It was found at the Cape by Mr. Francis Maſſon, and introduced in 1774. It flowers in june[i].]

7. From the root come out two or three narrow leaves, a foot and half long, having a longitudinal furrow in the middle, and ending in acute points; they are of a deep green, and ſtand erect. Between theſe ariſes a ſlender taper ſtalk, about the ſame length as the leaves, having one or two ſhort acute-pointed leaves on the lower part, embracing the ſtalk at their baſe. Flowers alternate, diſtant. Tube of the corolla curved downward, and not ſo long as in moſt of the other ſorts; ſegments acute, and nearly equal: pale yellow or ſulphur colour. Filaments long, erect; anthers pyramidal, dirty white. Style ſlender, terminated by a trifid, reflex ſtigma. It flowers the end of may, and the ſeeds ripen about ſix weeks after[k].

[Linneus gave the name of *triſtis* to this ſpecies, from the gloomy colour of its flowers. They are very frequently of a pale yellow or ſulphur-colour (as deſcribed above) ſhaded in particular parts with very fine pencillings, eſpecially on the under ſide[l]: but they vary much with different ſhades of white and green, yellow, fleſh-coloured, blue, purple and violet. Thunberg has diſtinguiſhed ſixteen of theſe varieties. It is commonly ſaid to produce only two flowers on a ſtem, but there are frequently more. They generally give forth a moſt agreeable fragrance in their expanſion.

The leaves very characteriſtically diſtinguiſh this ſpecies[m]: they are alternately ſheathing, linear, acute, ſtriated, ſmooth, quite entire, two or three in number, the upper ones gradually ſhorter; the loweſt is thickiſh, ſcored with a deep groove within the edge, the reſt reſemble the ſpathes, and are convoluted, but they are longer[n].

Native of the Cape of Good Hope, and cultivated in 1745, by Mr. Miller[o].

8. Stalk a foot and half high, and round. Leaves longer than the ſtalk. Flowers ſweet: tube ſubcylindric, little more than half an inch in length, whitiſh; border ſubcampanulate, ſubringent; the three upper diviſions obovate-oblong, twice as long as the tube, pale violet; the three lower narrower, that in the middle the ſame length with the three upper ones, yellow below the middle; the ſide ones ſhorter, yellow in the middle.—Native of the Cape. Mr. Francis Maſſon. Introduced 1774. It flowers in april and may[p].

9. Tube of the corolla narrow, compreſſed, little bent, an inch and half in length, pale red. Upper diviſion of the border oblong, acute, concave in the middle, and there dilated, above the middle reflex, whitiſh fleſh-colour, the ſame length as the tube; the two ſide diviſions oblong-lanceolate, ſpreading, reflex at the tip, fleſh-coloured, a little ſhorter than the upper one; the three lower diviſions linear-lanceolate, from erect ſpreading, above the middle a little reflex, whitiſh fleſh-colour, with a red tranſverſe ſpot in the middle, a little ſhorter than the upper ones; the middle ones ſharper than the others. Filaments white, half the length of the corolla; anthers oblong, linear, erect, blue. Style white, longer than the filaments: ſtigmas three, patulous, dilated at the tip into two-lobed laminas villoſe at the edge.—Native of the Cape of Good Hope. Mr. Francis Maſſon. Introduced 1774. It flowers in june[q].

10. This is of the ſame ſtature with the common ſort. Stalk a foot and half in height. Leaves ſtreaked. Flowers alternate, in a double row. Proper ſpathes two-leaved, the inner leaf ſmalleſt. Tube of the corolla long, filiform: the ſix parts of the border nearly equal, in form of a Lily, waved, eſpecially the alternate ones.—Intermediate between this genus and Ixia.—Native of the Cape. See n. 14.

11. This differs from the foregoing, in the petals not being waved, and being leſs acuminate; the tube of the corolla not filiform, lax or pendulous: in other reſpects this is very like it[r].]

Stalk ſlender; has more leaves upon it than *G. triſtis*. The flowers are ranged on one ſide the ſtalk towards the top, and ſtand pretty far aſunder. Corolla curved; ſegments of the border almoſt equal, ending in blunt points; the lower ſegments turning downwards, the upper erect, and ſpreading open: the colour pale blueiſh, approaching to white, each ſegment marked with a broad purple divided line along the middle. Anthers purpliſh, oblong, erect. Style of the ſame length with the ſtamens, crowned by a trifid reflex ſtyle. The flowers have an agreeable odour; they appear at the end of may, and the ſeeds ripen in july. It was raiſed in the Chelſea garden, from ſeeds which came from the Cape of Good Hope, and flowered there before the year 1760[s].

[12. Scape ſimple, round, ſheathed, erect, a ſpan high. Leaves four, alternate, linear, ſmooth, the lower gradually ſhorter. Flowers diſtich, imbricate, blue, about twelve pairs in a ſpike of an inch in length. It differs from the next ſpecies in having larger flowers, on a ſhorter ſpike, but broader and ovate; and a ſimple ſcape[t].

13. The ſpike covered as in Plantain, with very numerous ſmall flowers; but in a double row[u]. It varies with the ſcape ſimple and branched, with corollas white and blue[x]. This, and n. 12. are natives of the Cape.

14. Scape ſimple, or but little branched, ſheathed, round, ſtriated, ſmooth, flexuoſe-erect, a foot high. Leaves from long ſheaths, enſiform, marked with white elevated ſtreaks, entire, ſmooth, ſhorter than the ſcape, the upper ones gradually ſmaller. Flowers all on the ſame ſide, aſcending, on one or two ſpikes, a hand in length. Rachis angular, flexuoſe, twiſted, ſmooth. Spathes the length of the tube of the corolla, ſhorter than the branches, green. Segments of the border of the corolla uſually waved.—The ſame, according to Thunberg, with n. 10[y].

Cultivated in 1757, by Mr. Miller[z].

15. This differs from the next ſpecies in having the bractes acuminate, the whole corolla intenſely yellow, and the leaves a little broader. It was found near the Cape, by Mr. William Paterſon; and was introduced in 1780, by the Counteſs of Strathmore. It flowers in february and march[a].

16. Leaves ſmooth, more than a ſpan in length. Stalk roundiſh, a little ſhorter than the leaves, ſometimes branched. Bractes ſhort, ovate, obtuſe, ſometimes gaſhed at the tip, membranaceous. Corollas pale tawny: tube funnel-ſhaped, leſs than an inch in length; ſegments of the border oblong-ovate, obtuſe, ſometimes obſcurely emarginate, ſhorter than the tube; the three upper ones having in the chaps a yellow ſpot with a border of red round it, and three flat, obtuſe, yellow laminas, a line and half in diameter. Native of the Cape. Mr. Francis Maſſon. Introduced in 1774. It flowers in may[b].

18. A very large plant, with blue flowers[c]. This and the foregoing are natives of the Cape. See *Moræa.*

19. Leaves long. Stem round, with one or two crenate, waved leaves on it. Flowers numerous, upright. Glumes obtuſe, with a ſcarioſe, toothletted, red margin. Tube of the corolla twice as long as the border.—It is wholly different from *Ixia criſpa*, in having lanceolate leaves, even on the ſtem; the tube of the corolla eight times as long as the glumes, and the petals lanceolate: whereas that has linear leaves, and a leafleſs ſtalk; the tube of the corolla hardly longer than the glume, and the petals obovate. This alſo is two feet high, and that only about four inches.

Found at the Cape by Sparrmann.

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[h] Hort. kew.
[i] Curtis.
[k] Mill. fig.
[l] Ibid.
[m] Ibid.
[n] Thunberg.
[o] Hort. kew.
[p] Ibid.
[q] Ibid.
[r] Linn. mant.
[s] Mill. fig.
[t] Thunberg.
[u] Linn. ſpec.
[x] Thunberg.
[y] Ibid.
[z] Hort. kew.
[a] Ibid.
[b] Ibid.
[c] Linn. ſpec.

20. Stem a hand only in height, filiform, ſmooth, with one or two patulous branchlets. Leaves ſmooth and even, ſhorter by half than the ſtem. Flowers alternate, ſeſſile. Glumes ovate, entire. Corolla violet-coloured, with a filiform tube longer than the border. Found at the Cape by Thunberg.

21. Leaves ſtreaked, ſhorter than the ſtem; thoſe on the branches ſhort, but not narrower, decurrent, with a curled keel. Flowers alternate, at the tips of the branches. Spathes very obtuſe, purple at the edge. Tube of the corolla three or four times as long as the border.—This is allied to *Ixia corymboſa*, and reſembles it in its angular ſtalk; but differs both from that and the *palmaris* in the long, filiform tube of the corolla.

22. Stem more than a foot high, round, ſmooth and even, with few flowering branches. Leaves graſſy, almoſt the length of the ſtem, ſmooth and even, nerved, lax. Flowers few at the ends of the ſtem and branches. Spathes ovate, acuminate. Corollas whitiſh, with a violet-coloured baſe, ſmall, without a tube, ſix-parted[d].

23. Leaves a foot long, ſword-ſhaped, ſmooth and even, with the edges three times as thick as the reſt. Stems the thickneſs of a gooſe-quill. Spike very long, ſlightly flexuoſe between the flowers. Spathes diſtant, the length of the bractes, which are often jagged at the tip. Tube of the corolla twice as long as the ſpathes: ſegments of the border nearly equal, oblong, elliptic, purple.

24. Root-leaves narrow, linear, not above a line in breadth, but nearly the length of the ſtem, ſmooth and even. Stem round, leafleſs. Spike oblong, with the flowers rather remote. Upper lip or helmet of the corolla three-parted; the middle ſegment arched or bowed in, channelled, linear, ovate at the tip; lateral ſegments ſpreading, divaricate, bowed back, obovate, longer than the claw: lower lip three-parted, equal; ſegments obovate, purple, with a long claw. The ſtamens are under the middle ſegment of the upper lip.—This, with the three foregoing, was found at the Cape by Sparrmann.

25. Scape compreſſed, ſtriated, flexuoſe, ſmooth, a hand in height. One or two leaves, obverſely ſtem-claſping, ovate-lanceolate, ſickled, bluntiſh, entire, ſtriated, ſmooth. Spathes green, obtuſe, much ſhorter than the tube. Corolla blue, with a ſpreading border. Allied to Ixia exciſa:—and perhaps rather a ſpecies of that genus.

26. Scape round, flexuoſe, erect, ſmooth, a foot high. Leaves none in flowering time. Spathes oblong-lanceolate, acuminate, ſmooth, ſhorter than the tube of the corolla. Spike ovate, four or five-flowered. Corolla whitiſh fleſh-colour, with a tube double the length of the ſpathe, and a ringent border.

27. Scape round, ſimple and many-ſpiked, erect, ſmooth, a foot high and more. Leaves three or four, enſiform, nerved, ſmooth, ſhorter than the ſcape. Flowers alternate, pale fleſh-colour, very many, cloſe. Bractes membranaceous, ſtriated, very ſhort. Tube of the corolla from an inch to two inches in length, widening at top, curved, erect. It has the appearance of an Ixia, but the curved tube and ſituation of the border ſeparate it from that genus.

28. Scape ſheathed, a ſpan high, terminated by ſeveral ſpikes. Leaves enſiform, nerved, villoſe, the length of the ſcape. Flowers whitiſh, with the tube of the corolla many times longer than the ſpathes. Spikes imbricate, a finger's length. Spathes membranaceous, often torn, awned. It reſembles G. tubiflorus and plicatus, but differs in the ſpathes.

29. Scape many-ſpiked, very ſeldom ſimple, flexuoſe-erect, ſmooth, a hand high, with round erect branches. Leaves about three, linear-briſtle-ſhaped, gradually ſhorter, the loweſt very long, equalling the ſcape. Flowers alternate, white, ringent, with the tube ſcarcely longer than the ſpathes. Theſe were all found at the Cape of Good Hope by Thunberg[e].

30. Flowers fine ſcarlet, with large white ſomewhat rhomboidal ſpots on ſeveral of the lowermoſt diviſions of the corolla: ſtrong plants will throw up a ſtem three or four feet high, dividing at top into ſeveral branches. It flowers with us in july and auguſt; and is moſt probably a native of the Cape. Introduced from Holland a few years ſince, by Mr. Græffer, now gardener to the King of Naples. It firſt flowered with Meſſrs. Lewis and Mackie, nurſery-men at Kingſland, and in 1790 at Meſſrs. Grimwood's and Co. at Kenſington[f].]

PROPAGATION AND CULTURE.

1. The firſt requires no care; for when it is once planted in a garden, it will multiply too faſt, ſo as to become a diſagreeable weed. The Byzantine Corn-flag has now, therefore, generally taken its place. This is propagated by offsets which are ſent off from the roots in the ſame manner as Tulips. The roots may be taken out of the ground the end of july, when their ſtalks decay, and may be kept out of the ground till the end of ſeptember, or the beginning of october, at which time they ſhould be planted in the borders of the flower-garden, where they will thrive in any ſituation, and being intermixed with other flowers of the ſame growth, they will add to the variety.

The Cape ſorts may be increaſed by offsets, which ſhould be planted in a warm border of kitchen-garden earth, and in winter they ſhould be covered with glaſſes or mats to guard them from froſt; for I have with a ſlight ſhelter preſerved thoſe which were in pots under a common frame, and ſome which were planted in the full ground, when the froſt has not been ſevere; and I have always found that thoſe plants which were hardily treated, grew much ſtronger than thoſe which were placed in a moderate degree of warmth; ſo that where there is a conveniency of covering a warm border with glaſſes in the winter, if theſe roots are planted in the full ground, where they may be protected from froſt, there will be a greater probability of their flowering than in any other method of culture.

And alſo by ſeeds, which are frequently perfected in England; theſe ſhould be ſown at the end of auguſt, in pots filled with light earth, and placed in a ſhady ſituation till the middle of ſeptember; then the pots ſhould be removed where they may have the ſun great part of the day, and in october they muſt be placed under a hot-bed frame, where they may be protected from froſt and great rains, but enjoy the free air in mild weather. In the ſpring the young plants will appear, when they will require a little water once in eight or ten days, but it ſhould be given them ſparingly, for too much wet will rot theſe tender bulbs. In may, when the danger of froſt is over, the pots ſhould be removed to a ſheltered ſituation, where they have the morning ſun till noon; and, if the ſeaſon proves dry, they muſt be now and then refreſhed with water. Towards the latter end of june, the leaves of theſe plants will decay; then the roots ſhould be taken up, and may be mixed with ſand, and kept in a dry room till the end of auguſt, when they ſhould be planted again; and as the roots are ſmall, four or five may be planted in each halfpenny pot, filled with light earth; theſe ſhould be placed where they may have only the forenoon ſun, till the middle of ſeptember, when they ſhould have a warmer ſituation; and in october they muſt be placed under a hot-bed frame as before, and treated in the ſame way during the winter ſeaſon; and in the ſpring they muſt be placed in the open air till their leaves decay, when they may be again taken out of the ground, and treated in the ſame manner as before; but as the roots will have grown to a larger ſize when they are planted again, they ſhould each have a ſeparate half-penny pot, becauſe now they will be large enough to flower, and may be treated as the old roots.

[GLADIOLUS. See *Antholyza*, *Butomus*, *Dracæna*, *Ferraria*, *Iris*, *Lobelia*, *Pontederia*.

GLASSWORT. See *Salicornia*.

——— White. See *Chenopodium*.

GLASTENBURY THORN. See *Meſpilus*.

Glauci affinis. See *Aſtragalus*.

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[d] Linn. ſuppl.

[e] Thunb. diſſ.

[f] Curtis.

GLAUCIUM. See *Chelidonium.*
GLAUCOIDES. See *Peplis.*]

GLAUX (*of Pliny,* Γλαυξ *of Dioſcorides. Derivation uncertain: ſome deduce it from* γαλα, *milk.*)

[*Lin. gen. n.* 291. *Reich.* 314. *Schreb.* 408. *Tournef.* 60. *Juſſ.* 333.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Calycanthemæ. Salicariæ* Juſſ.

GENERIC CHARACTER.

CAL. none, unleſs the corolla be called ſo.

COR. *Petal* one, five-parted, bell-ſhaped, upright, permanent; *ſegments* obtuſe, rolled back.

STAM. *Filaments* five, ſubulate, upright, the length of the corolla. *Anthers* roundiſh.

PIST. *Germ* ovate. *Style* filiform, the length of the ſtamens. *Stigma* capitate.

PER. *Capſule* globular, acuminate, one-celled, five-valved.

SEEDS five, roundiſh. *Receptacle* very large, globular, hollowed for the reception of the ſeeds.

OBS. *The cover of the flower is perhaps a calyx more properly than a corolla.*

ESSENTIAL CHARACTER.

Cal. one-leafed, bell-ſhaped. *Cor.* none. *Capſ.* one-celled, five-valved, five-ſeeded.

SPECIES.

1. Glaux maritima. *Sea Milkwort,* or *Black Saltwort.* *Lin. ſpec.* 301. *Reich.* 1. 585. *hort. cliff.* 43. *fl. lapp.* 72. *ſuec. n.* 210. *Hudſ. angl.* 101. *With.* 246. *Relh. cant. n.* 190. *Pollich pal. n.* 238. *Krock. ſileſ. n.* 362. *t.* 39. *Sowerby engl. bot. t.* 13. *Fl. dan. t.* 548. *Sabb. hort.* 1. *t.* 31. *Berg. phyt.* 2. 79. *Baub. pin.* 215. *Raii ſyn.* 285.—minor. *Park. theat.* 1283. 2.

G. exigua marit. *Lob. obſ.* 227. 2. *Ger.* 448. *emac.* 562. *Baub. hiſt.* 3. 373. *Raii hiſt.* 1102.

Alſine bifolia, fr. coriandri, rad. geniculata. *Loeſel. pruſſ.* 13. *t.* 3.

DESCRIPTION, *&c.*

Root perennial, creeping. Stems trailing, jointed; branched a little. Leaves ſeſſile, oval-oblong, or oval-lanceolate, ſucculent; oppoſite at bottom but among the flowers alternate. Flowers almoſt ſeſſile, axillary, ſolitary, from about the middle of the ſtem, purple, greeniſh white, white or ſtriped[a].

On the ſea-coaſt, and on ſalt marſhes at a diſtance from the ſea. Even about Upſal, which is very far from the ſea[b].—It is a pretty little plant, enlivening large tracts of the dreary ſituations where it is found. The whole plant is ſucculent and ſalt to the taſte[c]. Cows eat it. It flowers in june and continues the reſt of the ſummer.] It is ſeldom cultivated in gardens.

GLAUX. See *Andrachne, Aſtragalus, Iſnardia, Peplis.*

GLECHŌMA. (*From* γληχων, *the name of a plant in Dioſcorides.*)

Engl. *Ground-Ivy.*
Fr. *Terrette, Lierre terreſtre.*

[*Lin. gen. n.* 714. *Reich.* 773. *Schreb.* 970. *Juſſ.* 113.

Claſſ. 14. 1. Didynamia Gymnoſpermia.

Nat. order of *Verticillatæ. Labiatæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, tubular, cylindric, ſtreaked, very ſmall, permanent: *mouth* five-cleft, acuminate, unequal.

COR. one-petalled, ringent. *Tube* ſlender, compreſſed: *upper lip* erect, obtuſe, ſemibifid; *lower* ſpreading, larger, obtuſe, trifid; *middle ſegment* larger, emarginate.

STAM. *Filaments* four, under the upper lip, of which two are ſhorter. Each pair of anthers converging in form of a croſs.

PIST. *Germ* four-cleft. *Style* filiform, bending beneath the upper lip. *Stigma* bifid, acute.

PER. none. *Calyx* cheriſhing the ſeeds in its boſom.

SEEDS four, ovate.

ESSENTIAL CHARACTER.

Cal. five-cleft. Each pair of anthers converging in form of a croſs.

SPECIES.

1. Glechoma hederacea. *Ground Ivy.* *Lin. ſpec.* 807. *Reich.* 3. 47. *hort. cliff.* 307. *fl. ſuec. n.* 518. *mat. med.* 149. *Hudſ. angl.* 254. *With.* 603. *Curtis lond.* 2. 44. *Woodv. med. bot.* 84. *t.* 28. *Lightf. ſcot.* 307. *Relh. cant. n.* 429. *Pollich pal. n.* 554. *Neck. gallob.* 251. *Allion. pedem. n.* 93. *Krock. ſileſ. n.* 922. *Fl. dan. t.* 789. *Berg. phyt.* 2. 61. *Fl. ruſt. t.* 61.

Calamintha hederacea. *Scop. carn. n.* 730.

Chamæclema caule procumbente radicato, fol. reniformibus rotunde crenatis. *Hall. helv. n.* 245.

Chamæciſſus. *Fuchſ. hiſt.* 876. *Baub. hiſt.* 3. 855. 2.

Hedera terreſtris. *Dod. pempt.* 394. *Lob. ic.* 1. 613. 2. *Matth.* 626. *Ger.* 705. *emac.* 856. 1. *Raii hiſt.* 567.—vulgaris. *Baub. pin.* 306. *Park. theat.* 676. *n.* 1, 2. *f.* 677. *Mor. hiſt. ſ.* 11. *t.* 21. *f.* 1. *Rivin. mon. t.* 67. 2. *Blackw. t.* 225.

β. Hedera terreſtris montana. *Baub. pin.* 306. *Park. theat.* 677. 3. *Ger. emac.* 704. 6. *Riv. mon.* 67. 1. *Vaill. par. t.* 6. *f.* 5. *Raii hiſt.* 567. 2. *ſyn.* 243. *Mor. ſ.* 2.

Leaves kidney-ſhaped, crenate or ſcalloped.

DESCRIPTION, &c.

Root perennial, ſending out trailing four-cornered ſhoots, producing roots at the joints, and ſpreading wide. The flowering ſtalks ſpring from the joints, which are woolly; theſe are upright but weak, ſquare, hirſute with hairs turning downward, from four to ſix inches high. Leaves oppoſite, wrinkled, ſomewhat hairy, on grooved petioles, as long as the leaves; they are beſet underneath with hollow dots, in which are glands ſecreting an eſſential oil, and above with little eminencies, but which do not ſecrete any odoriferous oil, ſo that this ſurface being rubbed gives out no peculiar ſcent, whereas the under ſurface affords a pleaſant reviving ſmell[d]. Peduncles axillary, oppoſite, ſhort, branched, ſupporting from three to five flowers. There is a pair of floral leaves at the branching of the peduncle, and another pair under each of the lateral flowers, they are ſubulate, or ſetaceous, and very ſmall; the middle flower has none. Calyx hairy, ſtreaked, with the teeth nearly equal. Corolla blue (ſometimes varying to white) the large middle ſegment of the lower lip marked with purple ſpots of a deeper colour, and hairy at the baſe. Stamens ſometimes in the ſpring imperfect, with filaments only half the uſual length, terminated by a reddiſh blunt point, or ſometimes by effete anthers: when perfect, the anthers, after burſting, form a croſs, or the ſhape of the letter X[e].

It is very ſtrange that Scopoli ſhould deny this character, no leſs evident than beautiful and ſingular. We can account for it only by ſuppoſing, that he muſt have examined the flowers when they were in an imperfect ſtate, which they frequently are early in the ſpring.

The leaves are often deformed with red hairy tumours, which are the galls of the Cynips Glechomæ[f]. It gradually expels plants which grow near it, and thus impoveriſhes paſtures[g]. The leaves were formerly thrown into the vat with ale to clarify it, and to give it a flavour. This was called Gill-ale; Ground-Ivy being named Gill or Gill-creep-by-ground, in ſome places. From this uſe of the plant, and the form of its leaves, it has alſo the names of Ale-hoof and Tun-hoof[h], *&c.* but it has gradually grown into diſuſe ſince the introduction of Hops. Cattle ſeem rarely to touch it; according to Linneus, ſheep eat it, horſes are not fond of it, and it is refuſed by cows, goats, and ſwine. It is ſaid to be injurious to horſes, if they eat much of it. The expreſſed juice, mixed with a little wine, and applied morning and evening, deſtroys the white ſpecks upon horſes eyes[i].

Ground-Ivy has a peculiar ſtrong ſmell, and a bitteriſh taſte, ſomewhat aromatic. It was formerly

[a] Lyons M. S. Pollich, Krocker.
[b] Lin. ſuec.
[c] Engl. bot.

[d] Withering.
[e] Curtis, Lyons M. S. Withering and Stokes in Withering.
[f] Linn. and Lightf.
[g] Linn. ſuec.
[h] Ray and Wither.
[i] Linn ſuec. from Loeſel.

in conſiderable credit for pectoral, detergent, aperient, diuretic, corroborant, and other qualities; and was recommended particularly in pulmonary and nephritic complaints. In obſtinate coughs it is ſtill a favourite remedy with the common people; but it is little preſcribed by medical practitioners, and is wholly diſcarded from the materia medica of the London College. Mr. Ray gives a remarkable inſtance of its efficacy in removing a violent and inveterate head-ach by drawing the juice of the plant up the noſtrils: but Dr. Cullen will not allow it to act any otherwiſe than as an errhine. He alſo thinks the uſe of it in ale to be frivolous; and affirms, that in many caſes where he had ſeen it employed, there was no evidence either of its diuretic or pectoral effects[k].

It is moſt uſually taken in form of an infuſion or tea; the expreſſed juice is alſo uſed with honey in coughs: a conſerve or ſyrup is alſo made with it. The diſtilled water cannot be of any avail. Some foreign phyſicians ſeem to have a better opinion of this herb than ours.

It is ſo common under hedges, on banks, in woods, and ſometimes in dry paſtures, that it is never cultivated in gardens. It varies in ſize, as well as the degree of colour in the flower, according to its ſituation. The flowers appear in april, may, and june. Thunberg obſerved it in Japan.

A plant ſo common, and ſo much eſteemed by the multitude, has of courſe many names. To ſuch as are given above we may add thoſe of Cat's-foot, Hay-maids, and Robin-run-in-the-hedge. In German it is *Gundelreben*, *Gundermann*, *Grundermann*, *Gundelrab*, *Gundrebe*, *Grundrebe*, *Gunderlunze*, *Donnerrebe*, *Erdepheu*, *Erdenkranzlein*, *Meerwurzel*; in Dutch *Aardveil*, *Hondſdraf*, *Onderhave*; in Daniſh *Vedbende*; in Swediſh *Jordrefvot*; in Italian *Ellera terreſtre*; in Spaniſh *Hiedra terreſtre*.

Glecoma. See *Glechoma* and *Stachys*.]

GLEDITSIA. (*So named by Linneus in honour of J. Gottlieb Gleditſch, of Leipſick, profeſſor at Berlin; defender of Linneus againſt Siegeſbeck; author of* Methodus Fungorum, 1753. Syſtema Plantarum a ſtaminum ſitu, 1764. *and many other ſmaller works.*)

Lin. gen. n. 1159. *Reich.* 1272. *Schreb.* 1596. *Clayton. Juſſ.* 346. *Gærtn. t.* 146. Melilobus. *Mitch.* xv.

Claſſ. 23. 2. Polygamia Dioecia.

Nat. order of *Lomentaceæ*. *Leguminoſæ* Juſſ.

GENERIC CHARACTER.

* Male, *a long, compact, cylindric ament.*

Cal. *Perianth proper* three-leaved (three-cleft, *G.*) *leaflets* patulous, ſmall, acute.

Cor. *Petals* three, roundiſh, ſeſſile, patulous, like the calyx. *Nectary* turbinate, with the other parts of the fructification growing to the mouth.

Stam. *Filaments* ſix, filiform, longer than the corolla. *Anthers* incumbent, oblong, compreſſed, twin.

* Hermaphrodite *in the ſame ament with the males, uſually terminating.*

Cal. *Perianth* four-cleft, otherwiſe as in the male.

Cor. *Petals* four, otherwiſe as in the male. *Nectary* as in the male.

Stam. as in the males.

Pist. Per. and Seed as in the female.

* Female, *a lax ament, on a diſtinct plant.*

Cal. *Perianth proper* as in the male, but five-leaved (five-cleft, *G.*)

Cor. *Petals* five, long, ſharp, from upright-ſpreading. *Nectaries* two, ſhort, like filaments.

Pist. *Germ* broad, flatted, longer than the corolla. *Style* ſhort, reflex. *Stigma* thick, the length of the ſtyle, along which it grows, pubeſcent at top.

Per. *Legume* very large, broad, extremely flatted, divided by ſeveral tranſverſe partitions, and filled with pulp.

Seeds ſolitary, roundiſh, hard, ſhining.

ESSENTIAL CHARACTER.

Herm. *Cal.* four-cleft. *Cor.* four-petalled. *Stam.* ſix. *Piſt.* one. *Legume.*

Male. *Cal.* three-leaved. *Cor.* three-petalled. *Stam.* ſix.

Fem. *Cal.* five-leaved. *Cor.* five-petalled. *Piſt.* one. *Legume.*

SPECIES.

1. Gleditſia triacanthos.

Lin. ſpec. 1509. *Reich.* 4. 354. *hort. upſ.* 298. *cliff.* 489. *Gron. virg.* 183. *Gouan monſp.* 520. *Mill. dict. n.* 1. *Hort. angl. t.* 21. *Pluk. mant. t.* 352. *f.* 1.

α. G. polyſperma. *Three-thorned Acacia.*

Legumes with many ſeeds; leaflets linear-oblong.

β. G. monoſperma. *Single-ſeeded* or *water Acacia.*

G. inermis. *Lin. ſpec.* 1509. *Reich.* 355. *Mill. dict. n.* 2. *fig. t.* 5. (Acacia). *Cateſb. car.* 1. *t.* 43. (Acacia). *Duham. arb.* 1. 266. *Pluk. alm. t.* 123. *f.* 3. (Acacia). *Gærtn. fruct.* 311. *t.* 146. *Houſt. reliqu. t.* 26.

Legumes one-ſeeded, leaflets ovate-oblong, ſpines few.

γ. G. horrida. *Strong-ſpined Acacia.*

Ait. hort. kew. 3. 444.

Leaflets ovate-oblong, ſpines very frequent—in all the varieties *axillary, and commonly triple.*

DESCRIPTION, &c.

1. α. This tree is common in moſt parts of North America, where it is known by the name of Honey Locuſt; it is called by the gardeners here Three-thorned Acacia. It riſes with an erect trunk to the height of thirty or forty feet, and is armed with long ſpines, three or four inches long, which have two or three ſmaller ones coming out from the ſide, and are frequently produced in cluſters at the knots of the ſtem. Leaves bipinnate, compoſed of ten pairs of leaflets, of a lucid green and ſeſſile. The flowers come out from the ſide of the young branches, and being of an herbaceous colour, make no figure. Legume near a foot and half long, and two inches broad. Seeds ſmooth, ſurrounded by a ſweet pulp.

The leaves ſeldom come out till june in this country, and the flowers not till the end of july. This tree does not produce any flowers till it is of a large ſize. There was one in the Biſhop of London's garden at Fulham, which produced pods in the year 1728, that came to their full ſize, but the ſeeds did not ripen.

[It appears from Plukenet that it was cultivated by Biſhop Compton in 1700[l].]

β. This has much the appearance of the other, but has fewer ſpines. The leaves are ſmaller, and the pods are oval, containing but one ſeed. It was diſcovered by Mr. Cateſby in Carolina.

[Legume coriaceous, thin, very much compreſſed, pedicelled, unequally elliptic, ſcarcely opening ſpontaneouſly, the valves being connected outwardly by a thin cellular ſubſtance. It contains only one ſeed, which is elliptic, flattiſh on both ſides, hard, very ſmooth, ſhining, of a yellowiſh-bay colour; and thus differing much from the firſt, which has a very large, broad legume, very much compreſſed, with ſeveral tranſverſe partitions, and filled with pulp[m].]

PROPAGATION AND CULTURE.

Theſe trees are propagated by ſeeds, which muſt be procured from America; thoſe of the firſt are annually ſent to England in plenty, by the title of Locuſt, or Honey Locuſt, to diſtinguiſh it from the falſe Acacia, which is frequently called Locuſt-tree in America; theſe ſeeds may be ſown upon a bed of light earth in the ſpring, burying them half an inch deep; and if the ſpring ſhould prove dry, they muſt be frequently watered, otherwiſe the plants will not come up the firſt year, for ſometimes the ſeeds remain two years in the ground before they come up; therefore thoſe who are deſirous to ſave time, ſhould ſow the ſeeds as ſoon as they arrive, and plunge the pots into a moderate hot-bed, obſerving to water them frequently; by this method moſt of the plants will come up the ſame ſeaſon, but theſe ſhould be gradually inured to bear the open air, for if they are continued in the hot-

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[k] Lewis, Curtis, Woodville.

[l] Hort. kew.

[m] Gærtner.

hot-bed, they will draw up weak; during the ſummer ſeaſon, thoſe plants in pots will require frequent waterings, but thoſe in the full ground will not dry ſo faſt, therefore need no water, unleſs the ſeaſon ſhould prove very dry. In autumn, thoſe in the pots ſhould be placed under a hot-bed frame to protect them from froſt, for theſe young plants generally keep growing late in the ſummer, and the upper part of their ſhoots being tender, the early froſts of the autumn often kill the ends of them, if they are not protected, and this frequently occaſions great part of the ſhoots decaying in winter; for which reaſon thoſe plants in the full ground ſhould be covered with mats in autumn, on the firſt appearance of froſt; for a ſmall froſt in autumn will do more miſchief to theſe young ſhoots which are full of ſap, than ſevere froſt when the ſhoots are hardened.

The following ſpring they may be tranſplanted into nurſery-beds, at a foot diſtance row from row, and ſix inches aſunder in the rows; but this ſhould not be performed till april, after the danger of hard froſt is over; for as the plants do not put out their leaves till very late, there will be no hazard in removing them any time before may. If the ſeaſon ſhould prove dry, they muſt be watered; and if the ſurface of the beds is covered with moſs, or mulch, to prevent the earth from drying, it will be of great ſervice to the plants. In theſe beds the plants may remain two years, during which time they muſt be conſtantly kept clean from weeds; and in the winter there ſhould be ſome rotten tan, or other mulch, ſpread over the ſurface of the ground to keep out the froſt. If the plants thrive well, they will be fit to tranſplant to the places where they are to remain after two years growth, for they do not bear removing when large; the beſt ſeaſon for tranſplanting theſe trees, is late in the ſpring; they thrive beſt in a light deep ſoil, for in ſtrong ſhallow ground they become moſſy, and never grow large; they ſhould alſo have a ſheltered ſituation, for when they are much expoſed to winds, their branches are frequently broken in the ſummer ſeaſon, when they are fully clothed with leaves.

[This being an elegant tree, it ſhould appear ſingly in the openings of plantations, provided it be well ſheltered from cold winds, but it is not in full leaf till the month of june.

GLINUS. (Γλινος *or* Γλειvος *is the name of a tree in Theophraſtus.*)

Lin. gen. n. 610. *Reich.* 666. *Schreb.* 836. *Loefling. Juſſ.* 316. *Gærtn. t.* 130.

Claſſ. 11. 5. Dodecandria Pentagynia.

Nat. order of *Caryophyllei.—Ficoideæ* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* five-leaved; *leaflets* ovate, concave, coloured within, permanent.

Cor. none. *Nectaries* often five, flat, reſembling petals, narrow, ſhorter than the calyx, unequally bifid or trifid.

Stam. *Filaments* about fifteen, (fifteen to twenty, *G.*), ſubulate, flat, the length of the calyx. *Anthers* erect, upright, compreſſed, twin.

Pist. *Germ* ſuperior, five-cornered. *Styles* five, ſhort. *Stigmas* ſimple. (Style one, five-cleft, *G.*)

Per. *Capſule* ovate, five-celled, five-cornered, five-valved.

Seeds very many, roundiſh, in a ſingle row under the valves, tubercled, affixed at the baſe to a ſmall ſwelling membrane.

Obs. *The nectaries of Linneus are by Gærtner called the petals.*

ESSENTIAL CHARACTER.

Cal. five-leaved. *Cor.* none. *Nectaries* cloven briſtles. *Capſ.* five-cornered, five-celled, five-valved, containing numerous ſeeds.

SPECIES.

1. Glinus lotoides. *Hairy Glinus.*
Lin. ſpec. 663. *Reich.* 2. 459. *Loefl. itin.* 145. *Gron. orient.* 143. *Burm. ind. t.* 36. *f.* 1. *Gærtn. fruct.* 2. 236.
Alſine lotoides ſicula. *Bocc. ſic.* 21. *t.* 11. *Mor. hiſt.* 2. 552.
Portulaca bœtica, luteo flore, ſpuria, aquatica. *Barrel. ic. t.* 336.
Stem hairy, leaves obovate.

2. Glinus dictamnoides.
Lin. ſyſt. 455. *mant.* 243. *Reich.* 459. *Burm. ind.* 113. *Pluk. amalth. t.* 356. *f.* 6.—conf. *t.* 12. *f.* 3.
Stem fruteſcent proſtrate, leaves orbicular tomentoſe flat, calycine leaflets lanceolate.

3. Glinus ſetiflorus.
Vahl ſymb. 3. 64. *Forſk. deſcr.* 95.
Stem ſhrubby, leaves obovate plaited, calycine leaflets ovate.

DESCRIPTIONS, &c.

1. Root annual. Capſule ovate-pyramidal, thin, puſtuled by the protuberating ſeeds. Partitions inſerted in the middle of the valves. Seeds fixed by means of very long umbilical cords to the central angle of the cells: there are about fifty in each cell, kidney-ſhaped with a beak, ſtudded with thick, ſcattered dots, ſhining and ferruginous: integument double; albumen ſcarcely any; embryo ſpiral[a].

Native of the South of Europe and the Levant. Introduced in 1788, by Monſ. Thouin[b].

2. Native of the Eaſt Indies. Stems ſcarcely the ſize of packthread, proſtrate, diffuſed, ſomewhat branched. Branches alternate, both they and the ſtems tomentoſe at top, but with hairs leſs diſtinct than in the firſt ſpecies. Leaves petioled, two or four together, ſomewhat ſharp at the baſe, without veins or nerves, with ſtellate hairs ſhorter than in G. lotoides. Peduncles at the joints, aggregate, ſhort.

3. This has the ſame habit with the two others. The whole plant is hoary with very cloſe hairs, longer than in the firſt ſpecies. Stem very much and dichotomouſly branched; branches diffuſed, jointed, a little thicker at the joints. Leaves two or four at the joints, acute at the baſe, ſubretuſe. Flowers axillary, ſeveral. Peduncles very ſhort. Spinules rigid, minute, from the baſe of the peduncles, permanent. Capſule as in G. lotoides[c].

Native of Arabia.

Glinus. See *Aizoon.*

GLOBBA. (*The vernacular name of the Malayans.*)

Lin. gen. Reich. n. 45. *Schreb.* 54. *Juſſ.* 63.

Claſſ. 2. 1. Diandria Monogynia.

Nat. order of *Scitamineæ. Cannæ* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* ſuperior, one-leafed, cylindric, with a trifid mouth, permanent.

Cor. monopetalous, cylindric; with a trifid equal mouth.

Stam. *Filaments* two, filiform, middling in length. *Anthers* faſtened longitudinally to the filaments.

Pist. *Germ* inferior. *Style* briſtle-ſhaped, of a middling length. *Stigma* ſharp.

Per. *Capſule* roundiſh, three-celled, three-valved.

Seeds very many.

ESSENTIAL CHARACTER.

Cal. ſuperior, trifid. *Cor.* equal, trifid. *Capſ.* three-celled. *Seeds* very many.

SPECIES.

1. Globba marantina.
Lin. ſyſt. 72. *Reich.* 1. 73. *mant.* 170.
Spike terminating, erect.

2. Globba nutans.
Lin. ſyſt. 73. *Reich.* 74. *mant.* 170.
G. ſilveſtris. *Rumph. amb.* 6. 140. *t.* 62, 63.
Spike terminating pendulous.

3. Globba uviformis.
Lin. ſyſt. 73. *Reich.* 74. *mant.* 171. *Rumph. amb.* 6. 138. *t.* 59. *f.* 2.
Spike lateral.

4. Globba japonica.
Lin. ſyſt. 73. *Thunb. jap.* 23.
Raceme terminating drooping, leaves ſword-ſhaped entire.

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[a] Gærtner. [b] Hort. kew. [c] Vahl.

DESCRIPTIONS, &c.

1. Stem ſimple herbaceous. Leaves alternate petioled (altogether like thoſe of *Maranta*); the petioles membranaceous and ſheathing; the ſheaths truncate at the tip. Flowers remote, each involved in an ovate bracte, longer than the flower.

This, and the ſecond and third ſpecies are natives of the Eaſt Indies[d].

2. Rumphius makes two varieties of this, the great and the ſmall. The former has a very ſtraight firm ſtem, from fourteen to eighteen feet in height, two inches in diameter at bottom, naked for ſix feet from the root, and ſtout enough for walking canes; the upper part is ſoft and is eaten in ſome places. Leaves three feet long and more than two hands broad, thin, ſmooth, with many parallel tranſverſe veins, bending upwards near the edge, forming ſlight ridges on the upper and furrows on the lower ſurface. The trunk terminates in a jointed ſtem, three ſpans in length, with a narrow boat-ſhaped leaf at each joint, hollowed above, and of a duſky red colour. Fruit the ſize of a pigeon's egg, red.

The leaves of the ſmaller ſort are more wandering, narrower, and draw more to a point at the baſe. The primary ſtem is two or three feet in length, and leafleſs; producing abundance of oblong flowers, in bunches like the Hyacinth.

3. Stem from ſeven or eight to twelve or fourteen feet high, the thickneſs of a finger. Leaves from fourteen to ſixteen inches long, and from four to ſix fingers broad, ſmooth and dark green above, pale green and lanuginoſe beneath. The fructification iſſues from the ſide of the ſtem, eighteen inches or two feet above the root, in a ſpathed bunch or ſpike a hand in length, containing many white flowers, which are ſucceeded by fruit reſembling grapes, but larger, white, becoming black or of the colour of ſmoke, and ſometimes eaten[e].

4. The ſtem is ſheathed with leaves, ſimple, round, ſtreaked, ſmooth, upright, two feet high or more. Leaves few, acuminate, ſmooth, very finely ſtreaked obliquely, a little longer than the ſheathing petioles, very thin except the midrib which is thick, deep green above, paler beneath, a foot long and two inches broad. Flowers many. Rachis flexuoſe, a hand in length. Peduncles ſcarcely a line long, nodding a little, one-flowered. Style filiform. Capſule ovate, augmented by the permanent baſe of the corolla and ſtyle, ſmooth, red, the ſize of the hep of the wild roſe. Seeds ſurrounded by a white connecting membrane, angular, ſmooth, brown.

Native of Japan; where the fruit is ripe in december and january[f].

Globe-Amaranth. See *Gomphrena.*

Globe-flower. See *Trollius.*

Globe-thistle. See *Echinops.*]

GLOBULARIA. (*So named by Tournefort from the flowers growing many together in form of a little globe or ball.*)

Fr. *Globulaire.*

Lin. gen. n. 112. *Reich.* 118. *Schreb.* 146. *Tournef. t.* 265. *Gærtn. t.* 44. *Juſſ.* 97.
Alypum. *Niſſ. in act. gall.* 1712. *t.* 18.

Claſſ. 4. 1. Tetrandria Monogynia.
Nat. order of *Aggregatæ.*—*Lyſimachiæ* Juſſ.

GENERIC CHARACTER.

Cal. *Common perianth* imbricate with ſcales the length of the diſk and equal.—*Proper* one-leafed, tubular, five-cleft, ſharp, permanent. (four or five-toothed; the teeth briſtle-ſhaped and acuminate, *G.*)

Cor. *Univerſal* nearly equal.—*Proper* monopetalous, tubular at the baſe: *border* five-parted; *upper* lip very narrow, two-parted, ſhorter; *lower* of three larger, equal ſegments.

Stam. *Filaments* four, ſimple, the length of the corollule. *Anthers* diſtinct, incumbent.

Pist. *Germ* ovate, ſuperior. *Style* ſimple, the length of the ſtamens. *Stigma* obtuſe.

Per. none. *Proper calyx* converging, incloſing the ſeed.

Seeds ſolitary, ovate.

Rec. *Common* oblong, ſeparated by *chaffs.*

ESSENTIAL CHARACTER.

Cal. common (none, or *G.*) imbricate: *proper* tubular, inferior. *Corollets* the upper lip two-parted; lower three-parted. *Recept.* chaffy.

SPECIES.

[1. Globularia longifolia. *Long-leaved Globularia.* *Ait. hort. kew.* 1. 130.
Alypum ſ. herba terribilis procerior, cortice cinereo ſcabro, fol. acuminato longiore. *Sloan. jam.* 1. 19. *t.* 5. *f.* 3.
Stem ſhrubby, all the leaves linear-lanceolate quite entire, heads axillary.]

2. Globularia Alypum. *Three-tooth-leaved Globularia.* *Lin. ſpec.* 139. *Reich.* 1. 272. *Allion. pedem. n.* 519. *D'Aſſo aragon. n.* 104.
Alypum monſpelienſium, ſ. frutex terribilis. *Bauh. hiſt.* 1. 598. *Niſſ. mem. acad. par.* 1712. 341. *t.* 18. *Park. theat.* 198. *t.* 199. *f.* 1.
A. montis Ceti, ſ. herba terribilis Narbonenſium. *Lob. Raii hiſt.* 1443.
Thymelæa fol. acutis, capitulo ſucciſæ. *Bauh. pin.* 463.
Stem ſhrubby, leaves lanceolate three-toothed and entire, heads terminating.

[3. Globularia biſnagarica.
Lin. ſpec. 139. *Reich.* 1. 272. *Pluk. alm. t.* 58. *f.* 5. *Mor. hiſt.* 3. 51. (Scabioſa).
Stem ſhrubby, root-leaves wedge-ſhaped retuſe, ſtem-leaves lanceolate.]

4. Globularia vulgaris. *Common Globularia,* or *blue Daiſy.*
Lin. ſpec. 139. *Reich.* 1. 272. *fl. ſuec. n.* 116. *hort. cliff.* 490. *Hall. helv. n.* 218. *Pollich pal. n.* 136. *Scop. carn. n.* 132. *Krock. ſileſ. n.* 199. *Gærtn. fruct.* 211.
Aphyllantes Anguillaræ. *Camer. hort.* 18. *t.* 7. *Bauh. hiſt.*
Bellis cærulea, caule folioſo. *Bauh. pin.* 262.——ſ. Globularia. *Ger.* 511. *f.* 1. *emac.* 637. 6, 7. *Raii hiſt.* 381.
Scabioſa cær. globoſa, caule folioſo. *Mor. hiſt.* 5. *ſ.* 6. *t.* 15. *f.* 46.
β. Bellis cærulea apula. *Tabern. hiſt.* 2. 709. *Ger.* 511. 6. *f.* 2. *emac.* 637. 6.
γ. B. cær. monſpeliaca. *Tabern. hiſt.* 2. 709. *Lob. adv.* 200. *ic.* 478. *Ger.* 512. *f. emac.* 637. 7.
Stem herbaceous; root-leaves three-toothed; ſtem-leaves lanceolate.

5. Globularia ſpinoſa. *Prickly-leaved Globularia.* *Lin. ſpec.* 139. *Reich.* 1. 273. *Tournef. inſt.* 476.
Bellis cærulea ſpinoſa. *Bauh. pin.* 262.
B. ſpinoſa fl. globoſo. *Bauh. prodr.* 121. *Raii hiſt.* 381.
Root-leaves crenate-prickly; ſtem-leaves quite entire mucronate.

6. Globularia cordifolia. *Wedge-leaved Globularia.*
Lin. ſpec. 139. *Reich.* 1. 273. *hort. cliff.* 491. *Hall. helv. n.* 216. *Scop. carn. n.* 133. *Jacqu. auſtr.* 3. 26. *t.* 245. *D'Aſſo aragon. n.* 106. *Mor. hiſt.* 3. 50. *ſ.* 6. *t.* 15. *f.* ult. (Scabioſa).
Bellis cær. montana fruteſcens. *Bauh. pin.* 262.
Scabioſa minima bellidis folio. *Ger. Raii hiſt.* 381.
S. Globulariæ Bellidis foliis. *Park. theat.* 488. 4.
Aphyllanti affinis, Scabioſa 5 Cluſ. Bellidi affinis. *Bauh. hiſt.*
Stem almoſt naked; leaves wedge-ſhaped three-cuſped, the middle cuſp leaſt.

7. Globularia nudicaulis. *Naked-ſtalked Globularia.*
Lin. ſpec. 140. *ſyſt.* 143. *Reich.* 1. 273. *Hall. helv. n.* 217. *Scop. carn. n.* 134. *Jacqu. auſtr.* 3. 17. *t.* 230. *Mor. t.* 15. *f.* 43. (Scabioſa).
G. pyrenaica, fol. oblongo, caule nudo. *Tournef. inſt.* 467.
Bellis cær. caule nudo. *Bauh. pin.* 262. *Raii hiſt.* 381.—ſ. Globularia. *Park. parad.* 322. *t.* 321. *f.* 9.
Stem naked, leaves quite entire lanceolate.

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[d] Linn. mant. [e] Rumphius. [f] Thunberg.

8. Globularia orientalis.

Lin. ſpec. 140. *Reich.* 1. 273. *Tournef. cor.* 35. *Stem almoſt naked, heads alternate ſeſſile, leaves lanceolate-ovate entire.*

DESCRIPTIONS, *&c.*

[Root perennial. Stem ſhrubby or herbaceous, ſimple, uſually with one head of flowers at top. Root-leaves often ſpatulate, emarginate-acuminate; ſtem-leaves ſmall or ſcarcely any. *G. Alypum* differs, in having the common calyx turbinate and very imbricate; corolla ligulate three-toothed, ſtigma bifid; ſtem becoming ſhrubby and branched, with the habit of *Protea*[a]. The leaves of all the Globularias dry black. The corollas are blue.

1. This riſes much higher than the next ſpecies, having a hard white wood with a large pith and a ſcabrous light brown or gray bark; the branches towards their ends very thick ſet with leaves, without any order; they are two inches long, and a third part of an inch broad in the middle; the nerves yellowiſh green. Flowers ſmall, blue, in round heads[b].

Native of Madeira. Introduced in 1775, by Sir Joſeph Banks, Bart. It flowers in july and auguſt[c].]

2. This has a hard woody ſtem, about two feet high, with many woody branches, beſet with leaves like thoſe of the Myrtle. The flowers are produced on the tops of the branches in a ball, and are of a blue colour.

[Native of the South of Europe. As about Montpellier, and in many parts of Narbonne and Provence. About Valentia, and ſeveral other places in Spain. In the county of Nice, and on the ſea coaſt of Uneglia. Alſo in Barbary. It flowers from auguſt to november. Cultivated in 1739, by Mr. Miller[d].

From the violent purging quality of this ſhrub, it acquired the name of *Frutex* or *herba terribilis*; and in Engliſh *Herb Terrible*: but in the abundance of purging medicines that we poſſeſs, this is ſeldom if ever uſed.

3. Stem ſhrubby. Leaves rigid, thoſe next the root rounder and cordate, but the ſtem-leaves pointed[e].

4. Stem ſlender, upright, covered with leaves, from an inch and half to ſix inches in height; and ſometimes more, ſomewhat angular, very ſimple, ſmooth, one-flowered. Root-leaves numerous, like thoſe of the Daiſy, but thicker, petioled, placed in a ring, ovate, obtuſe, quite entire, emarginate, the nerve produced into a ſmall awn or point: ſtem-leaves alternate, nearer to ſeſſile, ſmaller, three-toothed, four lines broad, from an inch to an inch and half in length: all ſmooth and of a bright green. Calyx of each floret hairy, and cloſed with villoſe hairs, the whole appearing rough. Corollets of a fine blue. Anthers, and ſtyle of the ſame colour. Germ villoſe[f].

Scopoli obſerves that the leaves of the former year are emarginate, with a dagger-point in the middle; but the freſh leaves three-toothed. He adds, that the ſtamens are ſhorter than the ſegments of the upper lip.

Native of many parts of Europe, as Sweden, the South of France, Germany, Switzerland, Auſtria, Carniola, Hungary, Savoy, Italy, Spain. I gathered it on mont Saleve in flower, in april 1779. It uſually flowers in may and june; and was cultivated by Mr. Miller in 1739. Parkinſon ſays it was (1629) very rare in our Engliſh gardens.

In Gerarde's time (1597) the blue Daiſy, or Globe Daiſy, as he calls it, was a ſtranger in England. Johnſon (Ger. emac.) gives only two figures, and adds that one might have ſerved, for they differ but in the tallneſs of their growth, and in the breadth of their leaves. He ſays nothing of their being cultivated in our gardens.

It varies with a white flower; and with a leafleſs ſtalk.

5. Root-leaves ſeveral, ſmall, ſtiff, notched, and at each notch a prickle. Stem a hand in heighth, dark green, with oblong, narrow leaves at the baſe, not notched but ending in prickles. Head of flowers longer than in the foregoing, hairy as in *Sc. Succiſa.*

Found by Albinus on the mountains of Granada[g]. It flowers in may. Cultivated by Mr. Miller before 1752[h].

6. Root large, woody, producing many tufts of leaves. Leaves gradually widening from the baſe, emarginate, with the nerve ending in a ſhort awn or ſpinule. Stem naked, except one little ſtrap, two inches high or little more, terminated by one head of flowers, ſmaller than in the other ſorts[i].

Native of Switzerland, Auſtria, Carniola, Hungary, Piedmont, Aragon. Ray found it at the foot of mont Saleve in Savoy near Geneva. It flowers in june and july. Cultivated in 1759, by Mr. Miller[k].

7. Somewhat larger than the foregoing, both in the leaves and flowers. Leaves firm like thoſe of the Bay. Stem naked, except a few little ſtraps or ſcales, ſix inches high[l]. Stem a little higher than the leaves. Flowers uſually trifid, but ſometimes quadrifid[m].

Native of Switzerland, Auſtria, Carniola, Savoy and Piedmont. Ray obſerved it near the Grand Chartreux in Dauphiné. It flowers in july. Cultivated in 1739, by Mr. Miller[n].

8. Root-leaves very many, obovate, naked, ſharp, ending in the petioles. Stem a foot high, herbaceous, quite ſimple; the leaves on it very ſmall, lanceolate, alternate, remote. There are from ſeven to ten heads at the top of the ſtem. Found by Tournefort in the Levant[o]. Cultivated by Mr. Miller in 1739.]

PROPAGATION AND CULTURE.

2. This plant may be propagated by cuttings, which ſhould be cut off in april, juſt before they begin to make new ſhoots; the cuttings ſhould be planted into pots filled with light freſh earth, and then placed into a very moderate hot-bed, obſerving to water and ſhade them until they have taken root, when they may be taken out of the bed, and inured to bear the open air by degrees. In ſummer theſe plants may be expoſed with other hardy exotic plants, and in winter they ſhould be placed under a hot-bed frame, where they may enjoy the free air in mild weather, but ſhould be ſcreened from hard froſt, which will deſtroy them, if they are expoſed thereto, but in mild winters they will live in the open air. This plant never produces good ſeeds in this country.

4, 5, 6, 7. may be propagated by parting the roots after the manner of Daiſies. The beſt ſeaſon for parting and tranſplanting of the plants is in ſeptember, that they may take new root before the froſty weather comes on. They ſhould be planted in a ſhady ſituation, and require a moiſt loamy ſoil, in which they will thrive much better than in a light ground and an open ſituation; but the plants ſhould not be removed oftener than every other year, if they are required to flower ſtrong.

1, 8. Theſe are ſomewhat tender, and ſhould be ſheltered from the froſt in winter, under a frame, but in ſummer ſhould be expoſed with other hardy exotic plants, and will require to be frequently watered in dry weather. This may be propagated by ſeeds, or by parting their roots, as was directed for the fourth ſort.

[GLOBULARIA. See *Protea* and *Saponaria.*
GLOBULARIÆ AFFINIS. See *Eriocaulon.*
GLOCHIDION. See *Bradleja.*]

GLORIŌSA. (*So named from the magnificent ſplendour of its flowers.*)

Lin. gen. n. 413. *Reich.* 446. *Schreb.* 561. *Gærtn. t.* 18. Methonica. *Tournef. mem. acad. par.* 1706. *Juſſ.* 48.

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[a] Juſſieu. [b] Sloane. [c] Hort. kew. [d] Ibid. [e] Plumier. [f] Krocker.

[g] Bauh. prodr. [h] Hort. kew. [i] Haller. [k] Hort. kew. [l] Haller. [m] Scopoli. [n] Hort. kew. [o] Linn. ſpec.

Claſſ. 6. 1. Hexandria Monogynia.
Nat. order of *Sarmentaceæ.*—*Lilia* Juſſ.

GENERIC CHARACTER.

Cal. none.

Cor. *Petals* ſix, oblong-lanceolate, waved, very long, wholly reflex.

Stam. *Filaments* ſix, ſubulate, ſhorter than the corolla, from ſtraight patulous. *Anthers* incumbent.

Pist. *Germ* globular. *Style* filiform, longer than the ſtamens, inclined. *Stigma* triple, obtuſe.

Per. *Capſule* ſuperior, oval, three-lobed, three-celled, three-valved.

Seeds ſeveral, globular, berried, in two rows.

Obs. *This genus is allied to* Erythronium.

ESSENTIAL CHARACTER.

Cor. ſix-petalled, waved, reflex. *Style* oblique.

SPECIES.

1. Glorioſa ſuperba. *Superb Lily.*
Lin. ſpec. 437. *Reich.* 2. 49. *mant.* 364. *hort. cliff.* 121. *fl. zeyl. n.* 122. *Gærtn. fruct.* 69. *Darwin.* 2. 13.
Methonica malabarorum. *Herm. lugdb. t.* 689. *Pluk. alm. t.* 116. *f.* 3.
Lilium zeylanicum ſuperbum. *Comm. hort.* 1. 69. *t.* 35. *Rudb. elyſ.* 2. 178. *f.* 7.
Mendoni. *Rheed. mal.* 7. 107. *t.* 57.
Leaves tendril-bearing.

2. Glorioſa ſimplex.
Lin. ſyſt. 325. *Reich.* 2. 49. *mant.* 62.
G. cærulea. *Mill. dict. n.* 2.
Leaves acuminate.

DESCRIPTIONS, &c.

1. This has a long fleſhy root of a whitiſh colour, and a nauſeous bitter taſte, from the middle of which ariſes a round weak ſtem, requiring ſupport, and with that growing to the height of eight or ten feet. Leaves ſmooth, about eight inches long, and one inch and a half broad at the baſe, growing narrower till within two inches of the end, which runs out in a narrow point, and ends in a tendril. Flowers at the upper part of the ſtem, from the ſide, on ſlender peduncles, hanging down, at firſt of an herbaceous colour, but changing to a beautiful flame-colour.

[Stem a fathom in height, round, with two oppoſite, lateral branches; above theſe it puts forth a peduncle from each axil. Leaves alternate, but under the branches in threes [a].

Capſule turbinate, the outer coat leathery and opaque: valves rounded at the back, marked with a depreſſed longitudinal line, ſmooth; within ſtreaked with tranſverſe parallel lines, ſhining like ſilk, bay-yellow, gaping by the inner future. The partitions are formed from the edges of the valves bent in; they are folded, and united at the axis of the fruit. Seeds as far as twelve in each cell, acuminate towards the navel, ſcarlet. Parts of the embryo folded together [b].

This fine plant is native of Guinea, as well as the Eaſt Indies; and was introduced here in 1690, by Mr. Bentick [c].]

It flowers in june and july, but ſeldom perfects ſeeds in this country. The ſtalks decay in autumn, the roots remain inactive all the winter, and new ſtalks come out in march. The roots and every part of the plant are poiſonous.

2. Stem climbing. Leaves ſmooth, about three inches long and two broad, ending in acute points, but having no tendril. The ſtalks as yet have not grown more than two feet high, but have the appearance of climbing. The leaves have a ſtrong diſagreeable ſcent on being handled. It is ſaid to have a blue flower. The ſeeds were ſent to Mr. Miller by Monſ. Richard, gardener to the French King at Trianon, and were brought from Senegal by Monſ. Adanſon.

[This plant has not appeared in any of the gardens either in France or England, nor was there any ſpecimen of it in Mr. Miller's herbarium; it is doubtful therefore what it might have been.]

PROPAGATION AND CULTURE.

As theſe plants rarely produce ſeeds in this country, they are generally propagated by their roots; thoſe of the firſt ſort creep and multiply pretty faſt, but the ſecond has not as yet put out any offſets; but as the plants are young, we cannot as yet ſay how they may increaſe when they are of a proper age. Theſe roots may be taken out of the ground when their ſtalks are decayed, and preſerved in ſand during the winter ſeaſon, but they muſt be kept in the ſtove, or a warm room, where they can receive no injury from the cold; and in the ſpring they muſt be planted in pots filled with light earth, and plunged into the tan-bed in the ſtove; but others chuſe to let the roots continue in the ground all the winter, keeping the pots always in the tan-bed; where this is practiſed, the roots ſhould have very little water in the winter; for as they are then in an inactive ſtate, moiſture at that time frequently rots the roots.

Toward the latter end of march, or the beginning of april, their ſtalks will appear, when there ſhould be ſome tall ſticks put down by them to ſupport them, otherwiſe they will trail over the neighbouring plants, and the firſt ſort will faſten to the plants by the tendrils. The ſtalks of this ſort will riſe ten or twelve feet high, if the roots are ſtrong, and ſome of them will produce two or three flowers; theſe make a fine appearance in the ſtove, during their continuance, which is ſeldom more than ten days or a fortnight. In ſummer, when the plants are growing, they will require frequently to be watered, but they muſt not have it in too large quantities, for they are very ſubject to rot with much wet at any ſeaſon. Thoſe roots which are not taken out of the pots in winter, ſhould be tranſplanted and parted the beginning of march, before they put out new fibres, or ſtalks, for they muſt not be removed when they are in a growing ſtate; the pots ſhould not be too large; for unleſs they are confined, they will not put out ſtrong ſtalks; the largeſt roots may be planted in twopenny pots, but the ſmall ones will require only pots of about five or ſix inches over at the top.

[GLOSSŎMA. (*From* Γλωσσα, *the tongue.*)

Lin. gen. Schreb. n. 1728.—Votomita. *Aubl.* 35. *Juſſ.* 382.
Claſſ. 4. 1. Tetrandria Monogynia.
Nat. order of *Rhamni.* Juſſieu.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, turbinate, four-toothed, ſuperior, permanent.

Cor. *Petals* four, lanceolate, acute, bowed back. *Nectary* a rim round the baſe of the ſtyle.

Stam. *Filaments* four, very ſhort. *Anthers* oblong, almoſt united into a cylinder, prolonged at the tip into a membranaceous ſtrap or ſcale, gaping on the inſide.

Pist. *Germ* inferior. *Style* filiform, the length of the ſtamens. *Stigmas* four, acute.

Per. *Drupe* ſpear-ſhaped, one-celled, crowned with the calyx.

Seed ſingle, ovate, ſtreaked.

ESSENTIAL CHARACTER.

Cal. turbinate four-toothed, ſuperior. *Cor.* four-petalled. *Anth.* almoſt united, with a membranaceous ſcale at the end. *Stigmas* four. *Drupe.*

SPECIES.

Gloſſoma guianenſis.
Votomita guianenſis. *Aubl. guian.* 91. *t.* 35.

DESCRIPTION, &c.

This is a middle-ſized ſhrub, five or ſix feet high, the bark brown, the wood yellow, hard and compact; branches jointed, four-cornered. Leaves oppoſite, cruciate, ſix inches and a half long, and two and a half wide, entire, ſmooth, thick, elliptic, acuminate, on very ſhort petioles. Stipules ſhort, acute, at the baſe of the petioles, deciduous. Peduncles axillary, bearing two, three, or four flowers, each on its proper pedicel, bracted at the baſe. Corolla white.

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[a] Linn. mant.
[b] Gærtner.
[c] Hort. kew.

Native of Guiana, and flowering in ſeptember[d]. Votomita is the vernacular name.

GLOSSOPETĂLUM. (*Tongue-petalled: each petal having a ſtrap or tongue at the end.*)

Lin. gen. Schreb. n. 526.—Goupia. *Aubl. t.* 116. *Juſſ.* 378.

Claſſ. 5. 5. Pentandria Pentagynia.

Nat. order of *Rhamni.* Juſſieu.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, very ſmall, five-toothed, permanent.

Cor. *Petals* five, lanceolate, ſpreading, acute; at the tip of each a linear-lanceolate, truncate, ſtrap, nearly the length of the petal, and lying on it.

Stam. *Filaments* five, very ſhort. *Anthers* roundiſh.

Pist. *Germ* roundiſh, ſurrounded by a *gland*, bearing the petals and ſtamens. *Style* none. *Stigmas* five, acute.

Per. *Berry* roundiſh, five-grooved, one-celled.

Seeds five, angular.

ESSENTIAL CHARACTER.

Cal. very ſmall, five-toothed. *Pet.* five, with a ſtrap at the tip of each. *Berry.*

SPECIES.

1. Gloſſopetalum glabrum.
Goupia glabra. *Aubl. guian.* 296. *t.* 116.
Leaves ſmooth.

2. Gloſſopetalum hirſutum.
Goupia hirſuta. *Aubl. guian.* 296.
Leaves hairy.

DESCRIPTIONS, &c.

1. This is a tree, the trunk of which riſes to the height of ſixty feet and more, and is from two to three feet in diameter. The bark is ſmooth and gray; the wood white and of a looſe texture. Leaves alternate, ſmooth, ſhining, firm, entire, ovate-lanceolate, ending in a long point. The midrib divides them unequally. The petiole is ſhort, and has two ſmall, narrow, deciduous ſtipules at the baſe. Peduncles ſolitary, axillary, two inches long, bearing many flowers in a ſpherical head. Corolla yellow. Berry black.

Native of Guiana, flowering in november. The natives make canoes of the trunk.

2. The trunk of this ſpecies is only from twenty to twenty-five feet in height. The bark is wrinkled, blackiſh marked with white. The leaves are covered with ſhort hairs on both ſides. Theſe are uſed againſt inflammations in the eyes; they are bitter, as is alſo the bark.

Native of Guiana and Cayenne[e].

Goupi is the vernacular name.

GLOXINIA. (*So named by L'Heritier, in memory of Benjam. Petr. Gloxin of Colmar, author of* Obſervationes Botanicæ, *Argent.* 1785. 4°.)

L'Herit. ſt. nov. 149. *Ait. hort. kew.* 2. 331.

Claſſ. 14. 2. Didynamia Angioſpermia.

Nat. order of *Perſonatæ. Campanulaceæ,* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* ſuperior, five-leaved: *leaflets* equal, lanceolate, ſerrulate at the tip, the three upper ones nerved, the two lower bent down with the nectary; permanent.

Cor. monopetalous, irregularly campanulate; *tube* ſcarcely any; *border* oblique, five-cleft, ſegments roundiſh, the four upper ſpreading and entire, the loweſt ſtraight, concave, toothed.

Stam. *Filaments* four, with the rudiment of a fifth, two ſcarcely ſhorter, inſerted into the receptacle, faſtened to the lower margin of the corolla, ſickled, pubeſcent, converging laterally above. *Anthers* ovate, two-celled, peltate, united, within the opening of the corolla.

Pist. *Germ* inferior, turbinate, ſtriated. *Style* filiform, the length of the ſtamens. *Stigma* capitate, the length of the anthers.

Per. *Capſule* one-celled (or half-celled). *Receptacles* two, oppoſite, two-parted, faſtened to the ſides of the capſule by the partition.

Seeds very numerous, inſerted into the receptacles.

Obs. *Diſtinct from* Martynia *by its inferior germ, &c. From* Geſneria *by its bell-ſhaped corolla, with the upper ſegment bent back. From* Cyrilla *by its bell-ſhaped corolla, without the tricallous mouth.* L'Herit.

ESSENTIAL CHARACTER.

Cal. ſuperior, five-leaved. *Cor.* bell-ſhaped, with the border oblique. *Filaments* with the rudiment of a fifth, inſerted into the receptacle.

SPECIES.

1. Gloxinia maculata. *Spotted Gloxinia.*
L'Herit. ſt. nov. 149. *Ait. hort. kew.* 2. 331.]
Martynia perennis. *Lin. ſpec.* 862. *Reich.* 3. 142. *hort. cliff.* 322. *t.* 18. *Mill. dict. n.* 2. *Ehret. pict. t.* 9. *f.* 2. *Medic. bot. beob.* 1783. *p.* 238. *Glox. obſ. bot.* 13.

DESCRIPTION, &c.

Root perennial, thick, fleſhy, divided into knots, which are ſcaly, ſomewhat like thoſe of Toothwort. Stems ſeveral, about a foot high, thick, ſucſulent, purpliſh. Leaves oblong, thick, ſeſſile, ſerrate, rough on their upper ſide, where they are of a dark green, but their under ſide is purpliſh. Stem terminated by a ſhort ſpike of blue flowers: [or rather an erect raceme, leafy or bracted; in which the flowers are axillary, ſolitary, peduncled, bright blue, and ſweet-ſcented. Calyx coloured at the tips of the leaflets underneath. Corolla hirſute on the outſide, inſerted into the receptacle, larger than the calyx: the baſe is gibbous in front, very large, melliferous within and dark purple[f].

Native of South America,] where it was diſcovered about Carthagena by Mr. Robert Millar, who ſent the ſeeds to Europe. [Mr. Philip Miller cultivated it in 1739[g].]

PROPAGATION AND CULTURE.

This plant muſt be conſtantly preſerved in the ſtove, and plunged into the bark-bed. During the winter ſeaſon much water will rot the roots. In the middle of march, juſt before it begins to ſhoot, the roots may be parted, and tranſplanted into middle-ſized pots, filled with rich light earth, and plunged into the bark-bed, which ſhould then be renewed with freſh tan. When the plants come up, they muſt be frequently refreſhed with water in ſmall quantities, and as the ſeaſon becomes warmer a large ſhare of freſh air ſhould be admitted. They ſhould not be placed where they are over-hung or ſhaded by other plants; nor ſhould they be ſhifted or tranſplanted when they are in leaf, for that will prevent their flowering. Since this plant increaſes very faſt by the roots, there is no neceſſity for uſing other methods to propagate it; otherwiſe the ſhoots of the young ſtalks will take root, if they are planted in pots filled with light earth, and plunged into a hot-bed, during any of the ſummer months.

[GLUTA.

Lin. gen. Reich. n. 1109. *Schreb.* 368. *Juſſ.* 427.

Claſſ. 5. 1. Pentandria Monogynia.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, very thinly membranaceous, bell-ſhaped, obtuſe, ſhorter than the germ, deciduous.

Cor. *Petals* five, lanceolate, longer than the calyx, ſpreading at top, but below as far as the middle glued to the column of the germ.

Stam. *Filaments* five, briſtle-ſhaped, of a middling length, inſerted into the tip of the column. *Anthers* verſatile, roundiſh.

Pist. *Germ* obovate, ſitting on an oblong *column. Style* filiform, of a middling length. *Stigma* ſimple.

Per.

Seed

Obs. *If the petals be ſeparated from the column of the germ, the ſituation of the ſtamens will be as in* Paſſiflora.

ESSENTIAL CHARACTER.

Cal. bell-ſhaped, deciduous. *Pet.* five, glued at bottom to the column of the germ. *Filam.* inſerted

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[d] Aublet.

[e] Ibid.

[f] L'Heritier.

[g] Hort. kew.

ſerted into the tip of the column. *Germ* ſitting on an oblong column.

SPECIES.

1. Gluta Benghas.
Lin. ſyſt. 821. *Reich.* 4. 46. *mant.* 293.

DESCRIPTION, *&c.*

A tree, with branches leafy at the end. Leaves alternate, ſeſſile, broad lanceolate, about a foot in length, veined, naked; on the flowering branches only a hand long, more obtuſe and crowded. Panicle terminating, peduncled, with flowers the ſize of thoſe of Cabbage.—Fructification ſingular: and if we were to ſuppoſe the petals to be ſeparated from the column, the ſituation of the ſtamens would be as in Paſſiflora.—Native of Java[h].

Compare it with *Helicteres, Sterculia,* &c. and obſerve whether the fruit be one-celled, as in *Paſſiflora,* or many-celled as in *Helicteres,* &c.[i]]

GLYCINE. (*From* γλυκυς, *ſweet.*)
Lin. gen. n. 868. *Reich.* 942. *Schreb.* 1182. *Juſſ.* 357. *Gærtn. t.* 154. Apios. *Boerh.*
Claſſ. 17. 4. Diadelphia Decandria.
Nat. order of *Papilionaceæ,* or *Leguminoſæ.*

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, compreſſed; *mouth* two-lipped: *upper lip* emarginate, obtuſe; *lower* longer, trifid, acute; the middle tooth more produced.

COR. papilionaceous. *Banner* obcordate, the ſides bent down, the back gibbous, the tip emarginate, ſtraight, repelled from the keel. *Wings* oblong, towards the tip ovate, ſmall, bent downwards. *Keel* linear, ſickle-ſhaped, bent upwards, at the tip preſſing the banner upwards, obtuſe, towards the tip broader.

STAM. *Filaments* diadelphous (ſimple and nine-cleft) only a little divided at the tip, rolled back. *Anthers* ſimple.

PIST. *Germ* oblong. *Style* cylindric, rolled back in a ſpiral. *Stigma* obtuſe.

PER. *Legume* oblong.

SEEDS kidney-form.

OBS. G. Apios & fruteſcens *have two-celled legumes.* G. monoica *is ſingular in this family.—This is a difficult genus, and being made up of heterogeneous ſpecies, it requires farther conſideration.* G.

ESSENTIAL CHARACTER.

Cal. two-lipped. *Cor.* the keel turning back the banner at the tip.

SPECIES.

[1. Glycine ſubterranea.
Lin. ſpec. 1023. *ſyſt.* 659. *Reich.* 3. 452. *dec.* 37. *t.* 19. *Lour. cochinch.* 457.
Arachis africana. *Burm. prodr.* 22.
Arachidna phaſeloides americana. *Herm. prodr.* 314.
Phaſeloides mariana procumbens, anguſtiori folio, triphyllos, fl. gemello. *Raii ſuppl.* 437.
Mandubi de Angola. *Marcgr. braſ.* 43. *Raii hiſt.* 919. 4.
Leaves ternate radical, ſtalks procumbent flexuoſe, peduncles two-flowered.

2. Glycine monoica. *Pale-flowered Glycine.*
Lin. ſpec. 1023. *ſyſt.* 659. *Reich.* 452.
G. bracteata. *Lin. ſpec. edit.* 1. 754. *Gron. virg.* 2. 107.
G. fol. tern. pedicellis bracteatis. *Gron. virg.* 1. 173.
Phaſeolus ſupra & infra terram fructus gerens. *Boerh. lugdb.* 2. 28. *n.* 18.
Leaves ternate almoſt naked, ſtalks hairy, racemes pendulous, fruit-bearing flowers apetalous.

3. Glycine debilis. *Hairy Glycine.*
Ait. hort. kew. 3. 34.
Leaves ternate, leaflets oval hairy underneath; legumes ſubſolitary linear many-ſeeded: ſtyle permanent upright.

4. Glycine caribæa. *Trailing Glycine.*
Ait. hort. kew. 3. 34. *Jacqu. ic.* 1. *t.* 146. *collect.* 1. 66.
Leaves ternate ſubvilloſe, leaflets rhomb-ſhaped; racemes patulous; legumes hirſute; ſtalk ſhrubby twining.

5. Glycine triloba. *Three-lobed Glycine.*
Lin. ſyſt. 659. *Reich.* 453. *mant.* 516. *Burm. ind.* 162. *t.* 50. *f.* 1.
Phaſeolus trilobatus. *Schreb. in nov. act. A. N. C. tom.* 4. 132. *fig.*
P. aconitifolius. *Jacqu. obſ.* 3. *p.* 2. *t.* 52.
P. maderaſpatanus, &c. *Pluk. alm. t.* 120. *f.* 2.
Dolichos trilobatus. *Lin. mant.* 101.
Leaves ternate, leaflets lobed; ſtalk proſtrate; peduncles two-flowered.

6. Glycine villoſa. *Villoſe Glycine.*
Lin. ſyſt. 659. *Thunb. jap.* 283.
Leaves ternate three-lobed villoſe; racemes axillary.

7. Glycine javanica. *Java Glycine.*
Lin. ſpec. 1024. *Reich.* 453. *Thunb. in Linn. tranſ.* 2. 340.
Leaves ternate; ſtalk villoſe; petioles rough-haired; bractes lanceolate minute.]

8. Glycine comoſa.
Lin. ſpec. 1024. *ſyſt.* 659. *Reich.* 453. *Gron. virg.* 85–107.
Phaſeolus marianus ſcandens, flor. comoſis. *Petiv. muſ.* 453.
Leaves ternate hirſute; racemes lateral.

[9. Glycine phaſeoloides.
Swartz prodr. 105. *Brown. jam.* 296. 2. *Plum. cat.* 12. (Phaſeolus).
Leaves ternate villoſe underneath, racemes terminating.]

10. Glycine tomentoſa. *Downy Glycine.*
Lin. ſpec. 1024. *ſyſt.* 659. *Reich.* 454. *Gron. virg.* 81–106. *Dill. elth.* 30. *t.* 26. *f.* 29. (Anonis).
β. Dolichos pubeſcens. *Lin. ſpec.* 1021. *Jacqu. hort.* 2. *t.* 101.
Leaves ternate tomentoſe; racemes very ſhort, axillary; legumes two-ſeeded.

[11. Glycine reticulata. *Netted-leaved Glycine.*
Swartz prodr. 105. *Ait. hort. kew* 3. 35. *Vahl ſymb.* 3. 88.
Leaves ternate oblong-lanceolate pubeſcent the veins like net-work underneath; racemes axillary ſubſeſſile; legumes oblong compreſſed.

12. Glycine bituminoſa. *Clammy Glycine.*
Lin. ſpec. 1024. *Reich.* 454. *Gærtn. fruct.* 2. 343. *Herm. lugdb.* 492. *t.* 493. (Phaſeolus).
Leaves ternate; flowers racemed; legumes tumid villoſe.

13. Glycine Nummularia.
Lin. ſyſt. 660. *Reich.* 454. *mant.* 571.
Leaves ternate very obtuſe; racemes with flowers in pairs; legumes ſeſſile ſuborbiculate compreſſed.

14. Glycine labialis. *Labiate Glycine.*
Lin. ſyſt. 660. *ſuppl.* 325.
Twining; leaves ternate, obovate, ſomewhat hoary; flowers axillary heaped, corolla ſomewhat two-lipped.

15. Glycine ſtriata.
Lin. ſyſt. 660. *ſuppl.* 326. *Jacqu. hort.* 1. 32. *t.* 76.
Twining; leaves ternate oblong very ſoftly hoary; racemes axillary the length of the leaves; legumes extremely hirſute.

16. Glycine roſea.
Forſt. fl. auſtr. n. 271.
Twining; leaves ternate, leaflets cordate-ovate acute quite entire, peduncles three-flowered; legumes compreſſed keeled one-ſeeded.

17. Glycine lucida. *Shining Glycine.*
Forſt. fl. auſtr. n. 272.
Twining; leaves ternate, leaflets ovate acuminate quite entire; racemes terminating glandular, pedicels in threes; legumes inflated containing two ſeeds.

18. Glycine ſuaveolens. *Sweet-ſmelling Glycine.*
Lin. ſyſt. 660. *ſuppl.* 326.
Shrubby, upright, hoary; leaves ternate ovate, acute; flowers axillary, ſolitary; legumes containing two ſeeds.]

19. Glycine Apios. *Tuberous-rooted Glycine.*
Lin. ſpec. 1025. *ſyſt.* 660. *Reich.* 455. *hort. upſ.* 227. *cliff.* 365. *Gron. virg.* 107. *Mor. hiſt.* 2. 105. *f.* 2. *t.* 9. *f.* 1. (Aſtragalus).

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[h] Linn. mant.

[i] Juſſieu.

Apios americana. *Corn. canad.* 200. *t.* 201. *Stiſſ. bot. t.* 29. *Raii hiſt.* 937.
Terræ glandes americanæ ſ. virginianæ. *Park. theat.* 1062. *f.* 6.
Leaves unequally pinnate, ovate-lanceolate, with ſeven leaflets.

20. Glycine fruteſcens. *Shrubby Glycine,* or *Carolina kidney-bean-tree.*
Lin. ſpec. 1025. *ſyſt.* 660. *Reich.* 455. *hort. cliff.* 361. *Hort. angl. t.* 55.
Leaves unequally pinnate; ſtalk perennial.

21. Glycine monophylla. *Simple-leaved Glycine.*
Lin. ſyſt. 660. *Reich.* 455. *mant.* 101. *Pluk. amalth. t.* 454. *f.* 8. (Lens).
Crotalaria Aſarina. *Berg. cap.* 194.
Leaves ſimple, cordate; ſtalk pubeſcent, three-cornered.

[22. Glycine picta.
Vahl ſymb. 2. 81. *Aubl. guian.* 766. *t.* 306. (Cytiſus).
Leaves ternate, lanceolate, villoſe, racemes axillary, peduncled, ſtem erect, ſhrubby.

23. Glycine bimaculata.
Curt. magaz. 263.
Stem twining, ſmooth and even, leaves ſimple, cordate-oblong, racemes many-flowered.

24. Glycine rubicunda.
Curt. magaz. 268.
Stem perennial, twining, leaves ternate; leaflets ſub-oval, quite entire, peduncles ſubtriflorous.

25. Glycine coccinea.
Curt. magaz. 270.
Leaves ternate, leaflets roundiſh, waved.

DESCRIPTIONS, *&c.*

The Glycines are moſtly perennial * herbaceous plants, with twining ſtems, ſometimes ſhrubby at the baſe; in the two firſt ſpecies creeping, and ripening their fruit under ground. In the nineteenth and twentieth ſpecies the leaves are unequally pinnate; in the laſt they are ſimple; in all the reſt ternate: the leaflets of all as in *Dolichos articulata,* with their petioles in like manner awned, or glandular: the ſtipules diſtinct from the petiole: the peduncles axillary, with one or two flowers, or elſe with many flowers in racemes, frequently having a pair of bractes. If the legume be bilocular in the two ſpecies which have bipinnate leaves, they are perhaps of a diſtinct genus, or might with more propriety be aſſociated with the *Aſtragali.* It may be doubted whether the flowers of *G. monoica* be really ſexually diſtinct, or rather hermaphrodite, as in other leguminous plants that ripen their fruit under ground. It is alſo a doubt whether *G. monophylla,* the only ſpecies with ſimple leaves, belongs to this genus [k].

Two of the ſpecies come from the Cape of Good Hope; five from the iſlands in the South Seas. The reſt are natives of the Eaſt and Weſt-Indies, Virginia and Carolina. Europe produces none of them.

1. *Root* annual. *Stalks* ſeveral, a ſpan in length, very rigid, cloſe to the ground, or deſcending to it, round, hairy, unbranched. *Leaves* alternate, upright, petioled; leaflets ſpreading, petioled, oblong, quite entire, emarginate, ſmooth, veined, flat, nearly equal: petioles linear, three-ſided, ſtreaked, very long, ſwelling at their inſertion, very ſmooth, upright; petiolules very ſhort, round, hirſute, bowed in. *Stipules* two, lateral, permanent, very ſhortly peltate, ovate, quite entire, very ſmall, hairy, flat: partial ſtipules to each lateral leaflet, ſolitary; to the middle one two, oblong, ſmooth, ſeſſile, upright, concave. *Peduncles* axillary, ſolitary, drooping, filiform, hairy, as long as the internodes of the ſtalk, ending in a globular ſmooth calloſity, below which are the pedicels, oppoſite, half the ſize of the peduncle, round, ſmooth, reflex, rigid. *Flowers* upright, the ſize of thoſe in *Ervum tetraſpermum.* Calyx four-cleft; the ſegments lanceolate, ſharp, ſtraight, the uppermoſt larger than the reſt, and emarginate: it is ſmooth, green, and ſhorter than the tube of the corolla. Corolla pale yellow: banner obovate, ſtreaked, upright: wings very blunt, as long as the banner, ſpread out: keel as long as the wings, blunt. Germ linear, ſmooth, green: ſtyle hirſute on the upper ſide. Legume lens-ſhaped, ſmooth; containing one round ſeed.—As ſoon as it is out of flower the peduncle perforates the earth as in *Trifolium ſubterraneum,* and *Arachis hypogæa,* and the ſeeds ripen under ground. It is a native of Braſil and Surinam, whence it was brought in the year 1762, by Dahlberg, and flowered in the bark ſtove, in the botanic garden at Upſala, but did not ripen its ſeed there [a].

It is common on the eaſtern coaſt of Africa, the ſeeds which were brought thence by Loureiro, grew, bore flowers and fruit for two years in Portugal, but the third year did not produce any ſeed [b].

In Surinam it is called *Gobbe Gobbe,* and is planted there in a ſandy ſoil with the addition of a little clay. It bears abundance of fruit, which is a welcome repaſt to the inhabitants, boiled whilſt yet unripe like peas [c].

2. Stalk gray, with reverſed hairs. Stipules ovate, upright. Racemes many-flowered. Flowers like thoſe of *Vicia Cracca,* with the banner pale violet, the wings and keel white; they have ſtamens and piſtils, but the former being effete, they bear no fruit; the lower peduncles are longer, hanging down, and one-flowered; this flower has the rudiment of a calyx and piſtil, but no corolla; it bears a legume containing one or two ſeeds. Here, therefore, the laws of fructification are the ſame as in *Viola mirabilis* [d].—This alſo perfects the fruit underground, like *Lathyrus ſubterraneus* [e].—Native of North-America, and Japan. It flowers here in ſeptember. Introduced in 1781, by Mr. William Curtis [f].

3. Root biennial.—Native of the Eaſt-Indies; where it was found by John Gerard Koenig, M.D. —Introduced in 1778, by Sir Joſeph Banks, Bart. It flowers in june and july [g].

4. Stems aſh-coloured, the thickneſs of a quill, ſmooth: the younger branches green and herbaceous. Leaves petioled; leaflets acute. Stipules to the common petioles awl-ſhaped, ſhort, ferruginous. Younger branches and leaves ſomewhat rugged to the touch from hairs not viſible to the naked eye. Racemes axillary, lateral, ſlender, elongated, many-flowered. Corolla yellow, the banner variegated underneath with purple lines. Legume an inch long [h].

Native of the Weſt-Indies. It was cultivated before 1742, by Robert James Lord Petre: and flowers in ſeptember and october [i].

5. The whole plant is proſtrate, and does not climb. The root is annual. The flowers are yellow, ſmall, and generally two together. Legumes cylindric.—Native of the Eaſt-Indies [k]. It is probably a Phaſeolus.

6. Stem filiform, angular, twining, flexuoſe, tomentoſe, as is alſo the whole plant. Leaves petioled: all the leaflets, eſpecially the middle one, three-lobed, ſharp, nerved, half an inch in length; the middle one larger, and on a longer petiole. Raceme peduncled, with two, four or five flowers; in which it differs from *G. tomentoſa.* Native of Japan [l].

7. Stem twining, as in *Phaſeolus,* with yellow, reflex hairs ſcattered over it. Leaves of *Phaſeolus.* Pedicels yellow, with cloſe hairs. Stipules, to the petioles oval-oblong, to the peduncles lanceolate. Peduncles the length of the leaves, terminated by an ovate-oblong, cloſe ſpike of nodding violet-coloured flowers, with very minute bractes between them.—Native of the Eaſt-Indies [m]; and near Naga-

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* The firſt is annual, and the third biennial. The fifth is ſaid to be annual, and perhaps another or two may be ſo.

[k] Juſſieu.

[a] Linn. dec.
[b] Loureiro.
[c] Linn. dec.
[d] Linn. ſpec.
[e] Linn. ſyſt.
[f] Hort. kew.
[g] Ibid.
[h] Jacquin.
[i] Hort. kew.
[k] Linn. mant.
[l] Thunberg.
[m] Linn. ſpec.

ſaki in Japan, where it is called *Fojo Mame*, and flowers in ſeptember and october[a].]

8. This riſes from two to three feet high, with ſlender herbaceous ſtalks. Leaves ſeſſile; leaflets oval-lanceolate, ending in acute points. Flowers axillary, lateral; the naked part of the peduncle is about two inches long; the ſpike is about the ſame length, and recurved. Corollas ſmall, of a fine blue colour. [Seeds with purple ſpots[o]. Native of Virginia, in moiſt ſhady places. It flowers here in june, and is ſometimes ſucceeded by ſeeds, which ripen in auguſt.

9. Stem twining to a conſiderable height, and bearing many flowers towards the top. The legumes have two ſeeds, and are contracted in the middle[p]. Native of Jamaica and Domingo.

10. Root perennial. Stalks twining, from a foot and half to four feet in heighth, three-cornered, hairy. A ſingle leaf comes out at each joint, on a foot-ſtalk: leaflets roundiſh, wrinkled, ſet with ſlender hairs, the under ſurface paler; the middle leaflet ſomewhat wider than the lateral ones. From the boſom of the leaves three or four ſmall flowers come out, on very ſhort peduncles, of a pale yellow colour; the banner broadiſh, the wings narrow, and the keel compreſſed (ſhorter, and not wreathed or ſpiral, as in *Phaſeolus*). Calyx four-cleft almoſt to the baſe; the upper ſegment broader than the reſt, and bifid: this part is ſmooth, all the reſt of the plant is hirſute. Legumes the form and ſize of the Lentil, brown when ripe, ſomewhat hirſute, containing two ſeeds, ſmaller than Lentils, and more ſwelling, browniſh, and marked with paler ſpots. Native of Virginia, where it is called *Mountain Pea*. It flowers from june to ſeptember, and ripens the early flowers in autumn.

β. Dolichos pubeſcens of Linneus's ſpecies is probably only a variety of this ſpecies, the banner not being bent back. The ſtature of this variety is that of *Phaſeolus vulgaris*, but the whole plant is ſofter and pubeſcent. The leaflets are almoſt naked on the upper ſurface; the middle one inclining to rhomb-ſhaped, the ſide ones gibbous without, and lanceolate within. Flowers three together, ſeſſile, yellowiſh white, with a brown ſpot on the banner. Legumes oblong, pubeſcent, a little bowed back[q].

11. Stem twining, angular, ſoftly villoſe, ſubcaneſcent. Leaves petioled: leaflets alſo petioled, the middle one an inch and half long, the ſide ones a little ſmaller, all three acute, villoſe on both ſides, ſoft, ſomewhat wrinkled, netted, and paler underneath. Petioles tomentoſe. Stipules ovate. Racemes axillary, ſolitary, longer than the leaves. Pedicels ſolitary, diſtant. Bractes ovate, attenuated, deciduous. Calyxes five-cleft, the clefts linear-lanceolate, attenuated. Legume ſharp at both ends, pubeſcent eſpecially on the edges, brown. Seeds two[r].

Native of Jamaica. Found there by Swartz.—Introduced here in 1779, by John Fothergill, M.D.[s]

12. Stem twining, obtuſe-angled, pubeſcent. Leaflets ovate, ſmooth, only ſomewhat pubeſcent underneath. Stipules ovate, acuminate, nerved. Racemes axillary, longer than the leaf, pubeſcent. Corollas yellow, ſtreaked, on the outſide and at the tip of the keel violet-coloured, extremely obtuſe as in *Hedyſarum*. Stamens really diadelphous, not as in *Ononis*. Legumes rough with hairs[t], blown up, like thoſe of *Crotalaria*. Seeds four, ſmall, globular, a little flatted, black[u].—Native of the Cape of Good Hope. Introduced in 1774, by Mr. Francis Maſſon. It flowers from april to ſeptember[x].

13. Stem herbaceous, twining, angular, pubeſcent. Leaves alternate, remote, ſubpubeſcent: leaflets wedge-orbiculate, equal, broader than long, the lateral ones ſeſſile. Petioles the length of the leaves. Stipules ovate, deciduous. Peduncles axillary, ſolitary, filiform, longer than the leaves, ſtanding out; undivided. Flowers in three pairs, very remote, ſeſſile, reflex, ſmall. Legumes the ſize of the white Lupin ſeed, very much flatted, mucronate by means of the permanent ſtyle; containing only one ſeed. Native of the Eaſt-Indies[y].

14. Stalk twining, the thickneſs of a thread. Leaves petioled: leaflets obtuſe, equal, ſcarcely tomentoſe underneath. Stipules none. Peduncles very ſhort. Calyx tubular, five-toothed, the teeth nearly equal. Corolla white, the ſame ſize as in the Lentil: banner almoſt upright, whitiſh; wings bent down to the lip, the inner ſide turned outwards and fleſh-coloured; keel roundiſh, ſhort, conſiſting of two petals, cohering only at the tip, hence it is a labiate flower. Anthers yellow, few of them perfect. Style ſhort. Legume linear, compreſſed, as it were jointed; with a dagger-point which is upright with reſpect to the upper future, and rigid. Seeds ſeven to nine, roundiſh, compreſſed, yellow. Native of the Eaſt-Indies[z].

15. Stems woody, round, hirſute. Leaflets ovate, obtuſe, with a little terminating briſtle, quite entire, covered with very ſhort cloſe hairs, and hence ſoft, ciliate, and ſomewhat hoary on the back; the inner diviſion of the ſide-leaflets is a little narrower than the outer. Petioles hirſute, round, not grooved or angular. All the ſtipules linear and acuminate. A ſolitary and hirſute raceme proceeds from the axils of the leaves, and is frequently accompanied by a new branchlet. It has from ſix to thirty flowers, by pairs or in threes at ſhort intervals, on their proper pedicels. Calyx hairy, one third ſhorter than the petals, the tube bell-ſhaped and very ſhort, the limb four-cleft, the clefts lanceolate and acuminate, the loweſt a little longer, the uppermoſt broader, not emarginate. Banner of the corolla ſtriated, purple, green at the baſe, without any calluſes: wings erect, narrower and ſhorter than the keel, purple: keel almoſt without colour, the length of the banner, cloven at the back almoſt to the top, emarginate in front at the tip. Germ hairy, linear, compreſſed: ſtyle of the ſame length, and in the ſame ſituation with the ſtamens, ending at top in a blunt, duſky, ſimple ſtigma, not bearded. Legume compreſſed, acuminate, brown, very hairy, one or two inches long, ſtraight, or a little incurved. Seeds ſeveral, ſhining, brown variegated. Native of South America. It flowered in the Vienna garden in 1770[a].

16, 17. Natives of the Society iſles[b].

18. A ſhrub, the whole of which is hoary, clammy and ſweet. Leaves petioled. Stipules ſubulate. Peduncles upright, filiform, jointed and bracted in the middle, one-flowered. Bractes in pairs, ſubulate, caducous. Flowers drooping. Calyx bell-ſhaped, divided into four ſubulate ſegments; the uppermoſt of which is cloven. Banner of the corolla orbiculate, upright, yellow, above the claw with blood-red ſtreaks: keel as in *Indigofera*. Stigma flat. Legume compreſſed, linear, ſhort, almoſt rhomb-ſhaped, hoary, with a tranſverſe groove. Seeds black, ſmooth, with a callous, whitiſh heart.—Found by Koenig among rocks near Madras, in the Eaſt-Indies[c].]

19. This has tuberous roots, from which come out in the ſpring ſlender twining ſtalks, which riſe to the height of eight or ten feet. Leaves compoſed of three pairs of leaflets, terminated by an odd one. The flowers come out in ſhort ſpikes from the ſide of the ſtalks. They have little ſcent, appear in auguſt, but do not produce ſeeds in England.

[The genus of this is doubtful, perhaps it may be nearer to the *Aſtragali*, but the corolla is different, eſpecially in the linear keel much ſickle-ſhaped: colour dark purple[d], duſky fleſh-colour, or rather fuliginous[e], or a ſullen bluſh-colour[f].

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[a] Thunberg.
[o] Linn. ſyſt.
[p] Browne.
[q] Linn. ſyſt. & ſpec.
[r] Vahl.
[s] Hort. kew.
[t] Linn. ſpec.
[u] Gærtner.
[x] Hort. kew.

[y] Linn. mant.
[z] Linn. ſuppl.
[a] Jacquin.
[b] Forſter.
[c] Linn. ſuppl.
[d] Linn. ſpec. & ſyſt.
[e] Moriſon.
[f] Parkinſon.

Cultivated here in 1640[g]. Parkinſon calls it *Virginia Earth-nuts*.]

20. This has woody ſtalks, which twiſt themſelves together, and alſo twine round any trees that grow near, and will riſe to the height of fifteen feet or more. The leaves are in ſhape ſomewhat like thoſe of the Aſh-tree, but have a greater number of leaflets. The flowers are produced in cluſters from the axils, and are of a purple colour. They are ſucceeded by long cylindrical legumes, ſhaped like thoſe of the ſcarlet Kidney-bean, containing ſeveral ſeeds, which are never perfected in England.

[Legume, in this and the foregoing ſpecies, two-celled[h]. It flowers from june to ſeptember. Introduced in 1724, by Mr. Mark Cateſby[i].

21. Stalks two feet high, branched, the thickneſs of a thread, proſtrate and decumbent, hairy. Stipules in pairs. Leaves quite entire, ſimple, ſomewhat pubeſcent on both ſides, three times as long as the petioles, with a weak point at the tip. Peduncles axillary, ſolitary, one-flowered, capillary, longer than the petioles. Involucre tender, ſubtrifid. Corolla violet-coloured. Germ villoſe. Keel of the corolla obtuſe, as in *Hedyſarum*[k]. Linneus obſerves that his plant differs in having an upright ſtalk, and narrower leaves. Native of the Cape of Good Hope.—It flowers in auguſt. Introduced in 1787, by Mr. Francis Maſſon[l].

22. This is an upright, branched ſhrub. Branches angular, ſtriated, ſubtomentoſe with purpliſh hairs. Leaves remote, petioled; leaflets alſo petioled, from two to three inches long, lanceolate, attenuated, mucronate, villoſe on both ſides, ſoft, the upper ſurface marked with lines, the lower whiter, netted-veined, the veins purpliſh-tomentoſe. Petiole very ſhort. Stipule oppoſite to the leaf, ſub-bifid; the ſegments awl-ſhaped. Peduncles axillary, ſolitary, half the length of the leaves, tomentoſe; having at the baſe a pair of alternate, approximating, ovate bractes. Pedicels ſhort. Flowers ſpreading, approximating. Calyx hoary, two-lipped[m].

Found in Guiana by Aublet, and in the iſland of Trinidad by von Rohr.

Vahl doubts whether it be really diſtinct from *G. reticulata* of Swartz (n. 11); from which however it is certainly very different. Perhaps it does not belong to this genus.

23. This riſes up with a twining ſhrubby ſtalk to the height of ſix or eight feet and more; multiplying greatly by age it becomes loaded with a profuſion of purple flowers growing in racemes; the richneſs of the corolla is enlivened by two green ſpots at the baſe of the banner. For the moſt part the flowers go off here without producing any ſeed-veſſels; perfect ſeeds, however, have been produced, and a plant has flowered from them in the garden of John Ord, Eſq. at Walham-Green. It begins to flower in february, and continues during the ſummer. In the nurſeries about town it is known by the name of *G. virens*, the name originally given to this plant by Dr. Solander. The characters do not appear to be peculiarly expreſſive of this genus.

This is one of the firſt plants from Botany-bay that flowered in this country, and it is one of the moſt ornamental[n].

24. Stem ſhrubby, ſlender, twining, five or ſix feet high, and more, red, branched, leafy. Leaves ternate, on petioles from an inch to two inches in length, channelled above, round underneath: leaflets ovate or elliptic, quite entire, the two ſide ones on very ſhort petioles, the end one on a petiole half an inch in length, bending and ſwelling immediately under the leaflet, and having there a pair of deciduous ſtipules. Almoſt the whole plant is covered with hairs preſſed cloſe. Peduncles uſually in pairs from the axils, tinged with red, as is alſo the calyx, the upper lip of which is emarginate or ſlightly bifid, the lower cut into three awl-ſhaped equal ſegments. Corolla ſcarlet, mixed with dull purple: banner bent back ſo as to lie on the calyx and cover it, ſcarlet at the end and on the ſides, purple in the middle, except towards the baſe, where it is whitiſh; wings the length of the keel, but narrower; ſcarlet towards the tip, but dull duſky red towards the baſe; keel long and narrow, boat-ſhaped, red, readily ſplitting from the baſe upwards. Stamens very manifeſtly diadelphous. Legume very hairy, with the ſtyle remaining a long time.

It flowers from april to june.

Native of New South Wales, whence it was introduced about the ſame time with the foregoing.

25. Shrubby, climbing, growing to the height of many feet, if ſupported, and producing a great number of flowers on its pendant branches. Leaflets nearly round, and in the older ones eſpecially curled at the edges. Flowers for the moſt part in pairs, of a glowing ſcarlet colour, at the baſe of the keel ſomewhat inclined to purple; the bottom of the banner is decorated with a large yellow ſpot, verging to green. It flowers from april to june. Introduced lately from New South Wales.

PROPAGATION AND CULTURE.

[Few of theſe plants have yet been cultivated in this country.]

The eighth and tenth are hardy enough to live in the open air in England. They may be propagated by ſeeds, or parting of the roots; the former is the beſt method, where good ſeeds can be obtained: theſe may be ſown on a bed of light earth in the ſpring, and if the ſeaſon ſhould prove dry, they muſt be frequently refreſhed with water, otherwiſe they will remain a long time in the ground before they vegetate: when the plants come up, they muſt be kept clean from weeds in the ſummer, and in the autumn when their ſtalks are decayed, if ſome rotten tanner's bark is ſpread over the ſurface of the ground, it will protect the roots from being injured by the froſt. In the ſpring, the roots ſhould be tranſplanted to the places where they are deſigned to remain, which muſt be in a warm ſheltered ſituation, but not too much expoſed to the ſun, and in a light ſoil, where they will thrive and produce flowers annually. If theſe are propagated by parting of the roots, it ſhould be done in the ſpring, before the roots begin to ſhoot: but they ſhould not be parted oftener than every third year, for if they be frequently removed, they will not flower ſo ſtrong.

[The tenth being the moſt tender of the two, the ſeeds may for greater ſecurity be ſown in a hot-bed; and ſome of the plants kept in the green-houſe, or againſt a ſouth wall, to be protected occaſionally in ſevere weather with dung put to their roots.]

19. This is propagated by parting the roots, and each of the tubers will grow; the beſt time for this is the end of march or beginning of april, before they put out ſhoots. The roots ſhould be planted in a warm ſituation, and in hard froſt covered with tan or mulch to protect them, otherwiſe they will not live abroad in this country: where they have been planted againſt a ſouth wall, they have thriven and flowered extremely well, which they ſeldom do in any other ſituation; and thoſe roots which are planted in pots rarely flower, nor do their ſtalks riſe near ſo high as thoſe which are planted in the full ground.

20. Is increaſed by laying down the young branches in october, which will be rooted well by that time twelvemonth, eſpecially if they are duly watered in dry weather, and may then be tranſplanted, either in a nurſery for a year to get ſtrength, or to the place where they are to remain for good, which ſhould be in a warm light ſoil and a ſheltered ſituation, where they will endure the cold of our ordinary winters very well; and if their roots are covered with ſtraw, Fern, Peas-haulm, or any other light covering, there will be no danger of their being deſtroyed by the froſt.

[3, 4, 11 and 22 muſt be kept in the bark ſtove.

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[g] Hort. kew, from Park.

[h] Linn.

[i] Hort. kew. from hort. angl.

[k] Linn. mant.

[l] Hort. kew.

[m] Vahl.

[n] Curtis.

12, 21, 23, 24, 25 in the green-houſe or Cape ſtove. Theſe may all be raiſed from ſeed.

Mr. Curtis thinks that n. 23 and 24 may probably ſucceed in the open air, in warm ſheltered ſituations, if protected a little in inclement ſeaſons.

Glycine Abrus. See *Abrus.*

Glycine monophyllos. See *Hedyſarum.*]

GLYCYRRHIZA. (*From* γλυκυς, *ſweet, and* ριζα, *a root.*)

Engl. *Liquorice.* Fr. *Regliſſe.*

Lin. gen. n. 882. *Reich.* 955. *Schreb.* 1197. *Tournef. t.* 210. *Juſſ.* 359. *Gærtn. t.* 148.

Claſſ. 17. 4. Diadelphia Decandria.

Nat. order of *Papilionaceæ,* or *Leguminoſæ.*

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, tubular, two-lipped, permanent: *upper lip* three-parted; the lateral ſegments linear, the middle one broader, bifid; *lower* entirely ſimple, linear.

COR. Papilionaceous. *Banner* ovate-lanceolate, ſtraight, longer. *Wings* oblong, very like the keel, but a little larger. *Keel* two-petalled, acute, with a claw the length of the calyx.

STAM. *Filaments* diadelphous (ſimple and nine-cleft) ſtraight. *Anthers* ſimple, roundiſh.

PIST. *Germ* ſhorter than the calyx. *Style* ſubulate, the length of the ſtamens. *Stigma* obtuſe, aſcending.

PER. *Legume* ovate or oblong, compreſſed, acute, one-celled.

SEEDS very few, kidney-form.

ESSENTIAL CHARACTER.

Cal. two-lipped; upper lip three-parted, lower undivided. *Legume* ovate, compreſſed.

SPECIES.

1. Glycyrrhiza echinata. *Prickly-headed Liquorice.*
Lin. ſpec. 1046. *Reich.* 3. 489. *hort. upſ.* 230. *Jacqu. hort.* 1. *t.* 95. *Gærtn. fruct.* 319. *Lour. cochinch.* 445.
G. capite echinato. *Bauh. pin.* 352.
G. echinata. *Ger.* 1. 119. *f.* 1. *emac.* 1302. *f.* 1. *Park. theat.* 1099. *n.* 4.
Dulcis radix. *Camer. epit.* 423.
Pſeudo-glycyrrhiza. *Rivin. tetr. t.* 3.
Legumes prickly; leaves ſtipuled, with the terminating leaflet ſeſſile.

2. Glycyrrhiza glabra. *Common Liquorice.*
Lin. ſpec. 1046. *Reich.* 3. 489. *hort. cliff.* 490. *mat. med.* 173. *Woodv. med. bot.* 458. *t.* 167. *Sauv. monſp.* 232. *D'Aſſo aragon. n.* 699. *Lour. cochinch.* 446.
G. ſiliquoſa vel germanica. *Bauh. pin.* 352.
G. vulgaris. *Dod. pempt.* 341. *Ger.* 1119. *f.* 2. *emac.* 1302. *f.* 2. *Park. theat.* 1099. *n.* 3. *Raii hiſt.* 910. *ſyn.* 324.
G. radice repente vulgaris Germanica. *Bauh. hiſt.* 2. 328.
Legumes ſmooth, no ſtipules, the terminating leaflet petioled.

3. Glycyrrhiza hirſuta. *Hairy Liquorice.*
Lin. ſpec. 1046. *Reich.* 3. 490.
Legumes hirſute, the terminating leaflet petioled.

[4. Glycyrrhiza aſperrima. *Rough Liquorice.*
Lin. ſyſt. 669. *ſuppl.* 330.
G. aſpera. *Pallas itin.* 1. 499. *t.* M. *f.* 3.—et, hiſpida. 3. 754. *t.* G. g. *f.* 1, 2.
Legumes ſmooth? leaflets elliptic, cuſped, ſtalk hiſpid, ſcabrous.

DESCRIPTIONS, &c.

Theſe are tall-growing, perennial, herbaceous plants, with the ſtalks ſomewhat woody at bottom. The ſtipules are diſtinct from the petiole. The flowers in a head or ſpike, from the axils and at the ends of the branches. The ſeed-veſſel a legume or pod, ſmooth, hairy, or prickly.

1. The common petiole has a diſtinct rim with a nerve along the middle of it. The leaflets are lanceolate-ovate. The ſtipules enſiform. The flowers in a roundiſh head[a]. According to Gmelin, the ſtipules are ſmall and oblong, not enſiform.]

The ſtalks and leaves of this are very like thoſe of the ſecond, but the flowers are produced in ſhorter ſpikes, and the pods are very ſhort, broad at their baſe, end in acute points, and are armed with ſharp prickles. It flowers from april to june, and in warm ſeaſons will perfect ſeeds in England.

[Native of monte Gargano in Apulia, of the northern provinces in China, and of Tartary.—Cultivated by Gerarde in 1596.]

2. The roots run very deep into the ground, and creep to a conſiderable diſtance, eſpecially where they ſtand long unremoved. From theſe ariſe ſtrong herbaceous ſtalks, four or five feet high. Leaves compoſed of four or five pairs of ovate leaflets, terminated by an odd one: theſe and the ſtalks are clammy, and of a dark green. Flowers in axillary ſpikes, ſtanding erect, and of a pale blue colour. Pods ſhort, containing two or three ſeeds.

[The common petiole is extended beyond the uppermoſt pair of leaflets; the ſpikes are oblong, and the flowers diſtant[b].—Native of the South of Europe, in France, Spain and Italy; alſo of China. Cultivated in China, Germany, England, &c. Here particularly about Pontefract in Yorkſhire, Workſop in Nottinghamſhire, and Godalmin in Surry;] and of late years there has been much raiſed in the gardens near London. [It appears from Turner's herbal that it was cultivated in England in 1562: and Stow informs us that "the planting and "growing of Licoriſh begun about the firſt year of "Queen Eliſabeth." (1558.) Gerarde (1597) relates, that he had plenty in his garden; and that the poor people of the north parts of England manured it with great diligence, whereby they obtained great plenty thereof. Ray affirms that the Liquorice root of Engliſh produce is ſuperior to the foreign. The quantity now exported from Spain is ſaid to be annually not leſs than 4000 quintals, or nearly 200 tons, a conſiderable part of which is ſuppoſed to be purchaſed by the porter brewers in London[c].]

3. This has much the appearance of the two foregoing ſorts, but the pods are hairy and longer. Native of the Levant, whence the ſeeds were ſent to Paris by Tournefort.

[Cultivated in 1739, by Mr. Miller[d].

4. This has rather the air of an *Aſtragalus.* Root ſlender and very long, extremely ſweet, eſpecially in the ſpring. The flower pale violet. Diſcovered by Pallas, on ſandy hills between the Wolga and the Jaick[e].

Liquorice root contains a great quantity of ſaccharine matter, with ſome proportion of mucilage. Lightly boiled in a little water it gives out nearly all its ſweetneſs: the decoction, preſſed through a ſtrainer, and inſpiſſated with a gentle heat till it will no longer ſtick to the fingers, affords a better extract than that brought from abroad, and its quantity amounts to near half the weight of the root. Rectified ſpirit takes up the ſweet matter of the Liquorice equally with water; and as it diſſolves much leſs of the inſipid mucilage, the ſpirituous tincture and extract are ſweeter than the watery. Liquorice is in common uſe as a pectoral or emollient in catarrhal defluctions on the breaſt, coughs, hoarſeneſſes, &c. The infuſions or extracts are commodious vehicles for other medicines[f].]

PROPAGATION AND CULTURE.

2. This plant delights in a light ſandy ſoil, which ſhould be three feet deep at leaſt, for the goodneſs of Liquorice conſiſts in the length of the roots: the ground in which you intend to plant Liquorice, ſhould be well dug and dunged the year before you plant it, that the dung may be perfectly rotted, and mixed with the earth, otherwiſe it will be apt to ſtop the roots from running down; and before you plant it, the ground ſhould be dug three ſpades deep, and laid very light; when your ground is thus well prepared, you ſhould furniſh yourſelf with freſh plants taken from the ſides or heads of the old roots, obſerving that they have a good bud or eye, otherwiſe

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[a] Linn. ſpec.

[b] Linn. ſpec. [c] Townſ. Spain. 2. 356. [d] Hort. kew. [e] Linn. ſuppl. [f] Lewis & Woodv.

they are ſubject to miſcarry; theſe plants ſhould be about ten inches long, and perfectly ſound.

The beſt ſeaſon for planting them is in the beginning or middle of march, which muſt be done in the following manner, viz. Firſt ſtrain a line acroſs the ground in which you would plant them, then with a long dibble made on purpoſe, put in the ſhoot, ſo that the whole plant may be ſet ſtraight into the ground, with the head about an inch under the ſurface in a ſtraight line, about a foot aſunder, or more, in the rows, and two feet diſtance row from row; and after having finiſhed the whole ſpot of ground, you may ſow a thin crop of Onions, which being plants that do not root deep into the ground, nor ſpread much above, will do the Liquorice no damage the firſt year; for the Liquorice will not ſhoot very high the firſt ſeaſon, and the hoeing of the Onions will alſo keep the ground clear from weeds; but in doing of this you muſt be careful not to cut off the top ſhoots of the Liquorice plants when they appear above ground, which would greatly injure them; and alſo obſerve to cut up all the Onions which grow near the heads of the Liquorice; and after your Onions are pulled up, you ſhould carefully hoe and clean the ground from weeds; and in october, when the ſhoots of the Liquorice are decayed, you ſhould ſpread a little very rotten dung upon the ſurface of the ground, which will prevent the weeds from growing during the winter, and the rain will waſh the virtue of the dung into the ground, which will greatly improve the plants.

In the beginning of march following you ſhould ſlightly dig the ground between the rows of Liquorice, burying the remaining part of the dung; but in doing of this, you ſhould be very careful not to cut the roots. The ſtirring of the ground will not only preſerve it clean from weeds a long time, but alſo greatly ſtrengthen the plants.

The diſtance which I have allowed for planting theſe plants, will, I doubt not, by ſome, be thought too great; but in anſwer to that, I would only obſerve, that as the largeneſs of the roots is the chief advantage to the planter, ſo the only method to obtain this, is by giving them room; and beſides, this will give a greater liberty to ſtir and dreſs the ground, which is of great ſervice to Liquorice; and if the plantation deſigned were to be of an extraordinary bigneſs, I would adviſe the rows to be made at leaſt three feet diſtant, whereby it will be eaſy to ſtir the ground with a breaſt plough, which will greatly leſſen the expence of labour.

Theſe plants ſhould remain three years from the time of planting, when they will be fit to take up for uſe, which ſhould not be done until the ſtalks are perfectly decayed; for when it is taken up too ſoon, it is ſubject to ſhrink greatly, and loſe of its weight.

The ground near London being rich, increaſes the bulk of the root very faſt; but when it is taken up, it appears of a very dark colour, and not near ſo ſightly as that which grows upon a ſandy ſoil in an open country.

[Glycyrrhiza. See *Abrus, Aſtragalus,* and *Sophora.*

GMELINA. (*From Joh. Georg. Gmelin, Profeſſor of Natural Hiſtory at Peterſburgh, and then of Botany at Tubingen. He travelled during ten years in Siberia, and publiſhed* Flora Sibirica *in* 1747, *four volumes quarto.*)

Lin. gen. n. 763. *Reich.* 821. *Schreb.* 1023. *Gærtn. t.* 56. *Juſſ.* 108.—Michelia. *Amm. act. petr. tom.* 8.

Claſſ. 14. 2. Didynamia Angioſpermia.

Nat. order of *Perſonatæ.—Vitices,* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, very ſmall, ſubglobular, four-toothed, permanent.

Cor. one-petalled, bell-ſhaped, patulous; the border four-cleft; the upper ſegment wider and vaulted; the lower and lateral ſegments obtuſe, ſmaller, ſpreading, rounded.

Stam. *Filaments* four, two of which are thicker, and two bowed in and aſcending. *Anthers,* two thicker, parted; two ſmaller, ſimple.

Pist. *Germ* roundiſh. *Style* the length of the ſmaller ſtamens. *Stigma* ſimple.

Per. *Drupe* ovate, one-celled.

Seed. *Nut* ovate, ſmooth and even, two-celled: (three-celled, with the loweſt cell barren. *G.*)

ESSENTIAL CHARACTER.

Cal. ſlightly four toothed. *Cor.* four-cleft, bell-ſhaped. *Anthers* two-parted, two ſimple. *Drupe* with a two, or three-celled nut.

SPECIES.

1. Gmelina aſiatica.
   Lin. ſpec. 873. *ſyſt.* 565. *Reich.* 3. 162. *fl. zeyl. n.* 230. *Pluk. alm. t.* 305. *f.* 3. & *t.* 97. *f.* 2. (Lycium). *Lour. cochinch.* 377. *Rumph. amb.* 2. 127. *t.* 40.
   G. lobata. *Gærtn. fruct.* 268.
   Michelia ſpinoſa, flor. luteis. *Amman in act. petrop.* 8. 218. *t.* 18.

DESCRIPTION, &c.

A tree, with round ſtiff upright branches. Leaves oppoſite, petioled, ovate, tomentoſe underneath, having frequently a ſhorter ſharp lobe on each ſide. Spines axillary, oppoſite, horizontal, pubeſcent at the tip, the length of the petioles. Flowers from the end of the tender twigs, on peduncles[a]. The fruit is a berried drupe, the ſize of Jujubes, black and ſmooth: the ſhell bony, thick at top, with two ſmall lateral lobes; remarkably acuminate at bottom. In each of the two upper cells is a ſingle ſeed, thickiſh, convex on one ſide, and flattiſh on the other; whitiſh or pale ſtraw-colour, with a ſmall umbilical caruncle below the top: there is no *albumen* or white, but the embryo is of the ſame form with the ſeed: the cotyledons or ſeed-lobes are elliptic, fleſhy and thickiſh[b].

The *Cumbulu* of the *hortus malabaricus* 1. *p.* 75. *t.* 41. is by no means *Bignonia Catalpa,* but a genuine ſpecies of *Gmelina,* as abundantly appears from the fruit[c].

Jamboſa ſilveſtris parvifolia of Rumphius (1. 129. *t.* 40.) cited by Linneus as this ſpecies, is a ſpecies of Eugenia[d].

Gnaphalio affinis. See *Gnaphalium.*]

GNAPHALIUM. (*From* γναφαλον, *tomentum, cotton or nap.*)

Lin. gen. n. 946. *Reich.* 1026. *Schreb.* 1282. *Juſſ.* 179.—Elichryſum. *Tournef. t.* 259. *Dill. elth.* 107, 108. *Gærtner t.* 166.

Helichryſum. *Vaill. mem. acad. par.* 1719. 21. 37. 38. Antennaria. *Gærtn. t.* 167. Anaxeton. *Gærtn. t.* 166.

Claſſ. 19. 2. Syngeneſia Polygamia Superflua.

Nat. order of *Compoſitæ Diſcoideæ.—Corymbiferæ.* Juſſ.

GENERIC CHARACTER.

Cal. *common* rounded, imbricate, with the marginal ſcales rounded, ſcarioſe, coloured.

Cor. compound. *Corollets* hermaphrodite, tubular, with apetalous females ſometimes intermixt. *Hermaphrodites* funnel-form, with a five-cleft, reflex border.

Stam. (In the hermaphrodites.) *Filaments* five, capillary, very ſhort. *Anther* cylindric, tubulous.

Pist. *Germ* ovate, *ſtyle* filiform, the length of the ſtamens, *ſtigma* bifid—in the females, reflex.

Per. none. *Calyx* permanent, ſhining.

Seeds ſolitary, oblong, ſmall, crowned with a capillary or feathered down.

Rec. naked.

Obs. G. arboreum *has a woolly receptacle. Some ſpecies have dioecous flowers, which is ſingular in this claſs.*

ESSENTIAL CHARACTER.

Cal. imbricate, with the marginal ſcales rounded, ſcarioſe, coloured. *Down* feathered (or ſimple). *Recept.* naked.

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[a] Linn. ſyſt.
[b] Gærtner.
[c] Ibid.
[d] Loureiro.

SPECIES.

* *Shrubby, with white flowers.*

[1. Gnaphalium eximium.

Lin. ſyſt. 745. *Reich.* 3. 747. *mant.* 573. *Curt. magaz.* 300. *Edw. birds t.* 183. (Elichryſum).

Leaves ſeſſile, ovate, crowded, upright, tomentoſe; corymb ſeſſile.

2. Gnaphalium arboreum. *Tree Everlaſting.*

Lin. ſpec. 1191. *ſyſt.* 745. *Reich.* 3. 747. *amoen.* 6. 98. *Berg. cap.* 259.

Anaxeton arboreum. *Gærtn. fruct.* 2. 407.

Leaves ſeſſile, linear, ſmooth on the upper ſurface, rolled back along the edge, flowers in a kind of head on elongate peduncles.

3. Gnaphalium grandiflorum. *Great-flowered Everlaſting.*

Lin. ſpec. 1191. *ſyſt.* 745. *Reich.* 3. 747. *Berg. cap.* 245. *Burm. afr.* 213. *t.* 76. *f.* 1.

Leaves ſtem-claſping, ovate, three-nerved, lanuginous on both ſides.

4. Gnaphalium fruticans.

Lin. ſyſt. 745. *Reich.* 3. 748. *mant.* 282.

Leaves ovate, ſtem-claſping, ſtem rigid; cyme ſeſſile.

5. Gnaphalium criſpum.

Lin. ſyſt. 745. *ſuppl.* 363.

Leaves tomentoſe underneath, ſcabrous above, root-leaves petioled, oblong, ſtem-leaves embracing, waved.

6. Gnaphalium appendiculatum.

Lin. ſyſt. 745. *ſuppl.* 363.

Leaves ſeſſile, imbricate, lanceolate, woolly, appendicled at the tip with a ſcarioſe membrane.

7. Gnaphalium coronatum.

Lin. ſpec. 1191. *Reich.* 3. 748. *Burm. afr.* 188. *t.* 69. *f.* 3.

Leaves ſeſſile, lanceolate, corymbs compound, ſeſſile, peduncles leafleſs, calyxes crowned.

8. Gnaphalium diſcolorum.

Lin. ſpec. 1191. *ſyſt.* 745. *Reich.* 3. 748. *Burm. afr.* 224. *t.* 79. *f.* 4.

G. pyramidale. *Berg. cap.* 255.

Leaves ſeſſile, lanceolate, calyxes white, lower ſcales fleſh-coloured.

9. Gnaphalium muricatum.

Lin. ſpec. 1192. *ſyſt.* 746. *Reich.* 3. 749. *hort. cliff.* 403. *Berg. cap.* 262. *Burm. afr.* 221. *t.* 79. *f.* 1. *Petiv. gaz. t.* 7. *f.* 3. (Argyrocome). *Raii ſuppl.* 182. 14. (Xeranthemum) —item, 193. *n.* 38. *Pluk. mant.* 92. (Gnaphaloides). *Pluk. amalth. t.* 406. *f.* 6. (Lychnis)—item, *Pluk. mant.* 190. (Xeranthemum).

β. G. fruticoſum, fol. rarioribus, capitatum. *Burm. afr.* 223. *t.* 79. *f.* 2. *Raii ſuppl.* 182. 15. (Xeranthemum). *Pet. gaz. t.* 8. *f.* 1. *Pluk. amalth. t.* 410. *f.* 2. (Frutex æthiopicus).

γ. G. fruteſcens, foliolis lanceolatis æqualibus, umbellatum. *Burm. afr.* 223. *t.* 79. *f.* 3. *Pluk. alm.* 72. (Elichryſum).

Leaves ſubulate, mucronate, umbel compound, calyxes cylindric, containing about three flowers.

10. Gnaphalium ericoides. *Heath-leaved Everlaſting.*

Lin. ſpec. 1193. *Reich.* 3. 750. *amoen.* 6. 99.

Leaves ſeſſile, linear; outer calyxes rude, inner fleſh-coloured.

11. Gnaphalium teretifolium.

Lin. ſpec. 1193. *Reich.* 3. 750. *hort. cliff.* 401. *Berg. cap.* 261. *Burm. afr.* 217. *t.* 77. *f.* 3. *Pluk. alm. t.* 308. *f.* 2. (Millefolium).

Leaves crowded, almoſt columnar, corymbs branched, calyxes ferruginous on the outſide.

** *Shrubby, with yellow flowers.*

12. Gnaphalium mucronatum.

Lin. ſyſt. 746. *Reich.* 3. 750. *mant.* 283. *Berg. cap.* 269. *Burm. afr.* 179. *t.* 66. *f.* 3. (Xeranthemum).

Leaves ſubulate, mucronate, calycine ſcales roundiſh.]

13. Gnaphalium Stoechas. *Common ſhrubby Everlaſting.*

Lin. ſpec. 1193. *Reich.* 3. 751. *hort. cliff.* 401. *upſ.* 256. *Gouan monſp.* 435. *Scop. carn. n.* 1052. *Krock. ſileſ. n.* 1372. *D'Aſſo aragon. n.* 814. *Blackw. t.* 438. *Hall. helv. n.* 145. (Filago).

Elichryſum ſ. Stoechas citrina anguſtifolia. *Bauh. pin.* 264.

Helichryſum ſ. Chryſocome anguſt. vulgaris. *Cluſ. hiſt.* *Mor. hiſt.* 3. 87. *n.* 8. *ſ.* 7. *t.* 11. *f.* ſiniſt. ord. 1.

Chryſocome ſ. Stoechas citrina. *Park. parad.* 374. *n.* 4. *t.* 373. *f.* 6.—minor. *Barrel. ic.* 410. 409. 278.

Stoechas citrina. *Dod. pempt.* 268.—tenuifolia narbonenſis. *Bauh. hiſt.* 3. 154. *f.* 2. *Raii hiſt.* 281.—ſ. Amarantus luteus. *Ger. emac.* 646.

Leaves linear, corymb compound, branches wandlike.

14. Gnaphalium igneſcens. *Red-flowered Everlaſting.*

Lin. ſpec. 1194. *Reich.* 3. 751. *Boerh. lugdb.* 1. 120. 3. (Elichryſum).

Leaves ſublanceolate, tomentoſe, ſeſſile, corymbs alternate, conglobate, flowers globular.

[15. Gnaphalium dentatum.

Lin. ſpec. 1194. *Reich.* 3. 751. *Burm. afr.* 185. *t.* 68. *f.* 3. (Coma aurea).

Leaves wedge-ſhaped, toothed, ſeſſile, corymb ſimple.

16. Gnaphalium ſerratum.

Lin. ſpec. 1194. *Reich.* 3. 752. *amoen.* 6. 98. *Breyn. ic.* 29. *t.* 18. *f.* 2. *Burm. afr.* 216. *t.* 77. *f.* 2.

Leaves ſtem-claſping, lanceolate, ſerrate, naked on the upper ſurface.

17. Gnaphalium patulum. *Spreading Everlaſting.*

Lin. ſpec. 1194. *Reich.* 3. 752. *hort. cliff.* 402. *n.* 15. *Berg. cap.* 249. *Boerh. lugdb.* 1. 121. *n.* 14. (Elichryſum).

Leaves ſtem-claſping, ſpatulate; corymbs aggregate, branches ſpreading.

18. Gnaphalium petiolatum.

Lin. ſpec. 1194. *ſyſt.* 746. *Reich.* 3. 752. *hort. cliff.* 402. 16. *Burm. afr.* 214. *t.* 76. *f.* 2.

Leaves ovate, quite entire, petioled; flowers crowded, terminating.

19. Gnaphalium craſſifolium. *Thick-leaved Everlaſting.*

Lin. ſyſt. 746. *Reich.* 3. 752. *mant.* 112.

Leaves broad-lanceolate, ſubpetioled, leathery, tomentoſe, corymb compound, ſtalk proliferous.

20. Gnaphalium maritimum. *Sea Everlaſting.*

Lin. ſyſt. 746. *Reich.* 3. 753. *mant.* 283.

Very much branched, leaves lanceolate, ſeſſile, ſharpiſh, inmoſt calycine ſcales gold-coloured.

21. Gnaphalium repens.

Lin. ſyſt. 747. *Reich.* 3. 753. *mant.* 283.

Leaves linear, ſtem creeping, ſtraight, branches upright, very ſimple.

22. Gnaphalium umbellatum.

Lin. ſyſt. 747. *ſuppl.* 363.

Leaves in bunches, ſubulate, twiſted, umbels ſimple, terminating, ſeſſile.

23. Gnaphalium hiſpidum.

Lin. ſyſt. 747. *ſuppl.* 363.

Leaves linear, ſemicylindric, grooved, hiſpid, patulous; heads terminating, ſimple.

*** *Herbaceous, with yellow flowers.*

24. Gnaphalium cylindricum.

Lin. ſpec. 1194. *Reich.* 3. 753. *amoen.* 6. 99. *Pluk. phyt. t.* 298. *f.* 4.

Leaves ſeſſile oblong tomentoſe, corymbs unequal, calyxes ſmooth, cylindric, ſeſſile.]

25. Gnaphalium orientale. *Eaſtern Everlaſting.*

Lin. ſpec. 1195. *Reich.* 3. 754. *hort. cliff.* 402. *upſ.* 256. *Gærtn. fruct.* 2. 404. *Bauh. pin.* 264. 5. *prodr.* 123. *Comm. hort.* 2. 109. *t.* 55. (Elichryſum). *Mor. hiſt.* 3. 86. 1. *ſ.* 7. *t.* 10. *f.* ult. *Park. parad.* 374. *n.* 3. (Helichryſum).

Broad-leaved Eaſtern Everlaſting.

β. G. fruticoſum. *Mill. dict. n.* 20. *fig. t.* 131. *f.* 1.

Narrow-leaved Eaſtern Everlaſting.

Leaves linear-lanceolate, ſeſſile, corymb compound, peduncles elongate.

[26. Gnaphalium arenarium.
Lin. ſpec. 1195. *Reich.* 3. 754. *fl. ſuec. n.* 738. *mat. med.* 185. *Pollich pal. n.* 783. *Krock. ſileſ. n.* 1373. *Thunb. jap.* 312. *Fl. dan. t.* 641. *Blackw. t.* 524.
Elichryſum ſ. Stoechas citrina latifolia. *Bauh. pin.* 264.
Stoechas citrina germanica, latiore folio. *Bauh. hiſt.* 3. 153. *Raii hiſt.* 281.
Amaranthus luteus latifolius. *Ger. emac.* 646. *f.* 2.
Broad-leaved Goldilockes.
Leaves lanceolate, the lower ones obtuſe; corymb compound; ſtalks quite ſimple.]

27. Gnaphalium rutilans. *Shining-flowered Everlaſting.*
Lin. ſpec. 1195. *Reich.* 3. 754. *hort. cliff.* 401. *Dill. elth.* 127. *t.* 107. *f.* 127.
Leaves lanceolate; corymb decompound; ſtalk branched at bottom.

[28. Gnaphalium milleflorum.
Lin. ſyſt. 747. *ſuppl.* 362.
Flowers corymbed, faſtigiate, reddiſh-white, calyxes ſubcylindric.

29. Gnaphalium imbricatum.
Lin. ſpec. 1195. *Reich.* 3. 754. *Burm. afr.* 226. *t.* 80. *f.* 2.
G. paniculatum. *Berg. cap.* 256.
Leaves lanceolate, tomentoſe; calycine ſcales reflex; ſtalk branched.]

30. Gnaphalium cymoſum. *Branching Everlaſting.*
Lin. ſpec. 1195. *Reich.* 3. 755. *hort. cliff.* 401. *Berg. cap.* 258. *Pluk. alm. t.* 279. *f.* 1. *Dill. elth.* 128. *t.* 107. *f.* 128.
Leaves lanceolate, three-nerved, ſmooth on the upper ſurface; raceme terminating; ſtalk branched at bottom.

[31. Gnaphalium nudifolium.
Lin. ſpec. 1196. *ſyſt.* 747. *Reich.* 3. 755. *Berg. cap.* 247. *Pet. gaz. t.* 82. *f.* 1. (Elichryſum). *Breyn. cent. t.* 71.
Anaxeton nudifolium. *Gærtn. fruct.* 2. 407.
Leaves lanceolate, three-nerved, naked, with netted veins.]

32. Gnaphalium luteo-album. *Jerſey Everlaſting* or *Cudweed.*
Lin. ſpec. 1196. *Reich.* 3. 755. *Hudſ. angl.* 359. *With.* 893. *Gouan. hort. monſp.* 434. *Pollich pal. n.* 784. *Hall. helv. n.* 147. (Filago). *Krock. ſileſ. n.* 1374. *t.* 38. *vol.* 2. *D'Aſſo aragon. n.* 815. *Volk. norib. t.* 194. *Barrel. ic.* 367. (Chryſocome). *Cluſ.* 1. 329. 1. *Lob. ic.* 1. 485. 2.
Gnaph. majus lato oblongo folio. *Bauh. pin.* 263. *Pluk. alm. t.* 31. *f.* 6. *Mor. hiſt.* 3. 88. *n.* 20. *ſ.* 7. *t.* 11. *f.* 20.
G. oblongo fol. *Ger. emac.* 643. 13. *Raii hiſt.* 296.
G. ſupinum obl. fol. *Park. theat.* 686. 6.—& 688. 9.
G. ad Stoechadem citrinam accedens. *Bauh. hiſt.* 3. 160. *f.* 2.
Elichryſum ſylveſtre latifolium capitulis conglobatis. *Bauh. pin.* 264. *Raii ſyn.* 182. *Petiv. brit. t.* 18. *f.* 5.
Leaves half-ſtem-claſping, ſword-ſhaped, repand; obtuſe, pubeſcent on both ſides, flowers conglomerate.

[33. Gnaphalium albeſcens.
Swartz prodr. 112.
Snowy-tomentoſe; leaves linear-lanceolate; ſtalk upright, undivided at bottom; branches terminating, faſtigiate; flowers crowded, conical.

34. Gnaphalium pedunculare.
Lin. ſyſt. 747. *Reich.* 3. 756. *mant.* 284.
Leaves ſpatulate, ſomewhat ſtem-claſping, tomentoſe underneath, calycine ſcales ſharpiſh.]

35. Gnaphalium odoratiſſimum. *Sweet-ſcented Everlaſting.*
Lin. ſpec. 1196. *ſyſt.* 747. *Reich.* 3. 756. *Mill. fig. t.* 131. *f.* 2. (Elichryſum). *Pluk. alm. t.* 173. *f.* 6. (Elichryſum).
G. aureo-fulvum. *Berg. cap.* 257.
Leaves decurrent, mucronate, tomentoſe on both ſides, flat.

* * * * *Herbaceous, with white flowers.*

36. Gnaphalium ſanguineum.
Lin. ſpec. 1196. *Reich.* 3. 756. *amoen.* 4. 78.
G. ægyptiacum. *Pluk. mant.* 91. *Gron. orient.* 262.
G. ſyriacum. *Barrel. ic.* 34.
Gnaphalio montano affinis ægyptiaca. *Bauh. pin.* 264.
Chryſocoma ſyriaca. *Breyn. cent.* 146.
Baccharis Dioſcoridis. *Rauw. itin. t.* 285.
Leaves decurrent, lanceolate, tomentoſe, flat, with a little naked point at the end.

37. Gnaphalium foetidum. *Strong-ſcented Everlaſting.*
Lin. ſpec. 1197. *ſyſt.* 748. *Reich.* 3. 757. *hort. cliff.* 402. *upſ.* 246. *Berg. cap.* 246. *Comm. hort.* 2. 111. *t.* 56. *Volk. norib. t.* 194. *Pluk. alm. t.* 243. *f.* 1. *Mor. hiſt.* 3. 115. *ſ.* 7. *t.* 20. *f.* 32. (Conyza).
Anaxeton foetidum. *Gærtn. fruct.* 2. 406.
Leaves ſtem-claſping, quite entire, acute, tomentoſe underneath, ſtalk branched.

38. Gnaphalium undulatum. *Waved Everlaſting.*
Lin. ſpec. 1197. *ſyſt.* 748. *Reich.* 3. 757. *hort. cliff.* 402. *Dill. elth.* 130. *t.* 108. *f.* 130. (Elichryſum).
Leaves ſubdecurrent, lanceolate, waved, acute, tomentoſe underneath, ſtalk branched.

39. Gnaphalium americanum.
Swartz prodr. 112. *Mill. dict. n.* 17. *Brown. jam.* 318. 1.
G. ad Stoechadem citrinam accedens. *Sloane cat.* 125.
Root-leaves lingulate-lanceolate, ſnow-white beneath; ſtalk ſimple, upright, tomentoſe; flowers ſpiked and lateral, ſeſſile, crowded.

[40. Gnaphalium criſpum. *Curled Everlaſting.*
Lin. ſpec. 1197. *Reich.* 3. 757. *Berg. cap.* 253. *Pluk. phyt. t.* 298. *f.* 3.
Leaves ſtem-claſping, ſpatulate, tomentoſe, calyxes very obtuſe, plaited and waved, tomentoſe at the baſe.

41. Gnaphalium helianthemifolium. *Dwarf-Ciſtus leaved Everlaſting.*
Lin. ſpec. 1197. *Reich.* 3. 757. *Volk. norib. t.* 194.
Leaves ſomewhat ſtem-claſping, lanceolate, corymbs compound, calycine ſcales ſomewhat plaited.

42. Gnaphalium ſquarroſum.
Lin. ſpec. 1197. *Reich.* 3. 758. *Pluk. alm. t.* 323. *f.* 1.
Leaves ſeſſile, tongue-ſhaped, tomentoſe, the inner calycine ſcales ſubulate, and bowed back.

43. Gnaphalium ſtellatum.
Lin. ſpec. 1198. *Reich.* 3. 758. *amoen.* 6. *afr.* 55. *Burm. afr.* 225. *t.* 80. *f.* 1.
Leaves ſeſſile, lanceolate, villoſe, calyxes acute, fleſh-coloured on the outſide.]

44. Gnaphalium obtuſifolium. *Blunt-leaved Everlaſting.*
Lin. ſpec. 1198. *Reich.* 3. 758. *Gron. virg.* 95—121. *Dill. elth.* 130. *t.* 108. *f.* 131. (Elychryſum). *Mor.* 3. 88. *n.* 21. *ſ.* 7. *t.* 10. *f.* 19. (Helichryſum).
Leaves lanceolate, ſtalk tomentoſe, panicled, flowers glomerate, conical, terminating.

45. Gnaphalium margaritaceum. *American Everlaſting* or *Cudweed.*
Lin. ſpec. 1198. *Reich.* 3. 759. *hort. cliff.* 401. *upſ.* 255. *Hudſ. angl.* 360. *Gmel. ſib.* 2. 107. *Kalm. itin.* 2. 257. *edit. engl.* 1. 130. *Hall. helv. n.* 146. (Filago).
G. americanum. *Cluſ. hiſt.* 1. 327. 3. *With.* 894. *Ger. emac.* 641. 8. *Bauh. hiſt.* 3. 162. *f.* 2. *Pet. brit. t.* 18. *f.* 3. *Raii hiſt.* 284. *ſyn.* 182.
G. latifolium amer. *Bauh. pin.* 263.
Argyrocome ſ. Gn. amer. *Park. parad.* 374. *n.* 5. *t.* 373. *f.* 8.
Leaves linear-lanceolate, acuminate, alternate, ſtalk branched at top, corymbs faſtigiate.

46. Gnaphalium plantagineum. *Plantain-leaved Everlaſting.*
Lin. ſpec. 1199. *ſyſt.* 748. *Reich.* 3. 759. *Gron. virg.* 95—121. *Pluk. alm. t.* 348. *f.* 9.
Runners procumbent, ſtalk very ſimple, root-leaves ovate, very large.

47. Gnaphalium dioicum. *Mountain Everlaſting* or *Cudweed. Cat's-foot.*
Lin. ſpec. 1199. *Reich.* 3. 759. *hort. cliff.* 400. *fl. lapp. n.* 302. *ſuec. n.* 736. *mat. med.* 185. *Hudſ. angl.* 360. *With.* 894. *Lightf. ſcot.* 470. *t.* 20.

t. 20. *f.* 1. (female). *Relh. cant. n.* 603. *Engl. bot.* 267. *Scop. carn. n.* 1044. *Neck. gallob.* 348. *Leers herborn. n.* 640. *Pollich pal. n.* 785. *Allion. pedem. n.* 624. *Krock. ſileſ. n.* 1376. *Hall. helv. n.* 157. (Filago).

G. montanum flore rotundiore. *Bauh. pin.* 263. (male).—longiore. *Mor. hiſt.* 3. *ſ.* 7. *t.* 11. *row* 3. *f.* 2. (female.)—& folio & fl. *ibid.* (female). *Raii ſyn.* 182.

G. mont. album, &c. *Lob. ic.* 1. 482. & 483. (purpureum). *Ger.* 516. 4, 5, 6. *emac.* 641. 6. (female). 640. 4, 5. (male). *Raii hiſt.* 283. *ſyn.* 181.

G. mont. f. Pes cati. *Park. theat.* 690. *f.* ult. *Petiv. brit. t.* 18. *f.* 4.

Piſoſella minor. *Dod. pempt.* 68. male & female. *Bauh. hiſt.* 3. 162. *f.* 3. *Cluſ. hiſt.* 1. 330. *Fuchſ. hiſt.* 606.

Runners procumbent, ſtalk quite ſimple, corymb ſimple, flowers divided.

[48. Gnaphalium alpinum. *Alpine Everlaſting.*

Lin. ſpec. 1199. *ſyſt.* 748. *Reich.* 3. 760. *fl. lapp. n.* 301. *ſuec. n.* 737. *Scop. carn. n.* 1047 ? *Krock. ſileſ. n.* 1375 ? *Hall. helv. n.* 150 ? (Filago).

Runners procumbent, ſtalk quite ſimple, head leafleſs, flowers oblong.

49. Gnaphalium indicum.

Lin. ſpec. 1200. *ſyſt.* 748. *Reich.* 3. 760. *fl. zeyl. n.* 307. *Pluk. alm. t.* 187. *f.* 5 ? *Lour. cochinch.* 497.

Leaves lanceolate, ſtalk very much branched, diffuſed, corymbs unequal, calyxes coloured within.

50. Gnaphalium purpureum.

Lin. ſpec. 1200. *Reich.* 3. 761. *Gron. virg.* 121. *Dill. elth.* 131. *t.* 109. *f.* 132. (Elichryſum). *Mor. hiſt.* 3. 92. *n.* 2. (Gnaphalium).

Leaves lanceolate, naked, ſtalk erect, quite ſimple, flowers in lateral ſeſſile ſpikes.

51. Gnaphalium denudatum.

Lin. ſyſt. 749. *ſuppl.* 364.

Leaves ſpatulate, underneath ſnowy-white, tomentoſe, ſmooth and even above.]

***** *Reſembling Filago. Herbaceous.*

52. Gnaphalium ſylvaticum. *Wood Everlaſting, Engliſh* or *Upright Cudweed.*

Lin. ſpec. 1200. *ſyſt.* 749. *Reich.* 3. 761. *fl. lapp. n.* 298. *ſuec. n.* 739. *hort. cliff.* 402. *Hudſ. angl.* 360. *With.* 895. *Lightf. ſcot.* 471. *Relh. cant. n.* 604. *Scop. carn. n.* 1046. *t.* 56. *Pollich pal. n.* 786. *Neck. gallob.* 347. *Leers herborn. n.* 641. *Fl. dan. t.* 254. *Hall. helv. n.* 148. (Filago). *Krock. ſileſ. n.* 1377.

G. majus, anguſto oblongo folio—&, alterum. *Bauh. pin.* 263. *Mor. ſ.* 7. *t.* 11. *f.* 1.

G. rectum. *Bauh. hiſt.* 3. 160. 1.

G. anglicum. *Lob. ic.* 1. 482. *f.* 3. *Ger.* 515. 1. *emac.* 639. 1. *Raii hiſt.* 295. *ſyn.* 180. *Petiv. brit. t.* 18. *f.* 6.

Stalk quite ſimple, upright, flowers ſcattered.

[53. Gnaphalium ſpicatum.

Vahl. ſymb. 1. 70.

Filago ægyptiaca pumila ſpicata. *Petiv. hort. ſicc.*—capenſis minor ſpicata. *Pet. gaz. n.* 451. *t.* 8. *f.* 12.

Chryſocoma ſpicata. *Forſk. ægypt.* 73. *n.* 433.

Stems herbaceous, quite ſimple, flowers in whorls, leaves in bundles, linear, revolute.

54. Gnaphalium verticillatum.

Lin. ſyſt. 749. *ſuppl.* 364.

Stalk quite ſimple, flowers in whorls, leaves linear.

55. Gnaphalium Oculus cati. *Cat's-eye Everlaſting.*

Lin. ſyſt. 749. *ſuppl.* 364.

Stalk proſtrate, leaves ovate, flowers glomerate, terminating, extremely villoſe.

56. Gnaphalium piloſellum.

Lin. ſyſt. 749. *ſuppl.* 364.

Leaves lanceolate, five-nerved, tomentoſe underneath, ſtalk naked, flowers in heads.

57. Gnaphalium declinatum. *Creeping Everlaſting.*

Lin. ſyſt. 749. *ſuppl.* 365.

Leaves linear-lanceolate, the calyxes with a white lanceolate ray.

58. Gnaphalium coronatum.

Lin. ſyſt. 749. *ſuppl.* 365.

Leaves lanceolate, calyxes with a manifold roundiſh ray.

59. Gnaphalium ſupinum. *Dwarf Everlaſting* or *Cudweed.*

Lin. ſyſt. 749. *Reich.* 3. 761. *Hudſ. angl.* 361. *With.* 896. *Allion. pedem. n.* 625. *Hall. helv. n.* 149. *Fl. dan. t.* 332.

G. fuſcum. *Scop. carn. n.* 1048. *t.* 57.

G. alpinum. *Lightf. ſcot.* 471. *t.* 20. *f.* 2.

G. medium. *Villars proſp.* 31. *t.* 19. *f.* 1.

G. ſup. lavendulæ fol. *Bocc. muſ.* 107. *t.* 85.

G. oblongo fol. *Scheuch. alp.* 2. 134.

Stalk ſimple, procumbent, flowers ſcattered.]

60. Gnaphalium uliginoſum. *Marſh Everlaſting* or *Cudweed.*

Lin. ſpec. 1200. *Reich.* 3. 762. *fl. lapp. n.* 300. *ſuec. n.* 740. *hort. cliff.* 402. *Hudſ. angl.* 361. *With.* 896. *Lightf. ſcot.* 473. *Relh. cant. n.* 605. *Scop. carn. n.* 1049. *Pollich pal. n.* 787. *Neck. gallob.* 347. *Leers herborn. n.* 642. *Gunn. norv. n.* 339. *Krock. ſileſ. n.* 1378. *Hall. helv. n.* 151. (Filago.) *Fl. dan. t.* 859. *Mor. hiſt.* 3. 92. *ſ.* 7. *t.* 11. *f.* 14. *Dod.* 66. 3. *Lob. ic.* 1. 481. 1. *Ger.* 515. 2. *emac.* 639. 2. *Park. theat.* 686. 4. (Filago). *Petiv. brit. t.* 18. *f.* 7. *Raii hiſt.* 295. *n.* 5. *ſyn.* 181. 6.

Stalk branched, diffuſed, flowers crowded, terminating.

[61. Gnaphalium glomeratum. *Cluſter-flowered Everlaſting.*

Lin. ſpec. 1200. *ſyſt.* 749. *Reich.* 3. 762. *Berg. cap.* 251.

Stalk diffuſed, inner ſcales of the calyxes ſubulate and naked, leaves ſomewhat ſtem-claſping.

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62. Gnaphalium japonicum.

Lin. ſyſt. 749. *Thunb. jap.* 311.

Herbaceous: upright; leaves linear-ſword-ſhaped, ſnowy-white underneath, heads terminating.

63. Gnaphalium trinerve.

Forſt. fl. auſtr. n. 289.

Shrubby: leaves ſeſſile, lanceolate, three-nerved, ſilvery-white underneath, panicle corymbed, terminating, looſe.

64. Gnaphalium lanatum.

Forſt. fl. auſtr. n. 290.

Herbaceous, woolly: leaves linear-oblong, callous-mucronate at the tip, corymb contracted, ſtalk very ſimple.

65. Gnaphalium involucratum.

Forſt. fl. auſtr. n. 291.

Herbaceous: leaves linear, elongate, mucronate, tomentoſe underneath; head terminating, leafy.

66. Gnaphalium ſinuatum.

Lour. cochinch. 497.

Herbaceous: branches aſſurgent, leaves ovate-lanceolate, ſinuate, toothed, hairy on both ſides.

DESCRIPTIONS, *&c.*

The numerous ſpecies of this genus are either Underſhrubs or Herbs. The leaves are placed alternately, and are for the moſt part hoary. The flowers uſually terminate the ſtem and branches in globes or corymbs. The calyx is permanent, with yellow or white ſcales.—The Filagos are ſcarcely diſtinct from the Gnaphaliums, conſidered as a natural genus.

1. *Stem* the thickneſs of a finger, and tomentoſe. *Leaves* ſharpiſh, without veins, white, with nap on both ſides. *Corymb* terminating, without a common peduncle; there is one leaf, and uſually only one flower to each peduncle. *Flowers* globular, with calyxes as large as the outer joint of a finger, conſiſting of imbricate, roundiſh, ſcarioſe, concave, obtuſe, ſmooth, purpliſh ſcales[a].

Native of the Cape of Good Hope: as are alſo the eleven ſucceeding ſpecies.

2. This is a ſhrub the height of a man, determinately branched. *Leaves* reſembling thoſe of Roſemary, crowded, ſtrict, acute, naked, underneath tomentoſe, as are alſo the branches; with ſmaller leaves alternate, remote. *Corymb* very much crowded:

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[a] Linn. mant.

calyxes white, with a cinereous pile[b].—It flowers moſt part of the year, and was introduced in 1770, by Mr. William Malcolm[c].

3. Branches round, ſimple, tomentoſe. Leaves alternate, obtuſe, ſhortly acuminate; beneath tomentoſe-woolly, white, five-nerved; green above, tomentoſe, ſomewhat woolly; two inches long, frequent; the upper ones lanceolate, acute, ſmaller. Flowers large, roundiſh, ſnow-white, in roundiſh, heaped, ſolitary cymes, on long, tomentoſe, ſcaly peduncles[d].

Introduced in 1787, by Mr. Francis Maſſon[e].

4. *Stem* the thickneſs of a finger, determinately branched, villoſe. *Leaves* crowded, three-nerved, obtuſe, mucronate, the ſize of the outer joint of the thumb, tomentoſe underneath, villoſe above but at length becoming naked. *Flowers* terminating, and heaped into a ſeſſile head. *Calyx* yellow on the outſide, but white within.

It approaches to the foregoing ſpecies; but the flowers are larger, the leaves not narrowed towards the top, the ball of flowers not on a peduncled common peduncle, the ſtem woody and ſtiff[f].

5. Large among the greater ſpecies. Root-leaves many, quite entire: ſtem-leaves attenuated. Peduncle elongated, tomentoſe, terminated by a compound, many-flowered cyme. Flowers ſmall: outer calyxes red, inner yellow[g].

6. Large. Stem cloathed with leaves up to the cyme. It is remarkable for a little, lanceolate, ſcarioſe membrane, terminating the leaf[h].

7. *Stems* woody, with villoſe branches. *Leaves* very tomentoſe. *Branchlets* from the upper axils of the leaves. *Corymb* terminating without a common peduncle: partial pedicels longer than the leaf at their baſe; the lateral ones longer than the middle one; bearing at the tip in form of a head many ſeſſile, hirſute calyxes, dilated at the edge into a round, ſmooth, ſnow-white ray[i].

8. Stems underſhrubby. Leaves woolly-tomentoſe underneath. Common peduncles elongated. Calyxes glomerate, with ſix lower ſcales, ſhorter and fleſh-coloured, twelve inner white, blunt. Flowers in a kind of umbel, with about five florets in each[k].

9. Stem erect, round, pubeſcent; branches patulous, ſimple, alternate or ſomewhat heaped, ſlightly tomentoſe. Leaves round above, ſmooth, ſomewhat concave underneath, tomentoſe, rolled back on the edge, ſeſſile, ſcattered, frequent, ſpreading, having ſmaller leaves in bundles in their axils. Flowers ſeſſile, in terminating, multifid, ſeſſile umbels, white-tomentoſe; divided into partial ſpiked umbels. Bractes linear-acuminate, ſmall, ſubtomentoſe[l].

This varies with leaves ſharp or prickly like thoſe of Juniper. Florets three or more, ſeldom five or ſix[m].

10. This is a wretched plant with poor leaves and flowers. The branches are wand-like, rigid, unequal. The leaves remote and very minute. The flowers terminating, few, ſubſeſſile. The outer calyx conſiſts of greeniſh-aſh-coloured, ſubtomentoſe leaflets; the inner of ſmooth, oblong, fleſh-coloured ſcales[n].

Introduced 1774, by Mr. Maſſon. It flowers from march to auguſt[o].

11. The calyxes are entirely ſmooth, ferruginous without, whitiſh within. Leaves ſubulate, naked, tomentoſe underneath, with the edge rolled back[p].

Stem aſh-coloured, round, ſubtomentoſe; branches leafy, white tomentoſe: branchlets determinate, umbelled, erect, each loaded in the middle with other ſhort aggregate branchlets. Leaves linear-ſubulate, mucronate-hooked, convex above, ſmooth, white-tomentoſe underneath, rolled back on the edge, ſeſſile, ſcattered, approximating, two lines in length, ſpreading very much. Flowers pedicelled, in roundiſh cloſe corymbs at the ends of the branchlets, tomentoſe, naked, ſubpeduncled[q].

This, and all the foregoing ſpecies, with the next following, are natives of the Cape of Good Hope.

12. Branches a ſpan long, erect, ſimple, round, ſlightly tomentoſe, aſh-coloured. Leaves approximating, convex underneath, channelled above, mucronate with a ſlender pungent prickle, tomentoſe on both ſides with wool preſſed cloſe, ſeſſile, ſcarcely an inch long, from erect ſpreading. Flowers ſix, large, in panicles, terminating, contracted, on one-flowered tomentoſe peduncles[r].]

13. Stem about three feet high, with long ſlender irregular branches, the lower ones having blunt leaves, two inches and a half long, and an eighth of an inch broad at the end; thoſe on the flower-ſtalks are very narrow, and end in acute points; the whole plant is very woolly. Flowers terminating in a compound corymb: calyxes at firſt ſilvery, but turning to a yellow ſulphur-colour. If they are gathered before the flowers are much opened, the heads will continue in beauty many years, if kept from air and duſt.

[According to Haller, all the flowers are androgynous. Calyx cylindric, three lines long, ſhining, ſmooth; the ſcales convex, blunt, elliptic, ſeldom containing more than fourteen florets[s].

The flowers have been formerly recommended as attenuants, diſcutients, and diaphoretics, but are not uſed in modern practice.

Native of Germany, France, Spain, and Iſtria.—Cultivated in 1629[t].

By old writers it is called *Gold-flower*, *God's-flower*, *Goldilockes*, and *Golden Stoechas:* by Ray *Narrow-leaved Goldylocks* or *Caſſidony.*]

14. Stem and leaves woolly; the former a foot high, ſending out a few ſide branches, terminated by a compound corymb, the heads of which are ſmall, of a gold colour, changing to red as they fade.

[The native place of growth is not known.—It was cultivated in 1768, by Mr. Miller.

15. The whole plant is hoary. Branches ſcarcely a ſpan long and round. Leaves blunt at top and three-toothed, thick and veined. Flowers at the ends of the branchlets, few, ſmall, ſhining, in oblong heads.

16. This is an elegant plant, ſuffruticoſe, ſoft and ſilky, yellow, much branched, with procumbent, ſimple, pubeſcent runners. Leaves very frequent, ſoft, entire, yellow. Flowers terminating, very many, in a cloſe compact head, each on ſhort pedicels[u].

17. Branches filiform, a foot or more in length, round, white-tomentoſe, patulous, ſomewhat branched. Branchlets alternate, ſimple, patulous, white-tomentoſe, aſcending. Leaves alternate, blunt and ſerrulate at top, linear and ſeſſile at bottom, ſtem-claſping with rounded angles, white-tomentoſe underneath, greeniſh-ſubtomentoſe above, an inch long, ſpreading. Cymes terminating, looſe, on long peduncles, tomentoſe, leafleſs; branches ſimple and branchletted; flowers large, peduncled[x].

Introduced in 1774, by Mr. Francis Maſſon. It flowers from auguſt to january[y].

18. Related very nearly to the foregoing, according to Linneus, but it is not in his herbarium, and the plant in hort. cliff. is Stæhelina arboreſcens.

19. Stem a foot high, proliferous-branched, perennial except the proliferous branch. Leaves wider at the end, blunt, covered with a very thick down, ſtiffiſh, towards the flowers gradually narrower. Flowers numerous. Calyxes pale yellow. Corollas of a deeper colour. The florets before they open appear white[z].—Native of Majorca and Minorca. Introduced in 1774, by Monſ. Richard. It flowers from july to ſeptember[a].

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[b] Linn. amoen.
[c] Hort. kew.
[d] Bergius.
[e] Hort. kew.
[f] Linn. mant.
[g] Linn. ſuppl.
[h] Ibid.
[i] Linn. ſpec.
[k] Linn. ſpec. and ſyſt.
[l] Bergius.
[m] Linn. ſyſt.
[n] Linn. amoen.
[o] Hort. kew.
[p] Linn. ſpec.

[q] Bergius.
[r] Ibid.
[s] Scopoli.
[t] Park. parad.
[u] Burm.
[x] Bergius.
[y] Hort. kew.
[z] Linn. mant.
[a] Hort. kew.

20. A ſhrub of four feet in height; the branches pubeſcent. Leaves alternate, ſomewhat crowded, tomentoſe, aſh-coloured, when young very white. Corymbs terminating, cloſe, roundiſh, on very ſhort peduncles. Calyx rude, white with down: ſcales ſharpiſh at the end, browniſh about the edge. Flowers gold-coloured. It differs from the foregoing, in having the leaves by no means narrowed at the baſe[b].

Introduced about 1772. It flowers from june to auguſt[c].

21. Stem creeping, rooting, perennial, perfectly ſimple, filiform, angular, four feet high. Branches alternate, two inches in length, bearing both leaves and flowers. Leaves filiform, naked, lax, ſomewhat viſcid, alternate, patulous, acute. Heads of flowers terminating and glomerate. Calyxes blunt, containing few flowers, yellowiſh, the ſize of hemp ſeeds[d].

22. In the herb this bears a ſtrong reſemblance to G. mucronatum (n. 9.): but it differs in having a regular umbel, larger flowers, and the ſcales of the calyx a beautiful red, in which laſt circumſtance it reſembles a Xeranthemum[e].

23. This ſpecies is eaſily known by the ſtiff briſtles on its aceroſe leaves, and by its aggregate flowers[f].

Theſe nine ſpecies, except the 19th, are natives of the Cape of Good Hope.

24. Herb branched, diffuſed, a ſpan in length, tomentoſe all over: calyxes very long, imbricate, with equal, ovate, bluntiſh ſcales.

Native of the Cape[g].]

25. Stem ſeldom riſing more than three or four inches high, and putting out many heads. Leaves narrow, woolly on both ſides, and coming out without order. Flower-ſtems eight or ten inches high, with narrow hoary leaves all the way, terminated by a compound corymb of bright yellow flowers in large heads, coming out in may, and continuing in ſucceſſion moſt part of the ſummer. It has been long in Portugal, where in the winter ſeaſon they ornament the churches with the flowers.

[This is improperly called Gn. orientale, and Eaſtern Everlaſting, for it is ſuppoſed to be a native of Africa.—Parkinſon, who calls it *Golden Flower-gentle*, cultivated it in 1629.]

β. The ſhrubby or narrow-leaved ſort grows naturally at the Cape of Good Hope. This differs from the other in riſing with ſtalks four or five feet high, dividing into many branches, having long narrow leaves placed alternately; the corymb is looſe, with the flowers on long pedicels; whereas thoſe of the other are compact[h].

[26. This is an annual hoary plant, with an oblong root. Stem upright, a foot or more in height, white with down. Leaves alternate, an inch long, and three or four lines wide, half-ſtem-claſping, quite entire, white with down on both ſides, blunt and frequently recurved a little at the tip, the edges rolled back. The ſhining yellow heads of flowers are two lines in length and breadth: the calycine ſcales are ovate, blunt, and lemon-coloured, as are alſo the corollets[i].

Native of Scania, Denmark, Germany, in dry ſandy paſtures and hills, flowering from july to ſeptember. Alſo in Japan, where it is uſed for Moxa, and as Tobacco; by way ſides and in ditches, flowering from december to april[k].

It was formerly much recommended in dyſenteries, &c. but is now diſuſed. It is ſuppoſed to preſerve woollen clothes from the moth[l].]

27. Stem ſlender, ſending out many lateral branches below, with very narrow leaves, hoary on their under ſide. The flowers are produced in a compound corymb at the ends of the branches; at their firſt appearance they are of a pale red, but afterwards change to a gold colour; the calyxes are ſmall, and dry like the other ſpecies of Everlaſting.

Native of the Cape of Good Hope.

[It flowers from the end of june to the beginning of auguſt. Cultivated in 1732 by James Sherard, M. D. at Eltham[m].

28. Stalk a foot high, tomentoſe. Leaves lanceolate, hirſute on both ſides. Corymb terminating, with above fifty flowers in it: peduncles ſubdichotomous, elongated: bractes ſcarioſe, ovate, pale: calyxes ſmooth and even, pale; with the lower ſcales purpliſh: corollas yellow.

Native of the Cape of Good Hope, where it was found by Thunberg[n].

29. Stem aſh-coloured-tomentoſe, diffuſed, erect, ſcarcely a foot high. Branches alternate, wandlike, ſimple, tomentoſe, erect. Leaves alternate, linear-wedge-ſhaped, ſharpiſh, ſeſſile, greeniſh-aſh-coloured above, aſh-coloured and more tomentoſe underneath, the length of the internodes, ſpreading and bent down. Flowers ſmalliſh, glomerate-corymbed, ſubſeſſile. Corymbs alternate, panicled, peduncled, at the ends of the branches.

Native of the Cape of Good Hope[o].

30. The flowers are entirely of a gold colour, and ſmooth, with blunt ſcales. Calyxes ſmooth and even[p]. Perennial, about eighteen inches in height; ſtalks woody cylindric; leaves frequent, ſhaped as in *Geniſta tinctoria*, ſtiffiſh, concave, bright green and ſhining on the upper ſurface; on the flowering ſtems they are more ſharp-pointed. Flowers very numerous, ſmall, oblong. Theſe and the leaves, when rubbed, emit an odour, like that of Southernwood[q].

Native of the Cape of Good Hope. It was cultivated in 1732, by James Sherard, M. D.; and flowers from april to auguſt[r].

31. Root-leaves lanceolate-ovate, by no means tomentoſe, ſcabrous about the edge. Stalk ſimple, a foot high, having ſmaller leaves of a more lanceolate ſhape at bottom, and naked at top. Flowers golden in a compound corymb[s]. Receptacle naked, and therefore not of the genus Athanaſia[t]. Bergius however makes the receptacle chaffy; the chaffs lanceolate, ſubemarginate, ſcarioſe, a little longer than the germ. Gærtner ſeparates this and ſome other Gnaphaliums under the name of Anaxeton, on account of the receptacle being villoſe, or chaffy only towards the circumference; and the down being ſimple or capillary.

Native of the Cape, and perennial.

32. This is an annual plant, and very woolly. Stalks many, upright, a foot or eighteen inches in height. Leaves alternate, quite entire, very ſoft, waved, and convolute. Calyxes whitiſh-yellow, ſoft, with ovate-lanceolate ſcales. Florets many female in the circumference, and a few androgynous in the centre.—It is higher than G. arenarium (n. 26.): the ſtalks are weaker and round; the leaves narrower and longer: the flowers more glomerate[u].

Native of the South of France, Spain, Portugal, Switzerland, Germany, the iſland of Jerſey, the ſea coaſts of Wales, of the Weſt of England, and near Bognor rocks in Suſſex; in ſandy grounds, and on dry banks and walls. Alſo of New Caledonia. It flowers from july to ſeptember.]

There is a variety of this with narrower leaves, not quite ſo woolly; the ſtalks riſe higher, and are more branched; the flowers grow in cloſe bunches on the top of the ſtalks, and are of a pale yellow colour.

[33. Shrubby. Native of Jamaica[x].

34. Stalk herbaceous, a foot and half in height, branched, diffuſed with elongated branches. Leaves alternate, ſpatulate except the upper ones which are lanceolate, green and almoſt naked on the upper ſurface. Peduncles terminating, very long, tomentoſe, whitiſh, with a very few leaves extremely

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[b] Linn. mant. and ſyſt. [c] Hort. kew. [d] Linn. mant. [e] Linn. ſuppl. [f] Ibid. [g] Linn. amoen. [h] Mill. fig. [i] Pollich. [k] Thunberg. [l] Krocker.

[m] Hort. kew. [n] Linn. ſuppl. [o] Bergius. [p] Linn. ſpec. [q] Dillenius. [r] Hort. kew. [s] Linn. ſpec. [t] Linn. ſyſt. [u] Linn. ſpec. Haller, Pollich. Krocker. [x] Swartz.

narrow, terminated by a glomerate cyme. Calyx yellowiſh.

Native of the Cape of Good Hope[y].]

35. Lower leaves oblong and blunt. Stems about three feet high, dividing into many irregular branches, on which are oblong blunt leaves, hoary on their under ſide, but of a dark green above, decurrent. Stems terminated by a compound corymb of flowers, cloſely joined together, of a bright gold colour, but ſmall, and changing to a darker colour as they fade. Native of the Cape.

[Cultivated 1691, in the royal garden at Hampton-court[z].]

36. Under leaves ſpreading near the ground, woolly on their under ſide. Stems about ſix inches high, with lanceolate acute leaves, woolly, terminated by a large corymb of flowers ſitting very cloſe, and of a fine red colour.

Native of Egypt and Paleſtine.

37. This is an annual plant, ſending out many oblong blunt leaves near the root. Stems a foot and half high. Leaves alternate, when handled emitting a very rank odour. Stems terminated by a corymb of flowers, which have large ſilvery calyxes, that will retain their beauty ſeveral years.

Native of the Cape.

[It varies with golden calyxes[a]. Cultivated in 1692, by Mr. George London, at Brompton[b].]

38. Annual. Bottom-leaves oblong, a little waved, hoary on their under ſide. Stems about a foot high. The whole plant has a diſagreeable odour. The Flowers in a terminating corymb: they are white and appear in july.

Native of the Cape of Good Hope, and alſo of North America.

[Cultivated in 1732, by James Sherard, M. D. at Eltham[c].

39. Annual. Seldom riſes above ſix or nine inches in height. Flowers yellowiſh, and diſpoſed pretty thick about the top of the ſtalk, which puts on the appearance of a ſhorter ſpike[d].

Native of Jamaica, in the coldeſt mountains of Liguanea.

40. Perennial. Stalks ſimple, hardiſh, tomentoſe, throwing out ſmall branches from the axils; theſe, as well as the whole plant, are very white. The corymbs are leafleſs. The calyxes are white, naked, not ovate-lanceolate as in *Gn. patulum*, but plaited and waved.

Native of the Cape of Good Hope[e].

41. Perennial. Stalks wand-like, branched, tomentoſe. Leaves blunt, tomentoſe on both ſides, but quite white underneath, a little waved, ſpreading, reflex. Corymb compound, terminating, ſeſſile.—Native of the Cape of Good Hope[f].

Introduced in 1774, by Mr. Francis Maſſon.

42. Stalks aſcending, ſimple, ſcarcely a foot high, very tomentoſe. Leaves blunt. Flowers terminating, crowded. Calycine ſcales naked, purple or white, hirſute at the baſe.

Native of the Cape[g].

43. Stalks ſeveral, half a foot in height. Flowers glomerate. Calyxes ſmooth, conſiſting of numerous, ovate ſcales, which ſpread out quite flat as ſoon as the time of flowering is paſt, and are purple within, with ſnow-white tips.

Native of the Cape[h].]

44. This is an annual plant, with woolly obtuſe leaves. Stems ſingle, about nine inches high. Flowers in ſpikes from the ſide of the ſtalks, of a dirty white colour.

[Stalk hairy, branched, upright. Leaves bowed back, almoſt naked. Flowers conglobate, unequal, ſubſeſſile. Calyxes white, ſharp. Corollas yellow[i].

Native of Virginia, Penſylvania, and New England. Cultivated in 1699, by Mr. Jacob Bobart, in the Oxford garden[k].]

45. Root perennial, creeping, and ſpreading far, ſo as to become a troubleſome weed. [Stalks extremely downy, white. Leaves, numerous, long, ſeſſile, growing without order round the ſtem, entire at the edges, dark green, naked above, beneath covered with a thick down, and whitiſh. The flowering branches form a broad flat bunch: each branch contains numerous crowded heads, on ſhort, branched, downy peduncles, but the middle ones ſeſſile: ſcales of the calyx bluntly ovate, white, not downy. Seed crowned with a ſeſſile feather of few ſimple rays, as long as the calyx. Haller ſays that the flowers are all hermaphrodite, but afterwards adds, that a few females are ſometimes intermixed with them[l].

Native of North America, where it grows in vaſt quantities in uncultivated fields, glades, hills, &c. and is called *Life Everlaſting*; becauſe the ſilvery heads, properly dried, will keep their beauty long without changing[m]. It is alſo found in Kamtſchatka: and with us in England; having been obſerved near Bocking in Eſſex by Mr. Dale; and on the banks of Rymny river, for the ſpace of twelve miles by Mr. Lhwyd. None of our old herbariſts mention its being found wild in this iſland, but it has been long known in our gardens. It flowers from july to ſeptember.

A decoction of the flowers and ſtalks is uſed in America, to foment the limbs, for pains and bruiſes[n].]

46. Perennial. From the main ſtalk come out runners, which take root in the ground. Stem-leaves narrower, woolly, alternate. Flowers in a terminating corymb, white and ſmall, appearing in june and july.—Native of North America.

[Linneus obſerves, that it has altogether the air of the foregoing. He had ſeen only the female, and doubted whether it might not be a variety only of the next ſpecies.

It was cultivated by Mr. Miller in 1759[o].

47. Root woody, brown, ſtrikes deep, throwing out a few rigid fibres; from the crown ariſe ſeveral creeping runners. The root-leaves form a thick tuft, and are oval at the extremity, tapering into a long footſtalk; they are green and ſlightly hairy above, beneath white with a thick down. Stems erect, ſimple, from two or three to ſix or ſeven inches high, white, downy, cloathed with numerous ſemiamplexicaul linear leaves, green above, white and downy beneath. Flowering heads three to eight crown the ſtem in a cloſe bunch, on ſhort peduncles; ſcales of the calyx blunt, the outer ones ſhort, green covered with down, the inner widening upwards, long, ſmooth, white, ſhining, frequently tinged with purple. The calyxes bearing female flowers are cylindrical; the ſeed ſhort, crowned by a ſeſſile down with ſimple rays, longer than the calyx. The calyxes bearing hermaphrodite flowers are globular, ſhorter, and the feather does not exceed the calyx. Haller ſuſpects that the hermaphrodite flowers are barren. It is rare that any ripe ſeed is produced, ſuch being the caſe with many plants that creep by the roots. The female heads often have imperfect ſeeds; the hermaphrodites none at all. Not one of the figures are good[p].

Native of moſt parts of Europe, on open downs. With us on Newmarket heath and Gogmagog hills, Canham heath near Bury, Swaffham and Stratton heaths in Norfolk, in Cornwall, Wales, on Bernack and Wittering heaths, in the northern counties, and Scotland. Flowering in may and june.

48. Root perennial. Stalk entirely ſimple, ſhorter than a finger, with three or four lanceolate leaves. Root-leaves lanceolate-wedge-ſhaped, the upper ſurface green, ſmooth and even, the under white with a ſtreaked nap, ſo that the edge even of the upper ſurface appears white. It has runners at the root like the foregoing. Flowers terminating, few, crowded, without leaves. Calyx cylindrical, ſwell-

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[y] Linn. mant. [z] Hort. kew. from Plukenet. [a] Linn. ſyſt.
[b] Hort. kew. from Plukenet and Moriſon. [c] Dill. elth.
[d] Browne. [e] Linn. ſpec. [f] Ibid. [g] Ibid.
[h] Linn. amoen. and ſpec. [i] Linn. ſpec.
[k] Hort. kew. from Mor. hiſt.

[l] Woodw. Mſs. [m] Kalm. [n] Ibid. [o] Hort. kew.
[p] Woodw. Mſs.

ing at the baſe; the ſcales membranaceous at the tip, lanceolate, ſharp, upright[q].—Linneus has obſerved only the female flowers, and doubts whether it may not be a variety of *Gn. dioicum.*

The colour of the flower is by no means ſhining in this; otherwiſe it has the appearance of the foregoing, the ſize, ſtalks, flowers, and runners; but the leaves are narrower, the calycine ſcales lanceolate, villoſe at the baſe, brown at the tip and edge[r].

Native of the Lapland Alps, and of Switzerland. Introduced in 1775, by Drs. Pitcairn and Fothergill[s].

49. Perennial. Stalk half a foot high, tomentoſe. Leaves ending in the petioles, broader at top, ſharp, toothed, tomentoſe, white. Corymbs compound terminating the branches. Flowers ſmall: calycine ſcales ovate, brown, thoſe ſurrounding the diſk dilated, round and white; ſo that the heads are brown with a white crown[t].

Native of the Eaſt Indies, and Cochinchina.

50. Annual. Stalks from a ſpan to a foot in height, ſometimes upright and unbranched, ſometimes reclining and putting out a few branches, ſlender, tomentoſe. Leaves from green becoming hoary; thoſe next the root broader, and (according to the figure) waved about the edge, quickly drying away; ſtalk-leaves narrower, till they become linear among the flowers, the heads of which are ſhort and purpliſh. It flowers in ſummer and autumn[u].

Native of Carolina and Virginia. Cultivated in the Eltham garden before 1732.

51. Stalks proſtrate, filiform, hardiſh, with alternate, upright branches. Leaves alternate, ſeſſile, mucronate, the upper ſurface naked but not ſmooth. Corymb or umbel terminating, and very ſhort; flowers peduncled. Calyx green, with a ſhort, white ray.

Native of the Cape of Good Hope, Montin[x].

52. This is a biennial plant. In woods one ſtem from twelve to eighteen inches high generally grows from the root. In open pround the root-leaves form a thick tuft, and from among them ariſe ſeveral ſhorter ſtems, ſometimes not more than three inches high, at firſt often declining, but very ſoon aſcending. Root-leaves long, of a very narrow linear-lanceolate form, green and hairy above, white and thickly downy beneath. Stalk ſimple, white, downy, cloathed with numerous linear leaves, half embracing the ſtalk, green and hairy above, white and downy beneath, like the others. Flowers in a long ſpike, compoſed of very ſhort branches, bearing from one to five or more flowers; the lower branches ſomewhat diſtant, the upper crowded; beneath each a leaf, ſimilar to, but ſmaller than the ſtem-leaves. Flowering heads very ſmall; ſcales of the calyx bluntly oval, greeniſh at the baſe, yellowiſh brown upwards, ſmooth with ſhining margins; exterior ſhort, interior as long as the florets. Seeds minute, crowned with a ſeſſile feather, having ſimple rays as long as the calyx[y]. Female flowers numerous; hermaphrodites four or five[z].

Native of moſt parts of Europe. In Britain it has been obſerved in Norwood, Surrey; on Hampſtead heath, and in the woods thereabouts; near Charlton; about Harefield; in Gamlingay park, Cambridgeſhire; in Armingdale wood near Norwich; on Naſeby field, and Thorp-Malſor in Northamptonſhire; in rough paſtures near Fladbury in Worceſterſhire; on a ſandy heath, a mile from Shiffnall, on the road to Wolverhampton; on the banks of the canal in the pariſh of Coſely, Warwickſhire; on the great iſland in Winander mere; and on the highlands of Scotland. It flowers in auguſt.

53. Stems ſeveral, aſcending, a finger's length, ſmooth, covered with leaves and flowers. Leaves unequal, acute, ſmooth above, ſubtomentoſe underneath, the upper ones longeſt. Flowers from all the axils from top to bottom of the ſtem, glomerate, minute. Calycine ſcales ſcarioſe, ferruginous, ſhining, ovate-lanceolate.

Native of Egypt[a].

54. Annual. Stalk a ſpan high, upright, without any branch. Leaves very narrow, an inch in length. Flowers in whorls over the whole ſtalk, and ſeſſile. The whole plant, and even the flowers are aſh-coloured. It is related to the foregoing.

Native of the Cape of Good Hope.

55. Stalks filiform, very many, decumbent, diffuſed, ſomewhat branching. Leaves ſeſſile, almoſt naked. Flowers flattiſh, and cohering in circles. Calyx concealed by a very thick white nap. Corollas ſmall, ſurrounded by nap.

Native of the Cape.

56. Perennial. Leaves three or four at the root, elliptic, bluntiſh. Scape twice as long as the leaves, hairy. Flowers terminating. Calyxes roundiſh, villoſe, white about the edge.

Native of the Cape.

57. Stalks proſtrate, filiform. Leaves white with a fine nap, ſhining, crowded. Flowers in a terminating, faſtigiate, leafleſs corymb. Calyx ovate, ſmooth and even, teſtaceous and ſcarioſe. Florets many in a ſmall calyx.

Native of the Cape[b]. Introduced 1787, by Maſſon[c].

58. Perennial. Stalks a ſpan high, upright, villoſe, flowering at the end, branched, hairy. Leaves alternate, narrow-lanceolate, with a very thick nap on them. Flowers in corymbs, heaped. Peduncles leafy. The flowers proceed as it were from the ray of a full calyx.—Native of the Cape[d].

59. This reſembles *G. ſylvaticum* very much, but it is low, and the ſtalk is decumbent whilſt the plant is in flower[e].

Perennial.—Root-leaves in tufts, half or three quarters of an inch long, narrow linear-lanceolate, ſlightly hairy above, downy beneath but greeniſh. Stem two or three inches high, with two or three longer and narrower ſeſſile leaves. Flowering heads ſingle, not more than three or four, larger than in *Gn. ſylvaticum*, alternate, either ſeſſile or on ſhort downy peduncles, from the axils of the upper leaves, which are not longer than the heads. Scales of the calyx lanceolate, with a green dorſal line at the baſe, and browniſh-yellow ſhining tips and margins. Seeds elliptical, crowned with a ſeſſile down having ſimple rays as long as the florets, and longer than the calyx[f]. The florets are moſtly female, but a few in the centre of the diſk are hermaphrodite[g].

Native of the Swiſs and Italian Alps; and the tops of the highland mountains in Scotland: found on Ben Lomond, by Dr. J. E. Smith; and five miles from Fort George, on the weſt ſide of the road to Aberdeen. It flowers in july and auguſt.

60. Annual. Stem from three or four to ſeven or eight inches and even more, upright, covered with thick white down, and much branched; branches ſpreading, lower ones often procumbent, cloathed with numerous leaves, particularly towards the ſummit, and theſe thickeſt and moſt downy. Leaves elliptical, tapering into a long footſtalk, ſlightly downy and greeniſh above, more ſo and whitiſh beneath. The ends of the branches are crowded with numerous heads of nearly ſeſſile flowers. Scales of the calyx lanceolate, ſmooth, brown, ſhining; when old blackiſh, almoſt hid in the down. Feather ſeſſile, with few ſimple rays as long as the calyx[h].

Native of the greater part of Europe, in marſhy places, eſpecially where water ſtagnates in winter. It flowers in auguſt.

61. Annual. Leaves ſpatulate, extremely hirſute. Heads leafy. Branches higher than the ſtalk[i].

Native of the Cape of Good Hope.

62. Root faſcicled, with ſmall fibres, annual. Stalks one or two, ſimple, naked at top, white with

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[q] Linn. ſpec.
[r] Linn. ſuec.
[s] Hort. kew.
[t] Linn. zeyl.
[u] Dill. elth.
[x] Linn. ſuppl.
[y] Woodw. Mſs.
[z] Haller.

[a] Vahl.
[b] Linn. ſuppl.
[c] Hort. kew.
[d] Linn. ſuppl.
[e] Linn.
[f] Woodw. Mſs.
[g] Lightfoot.
[h] Woodw. Mſs.
[i] Linn. ſyſt.

down, a ſpan and half in height. Root-leaves very many, drawn to a point below, ſharp, entire, lax, often reflex, a palm in length and half a line in breadth : ſtem-leaves ſeſſile, upright, ſhorter. Flowers on the ſtalk terminating, glomerate, ſeſſile, purpliſh ; the heads the ſize of a large pea.

Native of Japan ; flowering in auguſt[k].

63, 64, 65. Natives of New Zealand[l].

66. Stem four feet high, ſimple, erect. Leaves large, alternate. Flowers yellow, in terminating erect panicles, the marginal ſcales of the calyx being red and membranaceous.

Native of Cochinchina[m].]

PROPAGATION AND CULTURE.

The tender ſorts, ſuch as all thoſe from the Cape, &c. 1 to 12, 15 to 24, 27 to 31, 33 to 35, 37 to 43, 51, 53 to 58, 61 to 66 Oriental Everlaſting (n. 25.) &c. may be increaſed, by ſlipping off the heads, or by cuttings, during any of the ſummer months : they ſhould be planted in a bed of light earth, (or in pots in a gentle hot-bed,) and covered with hand-glaſſes, or ſhaded with mats, obſerving to refreſh them frequently with water in ſmall quantities ; theſe cuttings will put out roots in ſix or eight weeks, then plant them in pots filled with light earth, and place them in a ſhady ſituation till they have taken new root, when they may be removed to an open ſituation, and placed among other hardy exotics, till the middle or end of october ; at which time they ſhould be placed under a common frame, where they may be protected from froſt, but in mild weather they ſhould be expoſed to the open air.

Common Shrubby Everlaſting (n. 13.) igneſcens (n. 14.) ſweet-ſcented (25) ſanguineum (36) are ſo hardy, as in very mild winters to live abroad in warm borders near walls, with little ſhelter.

Jerſey Everlaſting (n. 32.) and ſome others, will come up better from ſcattered ſeeds, than when they are ſown by art ; but if the ſeeds are ſown, it muſt be ſoon after they are ripe. The plants require only to be kept clean from weeds, and to be thinned where they are too cloſe.

Gn. margaritaceum and plantagineum (n. 45 and 46.) will thrive in almoſt any ſoil and ſituation, and are eaſily propagated by their creeping roots.

As to the common European ſorts, if the ſeeds are permitted to ſcatter, the plants will come up in the ſpring, with greater certainty than if they were ſown ; but they are rather regarded as weeds than as garden plants.

[GNAPHALIUM. See *Athanaſia, Conyza, Filago, Micropus, Seriphium, Stoebe, Stæhelina.*

GNAPHALOIDES. See *Gnaphalium.*

GNEMON. See *Gnetum.*

GNETUM.

Lin. gen. Reich. n. 1188. *Schreb.* 1473. *Juſſ.* 406.

Claſſ. 21. 8. Monoecia Monadelphia.

Nat. order of *Piperitæ.*—*Urticæ* Juſſ.

GENERIC CHARACTER.

Ament of *whorls* remote, callous, thickened, propped underneath with a partial *calycle.* This is peltate, orbicular, flat, quite entire, and contains ſeſſile floſcules ; the *males* at bottom, the *females* above, in the ſame whorl.

* *Males.*

CAL. *Scale* ovate, minute, coloured.

COR. none.

STAM. *Filament* ſingle, filiform, longer than the ſcale. *Anthers* double, connected.

* *Females.*

CAL. *Scale* torn, rude.

COR. none.

PIST. *Germ* ovate, immerſed in the receptacle of the whorl, the length of the ſtamens. *Style* conic, ſhort. *Stigma* trifid, acute.

PER. *Drupe* ovate, one-celled.

SEED. Nut oblong, ſtreaked.

OBS. *Rumphius has determined it to be dioecous; mine was monoecous: I have alſo ſeen an ament merely male, ſitting on its own peduncle by the female floſcule.*

ESSENTIAL CHARACTER.

MALE. An *ament* with ſcales. *Cor.* none. *Filam.* one with two anthers.

FEM. An *ament* with ſcales. *Cor.* none. *Style* with a bifid ſtigma. *Drupe* with one ſeed.

SPECIES.

1. Gnetum Gnemon.
   Lin. ſyſt. 867. *Reich.* 4. 197. *mant.* 125.
   Gnemon domeſtica. *Rumph. amb.* 1. 181. *t.* 71.

DESCRIPTION, &c.

Branches ſtiff, jointed, broader below the joints. Leaves oppoſite, petioled, lanceolate-ovate, quite entire, ſmooth and even. Aments axillary, peduncled, in pairs from each axil, in ſmall whorls, from an orbicular, perfoliate, entire bracte, callous above, in which the floſcules are immerſed, the females above, or towards the rachis, uſually ſix or ſeven in number; the males towards the edge or below.

Native of the Eaſt Indies[a]; where the leaves, male catkins and fruits are eaten, but not raw[b].

Gnemon is the vernacular name in Ternate, &c.]

GNIDIA.

Lin. gen. n. 487. *Reich.* 528. *Schreb.* 666. *Juſſ.* 77.—Struthia. *Roy.*

Claſſ. 8. 1. Octandria Monogynia.

Nat. order of *Vepreculæ.*—*Thymelææ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, funnel-form, coloured: *tube* filiform, very long ; *border* four-parted, flat.

COR. *Petals* four, ſeſſile, flat, ſhorter than the calyx, and inſerted into it.

STAM. *Filaments* eight, briſtle-ſhaped, erect, almoſt the length of the flower. *Anthers* ſimple.

PIST. *Germ* ovate. *Style* filiform, inſerted into the ſide of the germ, the length of the ſtamens. *Stigma* capitate, hiſpid.

PER. none. *Fruit* in the bottom of the calyx.

SEED ſingle, ovate, obliquely acute.

OBS. *Hence it differs from* Paſſerina *in the corolla only.*

ESSENTIAL CHARACTER.

Cal. funnel-form, four-cleft. *Pet.* four, inſerted into the calyx. *Seed* one, ſomewhat berried.

SPECIES.

1. Gnidia pinifolia.
   Lin. ſpec. 512. *ſyſt.* 372. *Reich.* 2. 195. *mant.* 375. *Berg. cap.* 122. *Burm. afr.* 112. *t.* 41. *f.* 3. (Rapunculus). *Seba muſ.* 2. 32. *t.* 32. *f.* 5. (Valerianoides).
   Leaves ſcattered linear ; floral leaves in whorls.

[2. Gnidia radiata.
   Lin. ſyſt. 372. *Reich.* 2. 195. *mant.* 67. *Burm. prodr.* 12.
   Leaves ſubulate three-ſided erect, heads terminating ſeſſile radiate, bractes lanceolate.

3. Gnidia ſimplex. *Flax-leaved Gnidia.*
   Lin. ſyſt. 372. *Reich.* 2. 195. *mant.* 67. *Burm. prodr.* 12.
   G. viridis. *Berg. cap.* 125.
   Thymelæa fol. Paſſerinæ. *Breyn. cent.* 10. *t.* 6.
   All the leaves linear acute ; flowers terminating ſeſſile.

4. Gnidia tomentoſa.
   Lin. ſpec. 512. *ſyſt.* 372. *Reich.* 2. 196.
   G. pubeſcens. *Berg. cap.* 124.
   Leaves ſcattered ovate-oblong ſmooth, ſcabrous about the edge.

5. Gnidia ſericea. *Silky Gnidia.*
   Lin. ſyſt. 373. *Reich.* 2. 196.
   Paſſerina ſericea. *Lin. ſpec.* 513. *amœn.* 4. 271.
   Nectandra ſericea. *Berg. cap.* 131.
   Thymelæa ſericea, &c. *Burm. afr.* 135. *t.* 49. *f.* 2.
   Leaves ovate tomentoſe, floral leaves in fours.

6. Gnidia oppoſitifolia. *Oppoſite-leaved Gnidia.*
   Lin. ſpec. 512. *ſyſt.* 373. *mant.* 375. *Reich.* 2. 196. *Pluk. alm. t.* 323. *f.* 7. Thymelæa).

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[k] Thunberg.
[l] Forſter.
[m] Loureiro.
[a] Linn. mant.
[b] Rumphius.

β. Paſſerina lævigata. *Lin. ſpec.* 513. *amœn.* 4. 312.
Nectandra lævigata. *Berg. cap.* 134.
Thymelæa fol. planis acutis, &c. *Burm. afr.* 137. *t.* 49. *f.* 3.
Leaves oppoſite lanceolate.

7. Gnidia capitata.
Lin. ſyſt. 373. *ſuppl.* 224.
Leaves ſcattered lanceolate ſmooth, flowers in heads fortified with bractes, peduncles naked.

8. Gnidia filamentoſa.
Lin. ſyſt. 373. *ſuppl.* 224.
Leaves elliptically ovate very ſmooth approximating, flowers in heads, filaments capillary.

9. Gnidia imbricata.
Lin. ſyſt. 373. *ſuppl.* 225.
Leaves oblong, imbricated in four rows, ſilky; flowers terminating in the axils of the leaves.

10. Gnidia Sparrmanni.
G. pinifolia. *Lin. ſyſt.* 373. *ſuppl.* 225.
Leaves linear-ſubulate, flat above, ſharp; flowers in pairs, axillary.

11. Gnidia daphnæfolia.
Lin. ſyſt. 373. *ſuppl.* 225.
α. *hirſuta:* leaves oblong ſpatulate, hirſutely hoary; flowers ſmaller.
β. *glabra:* leaves oblong, alternated towards the baſe, almoſt naked; flowers larger.
Decandrous: leaves oblong, flat, quite entire; head terminating, peduncled, involucred; flowers five-cleft.

DESCRIPTIONS, &c.

Theſe are ſhrubby plants, except the laſt; natives of the Cape of Good Hope. The leaves are oppoſite only in one or two ſorts; in the reſt they are ſcattered. The flowers come out at the ends of the ſtem and branches, uſually diſtinct, ſeldom in parcels together.]

1. Stem three or four feet high, with a few ſide-branches. Leaves acuminate, pale on their under ſide with a ſtrong longitudinal nerve or keel, and reſembling thoſe of Roſemary. The flowers come out almoſt in whorls from between the leaves at the extremities of the branches on ſhort peduncles.

[Calyx white. Petals lanceolate, ſhorter than the calyx, white. Four of the ſtamens are within and four without the tube[a].

Cultivated by Mr. Miller in 1768. It varies with blue flowers.

2. This is a rough, proliferous ſhrub. Leaves mucronate, ſmooth. Heads radiate with lanceolate bractes, broader than the leaf. Flowers ſomewhat villoſe on the outſide. Border of the calyx ſmooth within, the ſame length with the tube. Petals ſmaller than the calyx, and hairy. Four of the ſtamens extend beyond the tube; the other four lie in the throat of it[b].

3. Stems half a foot high, unequal, roughened with four tubercles from leaves that are fallen. Leaves upright, ſmooth and even. Flowers naked, ſeſſile on the villoſe extremity of the branch; the calyx, petals, and anthers all yellow. The floral leaves not broader than the reſt. Petals oblong, acuminate. Four ſtamens in the throat of the tube, the other four above it[c].

Introduced in 1786, by Mr. Francis Maſſon[d].

4. The extremities of the twigs woolly, as in its congeners. The uppermoſt leaves ſomewhat pubeſcent. Four of the ſtamens ſtanding out, and four in the throat of the tube. Petals ſmall, emarginate[e].

5. Throat of the corolla crowned with eight coloured threads, the ſame length with the corolla itſelf, on the outſide of the petals. Stamens four in the throat, and four within the tube[f].

Introduced in 1786, by Mr. Francis Maſſon[g].

6. The uppermoſt leaves are blood-red at the extremity. Cultivated in gardens it acquires petals. Flowers villoſe on the outſide. Stamens, beſides the four calluſes above the throat, are four under the throat, and four in the middle of the tube[h].

Introduced in 1788, by Maſſon[i].

7. Stem ſhrubby, with upright, round, purpliſh branches. Leaves very narrow and remote, ſmooth and even. Flowers aggregate, peduncled. Involucre eight-leaved, lanceolate, equal, half the length of the floſcules; which are ſixteen in number, ſeſſile, pubeſcent, hoary: tube filiform; border ſhort, five-parted. Stamens ten, five without and five within the throat. The flower reſembles that of Paſſerina; and perhaps it may be a ſpecies of Dais[k].

8. This is a very ſmooth ſhrub, tubercled with the ſcars of fallen leaves. Leaves alternate, ſeſſile, quite entire, without apparent veins. Heads of flowers ſolitary, ſeſſile. Involucre ſmooth. Corolla villoſe, with a four-parted border. Four of the filaments the length of the corolla, four ſhorter in the throat.—There is a variety with narrower leaves, but it is eaſily known by the filaments[l].

9. Found at the Cape by Thunberg.

10. Branches ſmooth and even, not tomentoſe. Leaves not prickly, convex underneath, ſmooth and even, patulous. Flowers from the uppermoſt twigs, ſmooth: border ſharp, twice the length of the tube. Four anthers above the throat, ſurrounded with hairs, and four within the tube, ſmaller.

Obſerved at the Cape, by Sparrmann[m].

11. This has the habit, leaves, manner of flowering, involucre, form and hairineſs of the calyx, as in *Dais cotinifolia*; the ſtructure and ſituation of the parts in the flower is exactly as in this genus, but not the number. The leaves are alternate, not oppoſite, as in Dais. The involucre as in Dais, but five-leaved.—Found by Thouin in the iſland of Madagaſcar.

It is difficult to aſcertain the limits between Dais and Gnidia; as alſo between Daphne and Paſſerina[n].]

PROPAGATION AND CULTURE.

Theſe are uſually increaſed by cuttings planted during the ſummer months in pots filled with light earth, plunged into a very moderate hot-bed, covering the pots cloſely with bell or hand-glaſſes to exclude the air, and ſhading them during the day. They will put out roots in ſix weeks, when they ſhould be gradually inured to the open air. In winter place them in a dry airy glaſs-caſe, where they may enjoy free air in mild weather, and be protected from froſt and damp air.

[GNIDIUM. See *Daphne*.

GOAT'S-BEARD. See *Tragopogon*.

———-RUE. See *Galega*.

———-THORN. See *Aſtragalus*.

GOLDEN-FLOWER. See *Chryſanthemum*.

———-ROD. See *Solidago*.

——————TREE. See *Boſea*.

GOLDILOCKS or GOLDYLOCKS. See *Chryſocoma* and *Gnaphalium*.

GOLD OF PLEASURE. See *Myagrum*.

GOMOZIA. See *Nerteria*.

GOMPHIA. (*From* γομφος, *a nail, knob or button, the flowers being a roundiſh form before they open.*)
Lin. gen. Schreb. n. 738. Jabotapita. *Plum.* 32. Ochnæ. *ſp. ed. pr. Gærtn. t.* 70 *Swartz prodr.* 67.
Claſſ. 10. 1. Decandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved: *leaflets* lanceolate, ſharpiſh, nerved, coloured, deciduous; two with a membrane on both ſides, one with a membrane on one ſide only, and two without any.

COR. *Petals* five, ſpreading, longer than the calyx, ſomewhat unequal: *claws* ſhorter than the calyx, widening gradually into roundiſh, flat, entire *laminas*.

STAM. *Filaments* ten, thick, angular, very ſhort. *Anthers* upright, parallelopiped, drawn to a point at top, gaping at the tip on the outſide with a double hole, ſhorter than the calyx.

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[a] Linn. ſyſt. and mant.
[b] Linn. mant.
[c] Ibid.
[d] Hort. kew.
[e] Linn. ſyſt.
[f] Ibid.
[g] Hort. kew.
[h] Linn. ſyſt.
[i] Hort. kew.
[k] Linn. ſuppl.
[l] Ibid.
[m] Ibid.
[n] Ibid.

PIST. *Germ* ſitting on a ſhort, fleſhy, angular receptacle, five-cornered and five-cleft. *Style* longer than the ſtamens, five-furrowed. *Stigma* ſharp.

PER. *Berries* from one to five, generally two, ovate, obliquely attenuated at the baſe, ſomewhat compreſſed, obtuſe, upright, ſitting on a very large globular receptacle (for receiving a ſingle berry) or lobed for ſeveral berries, each fixed to each lobe.

SEEDS ſolitary, ovate.

ESSENTIAL CHARACTER.

Cal. five-leaved. *Cor.* five-petalled. *Berries* two (one to five) on a large receptacle. *Seed* ſolitary.

SPECIES.

1. Gomphia anguſtifolia.
 Vahl ſymb. 2. 49.
 Meeſia ſerrata. *Gærtn. fruct.* 1. 344. *t.* 70.
 Tsjocatti. *Rheed. mal.* 5. 95. *t.* 48.
 Walkera. *Schreb. gen. n.* 378.
 Leaves lanceolate, ſerrate on the outſide, panicle terminating, petals longer than the calyx.
2. Gomphia nitida.
 Vahl ſymb. 2. 49.
 Ochna nitida. *Swartz prodr.* 67.
 Leaves ovate-lanceolate, acuminate, ſerrate, panicles terminating, calyxes equal to the corolla.
3. Gomphia lævigata.
 Vahl ſymb. 2. 49.
 Leaves lanceolate, very obtuſe, quite entire, emarginate, panicle terminating.

DESCRIPTIONS, *&c.*

1. This is very ſmooth. Leaves alternate, ſeſſile, two inches long, quite entire from the baſe to the middle, acute at both ends, membranaceous, netted with very fine veins. Flowers in a panicle two inches long, before they unfold globular. Calycine leaflets roundiſh [a], permanent. Petals lanceolate. Filaments (ten *Vahl*) five, half the length of the petals. Style briſtle-ſhaped, the length of the ſtamens. Berried drupes five, obovate, kidney-form, diſtant, erect, at firſt red, afterwards brown, ſomewhat wrinkled: pulp thin, drying to a coriaceous cruſt: ſhell the form of a drupe, ſomewhat bony, one-celled, valveleſs. Seeds ſolitary, kidney-form, ſoftiſh to the touch [b].

This tree is only about twelve feet high, with a ſlender trunk; the bark is browniſh red, the wood whitiſh, with a greeniſh heart. The flowers are yellow, and have no ſcent [c]. Native of the Eaſt-Indies.

2. Branches alternate, flexuoſe at top, covered with a brown bark, round, ſmooth, as is the whole plant. Leaves on very ſhort petioles, alternate, from two to three inches long, two inches broad, coriaceous, ſcarcely veined, very ſmooth and even, with mucronate ſerratures, but quite entire at the baſe. Panicle ſtrict, ſpreading, a hand or more in length; partial peduncles and pedicels alternate; ſquarroſe with the permanent pedicels after the flowers have fallen off. Flowers before their evolution ovate, obtuſe. Calycine leaflets the length of the petals, lanceolate. Petals yellow. Filaments ten ſmall tubercles. Anthers the length of the corolla, awl-ſhaped. Germ five-cornered. Style the length of the anthers. Stigma acute [d]. Native of the Weſt-Indies.

3. This alſo is very ſmooth. The branches are alternate, and covered with an aſh-coloured bark. Leaves petioled, ſcattered, ſharp at the baſe, very blunt at the top, two inches long, ſhining, veinleſs, ſubcoriaceous. Petiole very ſhort, thickened at the inſertion. Panicle like that of *Ochna ſquarroſa*; peduncles ſpreading very much, many of them a little bent in, purple. Calycine leaflets lanceolate. Corolla the length of the calyx. Berries placed on a receptacle.

Native of the Eaſt-Indies [e].]

GOMPHRENA (*of Pliny: From γομφος, clavus; a nail, knob or button.*)

Lin. gen. n. 314. *Reich. n.* 343. *Schreb. n.* 441. *Juſſ.* 88. *Gærtn. t.* 128. Amaranthoides. *Tournef. t.* 423. Caraxeron. *Vaill. mem. acad. par.* 1722.

Claſſ. 5. 2. Pentandria Digynia.

Nat. order of *Amaranthi*, Juſſ. *Miſcellaneæ*, Lin.

GENERIC CHARACTER.

CAL. *Perianth* coloured; outer three-leaved: *leaflets* two, converging, keeled.

COR. five-petalled, upright: *petals* ſubulate, permanent, rude, villoſe.—*Nectary*, a cylindric tube, the length of the corolla; with a five-toothed, patulous mouth.

STAM. *Filaments* five, ſcarcely obſervable, within the mouth of the nectary. *Anthers* upright, cloſing the mouth of the nectary.

PIST. *Germ* ovate, with a point. *Style* cloven half way, filiform. *Stigmas* ſimple, the length of the ſtamens.

PER. *Capſule* roundiſh, circumciſed.

SEED ſingle, large, roundiſh, with an oblique tip.

OBS. *What is here called the corolla is rather the calyx.*

ESSENTIAL CHARACTER.

Cal. coloured, outer three-leaved, leaflets two, converging, keeled. *Pet.* rude, villoſe. *Nect.* cylindric, five-toothed. *Style* cloven half way. *Capſ.* one-ſeeded.

SPECIES.

1. Gomphrena globoſa. *Annual Globe-Amaranth.*
 Lin. ſpec. 326. *Reich.* 1. 630. *hort. cliff.* 86. *upſ.* 57. *fl. zeyl. n.* 115. *Mill. fig. t.* 21. *Gærtn. fruct.* 2. 216. *Lour. cochinch.* 175.
 Amarantho affinis, &c. *Breyn. cent.* 109. *t.* 51. *Comm. hort.* 1. *t.* 45.
 Flos globoſus. *Rumph. amb.* 5. *t.* 100. *f.* 2.
 Wadapu. *Rheed. mal.* 10. 73. *t.* 37.
 Stem upright, leaves ovate-lanceolate, heads ſolitary, peduncles two-leaved.
2. Gomphrena perennis. *Perennial Globe-Amaranth.*
 Lin. ſpec. 326. *Reich.* 630. *Dill. elth.* 24. *t.* 20. *f.* 22. (Amaranthoides).
 Leaves lanceolate, heads two-leaved, florets ſeparated by a proper perianth.
[3. Gomphrena hiſpida. *Hairy Globe-Amaranth.*
 Lin. ſpec. 326. *Reich.* 630. *Rheed. mal.* 9. 141. *t.* 72. (Min-angani).
 Stem upright, heads two-leaved, leaves crenate.
4. Gomphrena braſilienſis. *Braſilian Globe-Amaranth.*
 Lin. ſpec. 326. *Reich.* 630. *amoen.* 4, 310. *Breyn. cent.* 111. *t.* 52. (Amarantho affinis).
 Leaves ovate-oblong, ſtem upright, heads peduncled, globular, leafleſs.]
5. Gomphrena ſerrata.
 Lin. ſpec. 326. *Reich.* 631.
 Stem upright, brachiate, heads ſolitary, terminating, ſeſſile, calyxes ſerrate.
[6. Gomphrena interrupta.
 Lin. ſpec. 326. *Reich.* 631. *Swartz. obſ.* 108. *L'Herit. ſtirp. nov.* 1. 5. *t.* 3.
 Celoſia procumbens. *Lin. ſyſt.* 247. *Jacqu. miſc.* 2. 344. *icon. Murr. comm. gott.* 1782. 16. *t.* 5.
 Stem almoſt upright, ſpike interrupted.
7. Gomphrena flava.
 Lin. ſpec. 326. *Reich.* 631. *hort. cliff.* 87.
 Peduncles oppoſite, bifid, three-headed, middle head ſeſſile.
8. Gomphrena arboreſcens.
 Lin. ſyſt. 265. *ſuppl.* 173.
 Arboreſcent; hairy, ſomewhat twining.
9. Gomphrena anguſtifolia.
 Vahl ſymb. 3. 45.
 Leaves linear-lanceolate, ſmooth, heads terminating, oblong, ſubtriphyllous.]

DESCRIPTIONS, *&c.*

1. This is an annual plant, riſing with an upright branching ſtalk, about two feet high. Leaves oppoſite, [ſeſſile, quite entire, hiſpid.] Branches and peduncles alſo oppoſite; the latter axillary, long and naked, except that there are two ſhort leaves cloſe under each head of flowers. Theſe heads at their firſt appearance are globular, but as they in-

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[a] Vahl.
[b] Gærtner.
[c] Hort. malab.
[d] Vahl.
[e] Ibid.

creaſe in ſize become oval. [Calyx five-leaved, white-tomentoſe, involucred with three ſcales, two of which are very large, boat-ſhaped, keeled, coloured, converging. Corolla none, unleſs the tube of the ſtamens be reckoned as ſuch. Filaments united into a conical tube, quite entire, except that it is five-toothed at top. Germ ſuperior. Style ſingle, bifid. Capſule roundiſh, compreſſed a little, membranaceous, ſemipellucid, one-celled, cut round above the middle, the upper valve ſhorter. Seed ſmooth, fulvous, inverted[a].

Native of India. It was cultivated in 1714 by the Dutcheſs of Beaufort[b]; but was not common in the Engliſh gardens till 1725. It was raiſed firſt in Holland about 1670[c].] Mr. Miller ſays that he received ſeeds of the white ſort from Holland in 1722. The flowering heads are beautiful, and if gathered before they are too far advanced, will retain their beauty ſeveral years. The ſeed ripens late in autumn, and the plant decays ſoon after.

There are two varieties, one with fine bright purple heads, the other has white or ſilvery heads, and theſe never alter from ſeeds, ſo that they are permanent varieties, though in other reſpects they do not differ: there is alſo one with mixed colours, but whether this aroſe accidentally from the ſeeds of either of the former, I cannot determine, for this variety continues from ſeeds, and the other two. I have cultivated more than thirty years, and have never found either of them vary.

There are alſo two varieties of this which grow naturally in the Weſt-Indies, one with purple, and the other with white heads, which are much ſmaller and rounder than thoſe before-mentioned. The plants grow much larger, and ſpread more into branches, and they are later before they flower, ſo that in cold ſeaſons the ſeeds rarely ripen in England; theſe are called Bachelors Buttons by the inhabitants of America.

[Loureiro alſo mentions a variety in Cochinchina, with white ovate heads, in which all the florets are fertile; whereas in the purple variety moſt of them are barren.]

2. Stems upright, hairy, ſlender. Leaves oppoſite, hairy, ſeſſile. Heads of flowers terminating, ſmall, ſpreading ſo that the calyxes appear diſtinct; they are of a pale ſtraw-colour, and appear in july.

[It was cultivated in the Eltham garden before 1732, and was there raiſed from ſeeds brought from Buenos Ayres by Mr. Mylam[d].

3. Height a cubit and half. Stems quadrangular, jointed, woody, with longiſh white hairs on them, and having a pair of decuſſated branches at each joint. Leaves oppoſite at each joint, ſmall, oblong and narrow, thin, ſoft, having a few hairs on them. Heads of flowers rounded-oblong, at firſt white, but becoming blue. Native of Malabar[e].

4. This is ſomewhat higher than the firſt ſort; the heads are white, ſmaller, and compoſed of ſmaller calyxes, without any leaves at the baſe. Native of Braſil[f].]

5. Stems more ſlender and tall than thoſe of the firſt, and growing irregularly. Leaves ſmaller, but of the ſame ſhape. Flowers in ſpikes at the ends of the branches, broken or divided into three or four parts, ſmall, and of a pale purple colour. The ſeeds were ſent by Dr. Houſtoun from Campeachy: [and it was cultivated by Mr. Miller before 1733.

6. Root annual. Stem ſhrubby at bottom, from one to two feet high. Branches jointed, ſubdecumbent, lanuginoſe, white. Leaves at the root aggregate, ſeſſile; above oppoſite, lanceolate, obtuſe, tomentoſe, beneath white-lanuginoſe, ſoft. Flowering-ſtems leafleſs, ſtiff, whitiſh, except that they are often purple towards the end. Flowers in ſpikes, aggregate, ſeſſile, interrupted, lanuginoſe. Scales two or three, membranaceous, minute, forming an involucre to the calyx, which is five-parted; the parts linear, erect, purple, woolly on the outſide. Germ large, compreſſed, woolly: ſtyle ſhort: ſtigma ſubcapitate, yellow. Capſule largiſh, involved in the calyx, opening in two parts at top, woolly, compreſſed, creſted at the edge. Native of dry ſandy fields in the ſouthern parts of Jamaica[g]: and other parts of the Weſt-Indies. Introduced into the Paris gardens by ſeeds ſent from St. Domingo in 1778 by Jac. Rob. Croſnier[h]: and into the Kew garden in 1784 by Monſ. Thouin[i]. See *Celoſia procumbens.*

7. At each joint of the ſtem two oppoſite peduncles are produced, longer than the leaves, trifid at top, with one globular head of flowers at the end of each diviſion, having no leaves immediately under them. Native of La Vera Cruz[k], where it was found by Houſtoun.

8. Stem round, ſimple, hairy. Leaves oppoſite, on ſhort petioles, oval, obtuſe, leathery, quite entire, having hairs ſcattered over them. Several bractes under each flower, ſharper than the leaves, and of the ſame length with the flower. Flowers aggregate, terminating, the ſize of a walnut. The florets ſeſſile, very numerous. Calyx five-leaved: leaflets ſubulate, flat, woolly at bottom, an inch in length. Corollet cylindric, the length of the calyx. Germ ſuperior, minute.—This is very different from its congeners; it is, however, a genuine ſpecies of this genus.—Found in New Granada, by Mutis[l].

9. Stem herbaceous, erect, four-cornered, with ſhort hairs preſſed cloſe: branches oppoſite, quite ſimple, higher than the ſtem, ſubfiliform, two-leaved. Leaves ſeſſile, narrow, attenuated, an inch and half long, with minute hairs preſſed cloſe, and viſible only with a glaſs, pale green, quite entire. Peduncles terminating the branches, elongated. Heads firſt oblong, then cylindrical, obtuſe; at the baſe of each, leaves uſually three, very ſeldom two, of the ſame ſtructure with the ſtem-leaves, longer than the heads. Calycine leaflets ovate, concave, mucronate; the keel ſubciliate. Petals five, lanceolate, concave, pubeſcent on the outſide, and almoſt equal. Filaments connected at the baſe by means of a membrane. Germ oblong, ſmooth. Style ſingle. Stigma ſimple.—It has the habit of Gomphrena, but differs in having a ſingle ſtyle.—Native of the Eaſt-Indies, where it was found by Koenig[m].]

PROPAGATION AND CULTURE.

The firſt ſort is a very ornamental plant in gardens, and is now very commonly cultivated in the Engliſh gardens. In Portugal, and other warm countries, it is cultivated to adorn their churches in the winter; for if the flowers are gathered when they are fully grown, and dried in the ſhade, they will retain their beauty a long time, eſpecially if they are not expoſed to the air; this plant is annual, and therefore is only propagated by ſeeds, which ſhould be ſown on a good hot-bed the beginning of march; but if the ſeeds are not taken out of their chaffy covering, it will be proper to ſoak them in water for twelve hours before they are ſown, which will greatly facilitate their growing. When the plants are come up half an inch high, they ſhould be tranſplanted on a freſh hot-bed, at about four inches diſtance, obſerving to ſhade them till they have taken root; then they ſhould have freſh air admitted to them every day, in proportion to the warmth of the ſeaſon; they will alſo require to be frequently refreſhed with water. In about a month's time, if the hot-bed is of a proper warmth, the plants will have grown ſo large as nearly to meet, therefore they will require more room, otherwiſe they will draw up weak; then a freſh hot-bed ſhould be prepared, into which there ſhould be a ſufficient number of three farthing pots plunged, filled with light rich earth, and when the bed is in a proper temperature of warmth, the plants ſhould be carefully taken up with balls of earth to their roots, and each planted into a ſeparate pot, obſerving to ſhade them till they have taken new root, afterward they muſt be treated in the ſame manner as other tender exotic plants. When the plants have filled theſe pots with their roots, they ſhould be ſhaken out of the pots, and their roots on the outſide of the ball of earth muſt be carefully pared off; then they ſhould be put into pots a ſize larger, and when there is conveniency of a deep frame, to plunge the pots into another gentle hot-bed, it will bring the plants early to flower, and cauſe them to grow much larger than thoſe which are placed abroad. In july the plants ſhould be inured gradually to bear the open air, into which they may be removed about the middle of that month, and intermixed with other annual plants to adorn the pleaſure-garden; but it will be proper to keep a plant or two of each ſort in ſhelter for ſeeds, becauſe when the autumn proves cold or wet, thoſe plants which are expoſed abroad, ſeldom produce good ſeeds.

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[a] Gærtner.
[b] Hort. kew.
[c] Mill. fig.
[d] Dill. elth.
[e] Hort. malab.
[f] Breynius.
[g] Swartz.
[h] L'Heritier.
[i] Hort. kew.
[k] Linn. hort. cliff.
[l] Linn. ſuppl.
[m] Vahl.

5. The plants of this ſort will live two or three years in a ſtove; and the ſeeds will ſometimes ripen in England.

Gomphrena. See *Illecebrum.*

[GONATOCARPUS. (*From* γονυ, γόνατος *the knee, and* καρπος *fruit.*)

Lin. gen. Schreb. n. 214. Gonocarpus. *Thunb. nov. gen.* 55. *fl. jap.* 5. *Juſſ.* 442.

Claſſ. 4. 1. Tetrandria Monogynia.

GENERIC CHARACTER.

Cal. none.

Cor. four-cleft, permanent.

Stam. *Filaments* four, inſerted into the corolla.

Pist. *Germ* inferior. *Style* ſingle.

Per. *Drupe* ſubglobular, eight-cornered, crowned with the permanent corolla, one-celled.

Seed ſingle.

ESSENTIAL CHARACTER.

Cor. four-cleft. *Drupe* eight-cornered, one-ſeeded.

SPECIES.

1. Gonatocarpus micranthus.
Lin. ſyſt. 164. *Thunb. diſſ.* 3. 55. *fl. jap.* 69. *t.* 15.

DESCRIPTION, &c.

Root fibrous, annual. Stem one or more, four-cornered, decumbent at the baſe, branched at top, ſcarcely a ſpan in heighth. Leaves oppoſite, on very ſhort petioles, ovate, acute, ſerrate, ſmooth, ſpreading, a line in length. Flowers on the branches in ſpikes, remote, moſtly on one ſide, drooping, minute. Found by Thunberg abundantly about Nagaſaki, flowering in auguſt[a].

GOODENIA. (*So named by Dr. Smith, preſident of the Linnean Society, from the Rev. and learned Samuel Goodenough, L.L.D. F.R.S. Treaſurer of the Linnean Society, author of obſervations on the Britiſh ſpecies of Carex, &c.*)

Lin. tranſ. 2. 346. *Smith bot. nov. holl.* 15. *t.* 5.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Campanulaceæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* five-leaved: *leaflets* equal, awl-ſhaped, erect, permanent.

Cor. one-petalled, ſuperior: *tube* cloven on the upper ſide from top to bottom: *limb* five-cleft; ſegments equal, obovate, directed forwards.

Stam. *Filaments* five, ſhorter than the tube, and projecting through its fiſſure. *Anthers* linear, vertical, two-celled.

Pist. *Germ* inferior, five-angled. *Style* ſimple, longer than the ſtamens, and ſtanding out with them. *Stigma* cup-ſhaped, ciliated.

Per. *Capſule* two-celled, two-valved; burſting at top, and becoming revolute; the partition, which is parallel to them, remaining erect.

Seeds ſeveral in each cell, imbricated, lenticular.

ESSENTIAL CHARACTER.

Cor. longitudinally cloven on the upper ſide, expoſing the organs of fructification; border five-cleft, leaning one way. *Anthers* linear. *Stigma* cup-ſhaped, ciliated. *Capſ.* two-celled, two-valved, with a parallel partition. *Seeds* many, imbricated.

SPECIES.

1. Goodenia ovata. *Ovate yellow Goodenia.*
Smith in Linn. tranſ. 2. 347.
Leaves ovate, toothletted-ſerrate, both they and the corollas ſmooth, fruit linear.

2. Goodenia albida. *White-flowered Goodenia.*
Smith in Linn. tranſ. 2. 348.
Leaves obovate, toothed, both they and the corollas ſmooth, ſtyle and ſtem hairy.

3. Goodenia paniculata. *Panicled yellow Goodenia.*
Smith in Linn. tranſ. 2. 348.
Leaves obovate-lanceolate, toothed, both they and the corollas hairy, ſtem almoſt naked, panicled.

4. Goodenia bellidifolia. *Daiſy-leaved yellow Goodenia.*
Smith in Linn. tranſ. 2. 349.
Leaves obovate, toothletted, fleſhy, ſtem almoſt naked, ſpiked, corolla hirſute on the outſide, fruit four-valved.

5. Goodenia ſtricta. *Rigid blue Goodenia.*
Smith in Linn. tranſ. 2. 349.
Leaves lanceolate, entire or toothed, fleſhy, ſmooth, corolla hirſute on the outſide, ſtigma contracted at the mouth.

6. Goodenia ramoſiſſima. *Branching blue Goodenia.*
Smith in Linn. tranſ. 2. 349. *bot. nov. holl.* 15. *t.* 5.
Leaves linear-lanceolate, ſomewhat toothed, both they and the ſtem hiſpid, ſtyle very hirſute at top, corolla hairy on the outſide.

7. Goodenia heterophylla. *Various-leaved Goodenia.*
Smith in Linn. tranſ. 2. 349.
Leaves entire, toothed or lobed, hairy, fruit roundiſh, corolla almoſt naked.

8. Goodenia hederacea. *Trailing Goodenia.*
Smith in Linn. tranſ. 2. 349.
Leaves roundiſh, entire or five-lobed, corolla woolly on the outſide, ſtem proſtrate.

9. Goodenia lævigata.
Curt. magaz. 287.
Leaves ovate-lanceolate, toothed, ſmooth.

DESCRIPTIONS, &c.

This genus ſhould be inſerted between *Scævola* and *Cinchona* in the Linnean ſyſtem, and between *Cyphia* and *Scævola* in that of Monſ. de Juſſieu. It differs eſſentially from *Scævola* in its fruit; from *Cyphia* in its corolla, and from *Lobelia* in its ſtamens.

Dr. Smith has given this new and moſt diſtinct genus the name of *Goodenia*, in honour of his worthy friend the Rev. Dr. Goodenough. In the conſtruction of this name he has followed the example of Tournefort, in forming *Gundelia* from Gundelſcheimer. Dr. Goodenough's name might however have been ſoftened into *Goodenovia*, without being either too long, or offending a delicate ear.

Theſe plants are all natives of New South Wales, about Port Jackſon.

1. Stem ſhrubby, erect, angular, branched, leafy. Leaves alternate, varying a little in breadth, acute, ſerrated with fine ſharp ſpreading unequal teeth, of a bright green, veiny, ſmooth on both ſides, paler beneath: footſtalks channelled above, with a tuft of down in their axils. Stipules none. Flowers yellow, from three to five in a dichotomous panicle, ariſing ſolitary from each axil of the uppermoſt leaves, and above half as long as the correſponding leaf: peduncles ſomewhat angular, ſmooth, with two awl-ſhaped bractes at each ſubdiviſion. Calycine leaflets ſmooth. Corolla tubular: tube ſmooth, greeniſh and ſtriated externally; limb yellow, membranous, with a thick greeniſh plait running from the tube to the point of each ſegment behind. Filaments inſerted into the receptacle, equal, perfectly diſtinct. Germ long, ſlender, ſmooth: ſtyle ſmooth: ſtigma large, bent down towards the ſtamens, finely ciliated. Capſule oblong, crowned with the calyx. Seeds roughiſh, encircled with a groove.

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[a] Thunb. jap. & gen.

This plant is in the garden of the Duke of Northumberland at Sion, and was preſented in flower on the 4th of december, 1792, to the Linnean Society by Mr. Thomas Hoy, one of the fellows.

2. Gathered by John White, Eſq. Surgeon at Port Jackſon.

3. Gathered at the ſame place by Mr. David Burton.

4. Found at the ſame place by John White, Eſq.

5. This grows naturally in marſhy ground at Port Jackſon, flowering there in october, and was found by the ſame gentleman[a].

6. Stem herbaceous, two or three feet high, much branched and ſtraggling, round, rough with ſhort ſtiff hairs, as are alſo the leaves. The latter are of a narrow lanceolate form, moſtly entire, but ſometimes toothed, and even ſinuated. Stipules none. Flowers ſolitary, terminating the branches, and appearing in october. The plaits of the corolla are externally hairy. The anthers are very minutely bearded. The ſtyle is very hairy in its upper part. The germ is oval and hairy[b]. Found by John White, Eſq. at Port Jackſon.

7, 8. Natives of the ſame place, and found by the ſame gentleman. We do not yet know the colour of their flowers[c].

9. Stems round, ſmooth, green below, purpliſh above. Leaves alternate, on footſtalks gradually widening into them, ſomewhat ovate, deeply toothed, of a full bright green. Flowers axillary, forming a thin ſpike, ſeſſile, pale violet, having a peculiar, rather unpleaſant ſmell; at the ſide of each flower two long narrow bractes. Calycine leaflets ſhort, ovate, appearing edged with hairs when magnified. The lower part of the corolla, which at firſt is tubular, ſplits longitudinally above, and forms a kind of half tube, the edges of which are brown, the inſide yellow, the outſide greeniſh, the mouth beſet with ſhort hairs, each of which is terminated by a ſmall villoſe head: the ſegments of the limb or border are linear, ſpread out like a hand, and are terminated by ſhort points. Filaments whitiſh, ſomewhat broader above, rather flat, inſerted into the receptacle. Anthers oval, flattened, yellow, a little bent, and the length of the piſtil when the flowers are not yet fully expanded; afterwards they are much ſhorter than the piſtil, and appear withered. The ſtyle, in flowers about to open, is about the length of the filaments, and upright; afterwards it is much longer, and bent ſomewhat downward. Stigma at firſt upright, in form of a cup, having the edge curiouſly fringed with white hairs; afterwards it cloſes together, loſes its hollow, aſſumes a flat appearance, and nods a little; the back part of it is bearded. Germ oblong, uſually abortive with us.

Raiſed by Mr. Curtis in the ſummer of 1793 from ſeeds brought over in ſpecimens of earths from Botany-Bay by Captain Tench to Samuel Tolfrey, Eſq. It flowers from july to october[d].

PROPAGATION AND CULTURE.

Theſe plants muſt be raiſed from ſeeds brought from their native country. When once obtained, they may readily be increaſed from cuttings. They are not very tender, but may be preſerved in the dry ſtove, or a good glaſs caſe.

Good Henry. See *Chenopodium.*

Gooseberry. See *Ribes.*

Goose-foot. See *Chenopodium.*

Goose-grass. See *Galium Aparine.*

——————— **Great.** See *Aſperugo.*

Goose-tongue. See *Achillea.*

GORDONIA. (*So named from Mr. James Gordon, an eminent Nurſery-man at Mile-end near London: no leſs famous for introducing many rare plants than ſucceſsful in cultivating them.*)

Lin. gen. Reich. n. 913. *Schreb. n.* 1144. *Ellis in phil. tranſ.* 1770. *t.* 11. *Cavanill. diſſ.* 307. *Walter carolin.* 177. *Juſſ.* 275. Franklinia. *Marſh. arb.* 48.

Claſſ. 16. 6. Monadelphia Polyandria. (Polyandria, Monogynia.)

Nat. order of *Columniferæ.—Malvaceæ,* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* (double: *outer* four-leaved, deciduous; *Cavan.*) *inner* five-leaved: *leaflets* roundiſh, concave (ciliate W.) permanent.

Cor. *Petals* five, obovate, concave, large, united at the baſe (one of them ciliate. W.)

Stam. *Filaments* numerous, filiform, coaleſcing at the baſe into an obtuſe body (campanulate, with a five-cleft border. W.) *Anthers* oval, upright.

Pist. *Germ* ovate. *Style* ſhort, five-cornered (cylindric. W.). *Stigmas* five, ſharp, horizontal. (Stigma five-cornered. W.)

Per. *Capſule* ovate, ſharp, five-celled: *cells* bifid half way, five-valved.

Seeds two, with a leafy wing on one ſide.—(Seeds in two rows in each cell. *L'Herit.*)

ESSENTIAL CHARACTER.

Cal. five-leaved. *Pet.* five, united at the baſe by means of the nectary. *Filam.* inſerted into the nectary. *Capſ.* ſuperior, five-celled. *Seeds* winged.

SPECIES.

1. Gordonia Laſianthus. *Smooth Loblolly Bay.*
Lin. ſyſt. 631. *Reich.* 3. 368. *mant.* 570. *Ellis in Philoſ. tranſact.* 1770. *vol.* 60. *p.* 518. *t.* 11. *L'Herit. ſt. nov.* 156. *Swartz obſ.* 271.
Hypericum Laſianthus. *Lin. ſpec.* 1101. *hort. cliff.* 380.
Hibiſcus 24. *Mill. dict. edit.* 7.
Alcea floridana, &c. *Pluk. amalth. t.* 352. *f.* 3. *Cateſb. car.* 1. *t.* 44. *Amman. act.* 7. *t.* 352. *f.* 3.
Leaves leathery, ſmooth on both ſides, flowers peduncled.

2. Gordonia pubeſcens. *Pubeſcent Loblolly Bay.*
Lamarck encycl. 2. 770. *Cavan. diſſ.* 6. 308. *t.* 162. *Ait. hort. kew.* 2. 231.
Leaves pubeſcent beneath, flowers ſubſeſſile.

3. Gordonia Franklini.
L'Herit. ſt. nov. 156.
Franklinia Alatamaha. *Marſh. arbuſt.* 49. *Bartr. trav.* 16 & 467.
Leaves ſmooth, flowers ſeſſile, fruits globular.

DESCRIPTIONS, &c.

Shrubs, with flowers ſolitary from the axils. In habit they differ ſomewhat from the Malvaceous tribe, and they have no ſtipules, but the corcle or heart of the ſeed is furniſhed with corrugated lobes[e]. The filaments not being united at bottom, but only inſerted into the nectary, theſe ſhrubs do not properly belong to the claſs Monadelphia, but to that of Polyandria.

1. Cateſby deſcribes the Loblolly Bay as a tall and very ſtraight tree, with a regular pyramidal head, and adds that the leaves are ſhaped like thoſe of the common Bay, but are ſerrated. Swartz ſays it is a low tree, with a white, ſoft, brittle wood; the leaves ovate-lanceolate, flat, ſomewhat leathery, of a duſky green colour. According to Mr. Miller, the ſtem is five or ſix feet high, and branched; the leaves four inches long, and one inch and a half broad in the middle, ſlightly indented on their edges, and of a thick conſiſtence; the flowers axillary, on very long peduncles; the petals are yellow and thick; the ſtamens are joined at their baſe to the ſtyle, and form a ſhort column, but ſpread open at top, filling the mouth of the tube[f].

Calyx tomentoſe, villoſe at the edge. Stamens ſcarcely longer than the calyx[g].

Native of North America. Introduced about 1768, by Benjamin Bewick, Eſq. It flowers in auguſt and ſeptember[h].

Dr. Dale ſent ſeeds of it to Mr. Miller from South Carolina, and he raiſed plants from them.

2. Branches ſubpubeſcent. Leaves as in the foregoing, but with the lower ſurface very ſoftly tomentoſe. Flowers axillary, ſolitary, ſeſſile towards

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[a] Smith in Linn. tranſ.

[b] Smith in bot. New Holl.

[c] Smith in Linn. tranſ.

[d] Curtis.

[e] Juſſieu.

[f] Dict. edit. 7.

[g] Linn. ſpec.

[h] Hort. kew.

the tops of the branches. Leaflets of the outer calyx ſubovate, acuminate at the tip, tomentoſe, as are alſo thoſe of the inner[i].

Native of South Carolina. Introduced in 1774, by Mr. William Malcolm. It flowers in ſeptember[k].

It has been long in the open air in the garden at Trianon in France; but, like the reſt of the trees and ſhrubs from South Carolina, not very patient of cold. The flowers are white, but they come out ſo late, that the froſt deſtroys them before they expand[l].

3. This beautiful tree-like ſhrub riſes with an erect trunk to the height of about twenty feet, with alternate branches. Leaves oblong, narrowed towards the baſe, ſerrate, alternate, ſeſſile or ſubſeſſile. Flowers towards the extremity of the branches, ſolitary, ſitting cloſe in the boſom of the leaves, often five inches in diameter when fully expanded; petals ſnow-white, the lower one hollow, formed like a cap or helmet, entirely including the other four, until the moment of expanſion; its exterior ſurface is covered with a ſhort ſilky hair; the borders of the petals are curled or plaited. Fruit a large, round, dry, woody pericarp, opening at each end oppoſitely by five alternate fiſſures, containing ten cells, each filled with dry woody cuneiform ſeeds[m]. Capſules umbilicate; with the partitions in the middle of the valves. Seeds very many, lying over each other in two rows, in each cell, obſcurely cornered, ſomewhat like thoſe of the Cypreſs, ſlightly edged at the corners.

Native of South Carolina and Georgia. Not having yet flowered in Europe, it is doubtful whether this ſpecies belongs to the genus Gordonia or Stuartia. As far as can be judged from ſpecimens, it rather appertains to the latter. It has the habit and calyx of the former, but the inſertion of the ſtamens, and manner of flowering, are the ſame as in Stuartia; the capſule alſo agrees rather with the latter, but the ſeeds are in two rows, edged however at the corners, not winged as in Gordonia[n].

The flowers have the fragrance of a China Orange. It was firſt obſerved by Mr. John Bartram on the Alatamaha river in Georgia, in the year 1760; and was brought into Pennſylvania fifteen years after, by his ſon William Bartram[o].]

PROPAGATION AND CULTURE.

The Loblolly Bay growing naturally in water, is not kept alive in this country without difficulty. Mr. Miller raiſed ſeveral plants, which continued till winter, but not one of them ſurvived, though he placed ſome of them in the ſtove, and ſupplied them well with water.

GORTERIA. (*So named in honour of David de Gorter, author of* Flora Zutphanica & Ingrica.)

Lin. gen. n. 982. *Reich.* 1064. *Schreb.* 1328. *Juſſ.* 182. *Gærtn. t.* 171.

Claſſ. 19. 3. Syngeneſia Polygamia Fruſtranea.

Nat. order of *Compoſitæ Capitatæ.—Corymbiferæ,* Juſſ.

GENERIC CHARACTER.

Cal. *Common* one-leafed, imbricate with ſpiny ſcales, the inner ones gradually longer, ſtraight, briſtle-ſhaped, rigid.

Cor. *Compound* radiate. *Corollets* hermaphrodite, ſeveral in the diſk—female fewer in the ray.—*Proper* of the hermaphrodite funnel-form, five-cleft—of the female ligulate, lanceolate.

Stam. in the hermaphrodites, *filaments* five, ſhort. *Anther* cylindric, tubular.

Pist. of the hermaphrodites, *germ* villoſe; *ſtyle* filiform, the length of the corollet; *ſtigma* bifid.—of the females, *germ* obſolete; *ſtyle* none; *ſtigma* none.

Per. *Calyx* unchanged, deciduous.

Seeds in the hermaphrodites, ſolitary, roundiſh; *down* ſimple (woolly, *ſyſt.*)—in the females, none.

Rec. naked. (Not ſo in all the ſpecies: ſee n. 1, 3.)

ESSENTIAL CHARACTER.

Cal. imbricate, with ſpiny ſcales. *Cor.* of the ray ligulate. *Down* woolly. *Recept.* naked.

SPECIES.

[1. Gorteria perſonata. *Annual Gorteria.*
Lin. ſpec. 1283. *Reich.* 3. 893. *Berg. cap.* 300. *Pluk. phyt. t.* 273. *f.* 6. (Carduus.) *Barrel. ic. t.* 160. (Jacea.) *Gærtn. fruct.* 2. 427.
Leaves lanceolate, entire and ſinuate, ſtem upright, flowers peduncled.]

2. Gorteria rigens. *Great-flowered Gorteria.*
Lin. ſpec. 1284. *Reich.* 3. 894. *amoen.* 6. 105. *Berg. cap.* 304. *Curtis magaz. t.* 90. *Mill. fig. t.* 49. (Arctotis.) *Vaill. act. par.* 1728. *n.* 9. (Arctotheca.) *Raii ſuppl.* 182. *n.* 3. (Anemonoſpermos.)
Leaves lanceolate, pinnatifid, ſtem depreſſed, ſcapes one-flowered.

[3. Gorteria echinata. *Prickly Gorteria.*
Ait. hort. kew. 3. 254.
Leaves oblong, ſinuate-gaſhed, with ſmall thorns, ſtems aſcending, receptacles chaffy.

4. Gorteria ſquarroſa. *Cobweb Gorteria.*
Lin. ſpec. 1284. *ſyſt.* 783. *Reich.* 894. *mant.* 470. *amoen.* 6. 105. *Berg. cap.* 301. *Comm. hort.* 2. 55. *t.* 28. (Aſter).—*Lin. ſpec. edit.* 1. 859. (Xeranthemum.)
Leaves lanceolate, decurrent, adnate, ciliate-ſpinulous, flowers ſeſſile.

5. Gorteria ſetoſa. *Briſtly Gorteria.*
Lin. ſyſt. 783. *mant.* 287. *Reich.* 894. *Lour. cochinch.* 507.
Leaves lanceolate, decurrent, adnate, ciliate-ſpinous, flowers terminating.

6. Gorteria ciliaris. *Ciliate Gorteria.*
Lin. ſpec. 1284. *Reich.* 895. *Burm. afr.* 151. *t.* 54. *f.* 1. (Carlina.) *Raii ſuppl.* 196. 4. (Carduus). *Pluk. amalth. t.* 354. *f.* 3. *Seba muſ.* 1. *t.* 23. *f.* 1. (Aculeoſa).
Leaves imbricate, ciliate, in two rows; the outer cilias and the terminating ſpine reflex.]

7. Gorteria fruticoſa. *Shrubby Gorteria.*
Lin. ſpec. 1284. *Ait. hort. kew.* 3. 255.
G. Aſteroides. *Lin. ſyſt.* 783. *ſuppl.* 381.
Leaves lanceolate, entire, tooth-ſpinous, tomentoſe beneath, ſtem ſhrubby.

[8. Gorteria herbacea. *Herbaceous Gorteria.*
Lin. ſyſt. 784. *ſuppl.* 381.
Rohria Cynaroites. *Vahl in act. Hafn.* 1. 2. *p.* 16. *t.* 8.
Stem-leaves claſping, ciliate, root-leaves unarmed, villoſe underneath.

9. Gorteria hiſpida. *Hairy Gorteria.*
Lin. ſyſt. 784. *ſuppl.* 381.
Leaves oblong, ciliate-ſpinous, upright, ſmooth, calyxes entire, ending in a thorn.

10. Gorteria ſpinoſa. *Thorny Gorteria.*
Lin. ſyſt. 784. *ſuppl.* 381.
Rohria obovata. *Vahl in act. Hafn.* 3. 1. *p.* 106.
Leaves oblong, ſeſſile, tooth-ſpinous, ſpreading, ſmooth, calyxes ciliate-ſpinous, flowers upright.

11. Gorteria cernua. *Drooping Gorteria.*
Lin. ſyſt. 784. *ſuppl.* 382.
Leaves oblong, claſping, tooth-ſpinous, ſpreading, ſmooth, calyxes ciliate-ſerrate, flowers drooping.

12. Gorteria uniflora. *One-flowered Gorteria.*
Lin. ſyſt. 784. *ſuppl.* 382.
Leaves lanceolate, undivided, tomentoſe underneath, ſtems one-flowered, depreſſed.

13. Gorteria barbata. *Bearded Gorteria.*
Lin. ſyſt. 784. *ſuppl.* 382.
G. fruticoſa. *Berg. cap.* 302.
Leaves elliptic-lanceolate, tooth-awned, calyxes peduncled, ciliate-ſetaceous.

DESCRIPTIONS, &c.

Theſe are moſtly ſhrubby plants from the Cape of Good Hope. The firſt and third are herbaceous and annual.—The flowers are terminating. Juſſieu thinks it probable that on farther examination it will be found that ſeveral ſpecies are placed in this genus that do not belong to it. He doubts whether *G. rigens* is not more nearly related to the genus *Arnica.* —

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[i] Cavanilles.
[k] Hort. kew.
[l] L'Heritier.
[m] Marſhall & Bartram.
[n] L'Heritier.
[o] Marſhall.

—Gærtner alſo is of opinion, that the Linnean genus comprehends ſeveral plants that are foreign to it.

1. Stems a ſpan high, little branched, roundiſh, hairy. Leaves alternate, narrow-lanceolate, ſeſſile, hiſpid, white-tomentoſe underneath; the larger ones uſually cut with two deep gaſhes on each ſide. Calyxes terminating, ovate; ſcales mucronate, the points ſtraight, ſtiff, but hardly to be called prickly. Ray yellow, at the baſe and underneath blue[a].—Receptacle briſtly, rough in the middle, excavated in the circumference. Florets in the centre male; in the diſk androgynous, and of theſe not more than five fertile; in the ray female or neuter, and barren. Seeds woolly, but without down or feather.—When the flower comes to maturity, the aperture of the calyx being very narrow, the ſeeds do not fall out, but the whole drops together. Hence, when one of them germinates, the radicle not only perforates the bottom of the calyx, but is ſo firmly united to it, that the young plant bears the maternal calyx permanent above the root. There is no other inſtance of this economy, except in Neurada[b].

Introduced 1774, by Mr. Francis Maſſon. It flowers in july and auguſt[c].]

2. This is a low-ſpreading plant, with woody ſtalks ſix or eight inches long, trailing on the ground, having two or three ſide branches, each terminating in a cloſe head of leaves, which are narrow, green on their upper, but ſilvery on their under ſurface, and cut into three or five ſegments at the end. The peduncles ariſe from theſe heads, are ſix inches long, naked, and ſupport one large orange-coloured flower: each floret in the ray has a dark mark towards the baſe, with white intermixed. It flowers in may and june.

[The green-houſe can ſcarcely boaſt a more ſhewy plant. The flowers, when expanded by the heat of the ſun, and it is only when the ſun ſhines on them that they are fully expanded, exhibit an unrivalled brilliancy of appearance[d]. Mr. Miller cultivated it in 1755[e]. He received it from Adrian van Royen, profeſſor of Botany at Leyden, and diſtributed it to many curious perſons in England[f].

3. Stems a foot high, angular, red, commonly ſmooth, but ſometimes lanuginous here and there. Leaves ſcattered, ſeſſile, claſping, ſubdecurrent, ſmooth, but here and there lanuginous. Flowers terminating, ſolitary: outer ſcales of the calyx, ſhort, palmate-ſpinous; inner longer, lanceolate, ending in a thorn, and armed with ſpinules at the baſe on each ſide. Corollets of the ray wholly barren, the petal four-cleft at the end, an inch long, ſpreading, yellow, but near the tip underneath of a dirty purple colour. Corollets of the diſk yellow. Seeds obovate. Receptacle chaffy; chaffs long, ſlightly connate, net-wiſe. Native of the Cape of Good Hope. Mr. Fr. Maſſon. Introduced 1774. It flowers in july[g].

4. Stem proliferous, villoſe. Branches from the baſe of the ſtalk. Leaves as it were glued together at the baſe, bowed back, imbricate downwards, ending in a thorn, ciliated with three or four ſpinules on each ſide. Calyx terminating, ſquarroſe, with leaflets bowed back, like thoſe on the ſtem. Ray of the flowers yellow[h].

Introduced in 1786, by Baron Hake. It flowers from june to auguſt[i].

5. Stem five feet high, upright, very much branched. Branches alternate. Leaves glued together at the baſe, bowed back, diſtant, with three briſtle-ſhaped ſpines on each ſide, and one at the end. Flowers yellow, the ray violet-coloured underneath.—It differs from the foregoing, in the ſtem being neither villoſe nor proliferous; the leaves not imbricate downwards, but broader, ſhorter, with yellow briſtles ſtanding out on the edge; the flowers peduncled, not ſeſſile, and finally in the colour of the ray beneath[k].—Native of the Cape and of China.

6. The leaves are imbricate, and preſſed to the ſtalks, ſo as to cover them in an extraordinary manner[l].

Introduced in 1774, by Maſſon. It flowers in may and june[m].]

7. Stem ſlender, three feet high, ſending out a few weak branches, [which are tomentoſe and white. Leaves like thoſe of Privet, alternate, ſharp, petioled, having ſix or ſeven ſerratures briſtly at the end. Flowers terminating, ſubſolitary, peduncled, the peduncle longer than the flower. Calyx many-leaved, in two rows; the inner a little ſmaller: leaflets lanceolate, having a thorn at the end, not ſerrate; ciliate, with five or ſix ſtiffiſh briſtles on each ſide, much ſhorter than the leaflet. Corolla yellow, radiate: the ray has many flowers, and is twice the length of the calyx; the diſk is convex, the ſegments of the florets linear. Seeds villoſe. Crown of the ſeeds ſtar-form, with many leaflets[n]. —Cultivated in 1739, by Mr. Miller. It flowers in auguſt and ſeptember.—This is entirely different from the *G. fruticoſa* of Bergius (cap. 302.), which is Atractylis oppoſitifolia. *Lin. ſyſt.*[o]

8. Stem ſcarcely a foot high, herbaceous, ſmooth, very little branched. Root-leaves broad-lanceolate, petioled, quite entire, bluntiſh: ſtem-leaves alternate, cordate, acute, the upper ones gradually ſhorter. Flowers terminating, ſeſſile. Calyx like that of an Artichoke, but ſcarcely bigger than a plum, imbricate, ſmooth at the edge, thorny at the end, ſtraight.

9. Shrubby and large.

10. Both thoſe were found at the Cape by Thunberg.

11. The baſe of the calyx is ſingular, with ripe ſeeds, and reſembles the fruit of Medicago[p].—Introduced 1785, by Baron Hake. It flowers in may[q].

12. Stems a ſpan high, ſimple, herbaceous, leafy on all ſides. Leaves alternate, ſeſſile. Peduncle terminating, longer than the leaves. Ray of the flower yellow. It has the appearance of *G. rigens*, and may perhaps be a variety of it.

13. Stems diffuſed, ſimple, white-tomentoſe. Leaves oppoſite or alternate, ſeſſile, acute, ſmooth, marked with lines, awned at the end on both ſides with four or five lateral teeth, white-tomentoſe underneath. Peduncle terminating, very long, leafleſs, putting off a white nap, one-flowered. The outer order of leaflets in the calyx is of the ſame form with the leaves; the inner is coloured, more copious, narrower, and ends in abundance of briſtles that are twice as long as the flower[r].]

PROPAGATION AND CULTURE.

Moſt of theſe plants may be increaſed by cuttings, planted in a ſhady border, during any of the ſummer months; afterwards they may be treated like other plants from the Cape. For this ſee *Arctotis*. [The two annual ſorts muſt be propagated by ſeeds.]

7. The ſeventh ſort is increaſed by planting the ſmall heads at the end of the branches, in june and july: theſe muſt be cloſely covered with either bell or hand-glaſſes, and carefully ſcreened from the ſun. When they are well rooted, they ſhould be put each into a ſmall pot, and in winter placed in an airy glaſs caſe ſecure from damp.—[This may ſerve as a direction for any other ſorts, and indeed for moſt ſhrubby plants, that will not take from cuttings in the ordinary way.

Gorteria. See *Atractylis* and *Robria*.

Gorz. See *Ulex*.]

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[a] Linn. ſpec.
[b] Gærtner.
[c] Hort. kew.
[d] Curtis.
[e] Hort. kew.
[f] Mill. fig.
[g] Hort. kew.
[h] Linn. mant. & ſyſt.
[i] Hort. kew.
[k] Linn. mant. & ſyſt.
[l] Linn. ſpec.
[m] Hort. kew.
[n] Linn. ſuppl.
[o] Hort. kew.
[p] Linn. ſuppl.
[q] Hort. kew.
[r] Linn. ſuppl.

GOSSYPIUM. (*Voſſius is of opinion that this is an Egyptian word; it is called ξυλον in Greek. See Pliny, l. 19. c. 1.*)

Engl. *Cotton.* Fr. *Coton.*

Lin. gen. n. 845. *Reich.* 910. *Schreb.* 1138. *Cavanill. diſſ.* 6. 309. *Juſſ.* 274. *Gærtn. t.* 134. Xylon. *Tournef.* 27.

Claſſ. 16. 6. Monadelphia Polyandria.

Nat. order of *Columniferæ. Malvaceæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* double: *outer* one-leafed, trifid, flat, larger; *inner* one-leafed, bluntly emarginate in five rows, cup-form.

COR. *Petals* five, obcordate, flat, ſpreading, faſtened by their baſe to the tube of the ſtamens.

STAM. *Filaments* numerous, uniting at bottom into a tube, ſeparate at and below the tip, lax, inſerted into the corolla. *Anthers* kidney-form.

PIST. *Germ* roundiſh. *Style* columnar, the length of the ſtamens. *Stigmas* three or four, thickiſh.

PER. *Capſule* roundiſh, acuminate, three or four-celled: *partitions* contrary.

SEEDS very many, oval, involved in cotton.

ESSENTIAL CHARACTER.

Cal. double; outer trifid. *Capſ.* four-celled. *Seeds* wrapped in cotton.

SPECIES.

1. Goſſypium herbaceum. *Common Cotton.*

Lin. ſpec. 975. *Reich.* 3. 355. *hort. upſ.* 203. *mat. med.* 167. *Murr. prodr.* 170. *Blackw. t.* 354. *Lour. cochinch.* 415. *Thunb. jap.* 271.

G. fruteſcens, ſemine albo. *Bauh. pin.* 430.

Goſſypium. *Camer. epit.* 203. *Rumph. amb.* 4. 33. *t.* 12.—ſ. Xylon. *Ger.* 753. *emac.* 901.—fruteſcens annuum. *Park. theat.* 1553. *n.* 2. *t.* 1552. *f.* 2.

Xylon ſ. G. herbaceum. *Bauh. hiſt.* 1. 343. *Raii hiſt.* 1064.

Leaves five-lobed without glands underneath, ſtem herbaceous.

2. Goſſypium arboreum. *Tree Cotton.*

Lin. ſpec. 975. *ſyſt.* 628. *Reich.* 3. 356. *hort. cliff.* 350. *Gron. orient.* 208. *Forſk. ægypt.* 125. *Lour. cochinch.* 416.

G. arboreum caule lævi. *Bauh. pin.* 430.

Cudupariti. *Rheed. mal.* 1. 55. *t.* 31. *Raii hiſt.* 1065. 4.

Leaves palmate, with lanceolate lobes; ſtem ſhrubby.

3. Goſſypium hirſutum.

Lin. ſpec. 975. *ſyſt.* 628. *Reich.* 3. 356. *Swartz obſ.* 265. *Brown. jam.* 282. 1. *Sabb. hort.* 1. *t.* 57. *Pluk. alm. t.* 299. *f.* 1.

Leaves five-lobed with one gland underneath, the twigs and petioles pubeſcent.

[4. Goſſypium religioſum. *Spotted-bark Cotton Tree.*

Lin. ſyſt. 628. *Reich.* 3. 356. *Pluk. alm. t.* 188. *f.* 2? *Gærtn. fruct.* 2. 246. *Swartz obſ.* 267.

G. arboreum. *Merian ſurin. t.* 10.

Leaves three-lobed acute with one gland underneath, twigs ſpotted with black.

5. Goſſypium latifolium.

Lin. ſyſt. 628. *Murr. comm. gott.* 1776. *p.* 22. *t.* 1.

Leaves acute, the loweſt undivided, the reſt three-lobed with one gland underneath.]

6. Goſſypium barbadenſe. *Barbadoes Cotton Tree.*

Lin. ſpec. 975. *Reich.* 3. 357. *hort. upſ.* 204. *Swartz obſ.* 266. *Pluk. alm. t.* 188. *f.* 1.

Leaves three-lobed quite entire with three glands underneath.

DESCRIPTIONS, &c.

[1. *Root* tapering, woody with numerous fibres, annual. *Seed-lobes* two, kidney-form, terminating gradually in a long petiole with the figure of a halved funnel. *Stem* three feet high, upright, round, pubeſcent, as is the whole of the herb, at bottom brown with ſlight chinks, at top ſpotted with black: *branches* axillary, ſcarcely longer than the leaf at their origin. *Leaves* alternate, only half the length of the petiole, tomentoſe, odorous whilſt young. *Petioles* round, tomentoſe, bent in towards the inſertion of the leaf, at the baſe gibbous and thicker, ſpreading. *Stipules* two, lanceolate, at the baſe of the petioles and peduncles. *Peduncles* ſhorter than the petioles, branched. *Calyx* outer, when cloſed, three-cornered; when open, three-parted almoſt to the baſe; ſegments heart-ſhaped, gaſhed, ſhorter by half than the corolla, dotted with black: inner cylindrical, only one-third of the others length, upright, five-parted, with ſhort blunt ſegments, dotted like the inner. *Corolla* monopetalous, with a very ſhort tube, and a five-parted, ſpreading border, the ſegments blunt, crenate at the ſide, pale yellow with five red ſpots at bottom, and deciduous. *Filaments* coaleſcing into a pyramid. *Germ* ſuperior ovate: *ſtyle* filiform: *ſtigma* fourfold. *Capſule* bluntly three-cornered, three-valved, three-celled. *Seeds* ovate, about three in each cell, convex on one ſide, more flat on the other, immerſed in fine cotton[a].]

This is the common Levant Cotton, which is cultivated alſo in ſeveral iſlands of the Archipelago; and in Malta, Sicily, and the kingdom of Naples, as well as in moſt parts of Aſia.

[It is a native of the Eaſt Indies: and was cultivated here by Gerarde, as a garden plant, in 1594[b]. "It groweth (ſays he) about Tripolis and Alepo in Syria, from whence the factor of a worſhipfull merchant in London, Maſter Nicholas Lete, did ſend unto his ſaid maſter divers pounds weight of the ſeed, whereof ſome were committed to the earth at the impreſſion hereof (1597): the ſucceſs we leave to the Lord. Notwithſtanding myſelf three years paſt did ſow of the ſeeds, which did grow very frankly, but periſhed before it came to perfection, by reaſon of the cold froſts that overtook it in the time of flowering."

Few plants are more uſeful, ſince it furniſhes materials for clothing in the four quarters of the world, particularly to the Aſiatics. The ſeeds alſo are an article of food, and eſteemed wholeſome.

2. Stem eight feet high, the thickneſs of the human leg, with a rugged brown bark, and long, diffuſed, twiſted branches. Leaves three or five-lobed, without glands, ſmooth, ſcattered, petioled; the lobes ſhort. Flowers entirely yellow, terminating, ſolitary. Outer calyx three-leaved, large, gaſhed, erect: the inner calyx five-notched. Capſule commonly three-cornered, three-valved, three-celled, ſubovate, acuminate, rugged[c].—Between the ſinuſes of the leaves there is frequently a ſmall ſegment; hence all the ſinuſes are obtuſe[d].

Native of the Eaſt Indies, and the eaſtern coaſt of Africa. Cultivated in 1731, by Mr. Miller[e].

3. Stem ſhrubby, a fathom in height, erect, ſtriated. Branches hirſute. Leaves alternate; the upper ones undivided, cordate, acute, entire, rough with hairs about the edge; the lower three-lobed, the lobes little divided, ovate, acute, entire, hirſute beneath, ſmooth above. Petioles round, ſtriated, dotted with black, hirſute. There is a ſingle glandular pore on the midrib underneath, and ſometimes two or three on the next nerves. Peduncles three times ſhorter than the petioles, thick, ſtiff, hirſute, dotted with black. Outer calyx three or five-cleft, the ſegments ovate, acute, rough with hairs; the inner truncate, with three blunt teeth. Petals rounded, retuſe, entire, yellow at the baſe, purple at the tip, pubeſcent on the outſide. Germ ovate, acuminate, dotted with black: ſtyle longer than the ſtamens, three or five-cleft at top, inclined. Capſule large, ovate, dotted with black, three-celled, three-valved. Seeds ovate, acute, green[f].

This is planted, ſays Browne, in a few gardens in Jamaica, but is not much cultivated, for the Cotton is not thought to be ſo good, and the ſeeds are ſo ſmall, that it is a difficult matter to ſeparate them from the Cotton. It grows however more luxuriant than the common, and riſes generally from ſeven to nine feet in height, bearing a great number of ſeed-veſſels on all the branches.

Swartz mentions a variety, called *Cotonier de Soie* (Xylon americanum præſtantiſſimum, ſem. vireſcenti, *Tournef.*) the Cotton of which is better than any of the reſt.

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[a] Murr. prodr.
[b] Hort. kew. from Ger. herb.
[c] Loureiro.
[d] Linn. ſyſt.
[e] Hort. kew.
[f] Swartz.

4. This is a ſhrub, with branches ſcarcely hairy, but having ſmall black dots ſcattered over them, as the petioles alſo have. Leaves cordate, deeply three-lobed, in a very fertile ſoil five-lobed, as big as the palm of the hand, acuminate, with a ſingle gland under the midrib. The ſtamens are entirely monadelphous [g].

According to Swartz, the ſtem is a fathom in height, biennial, roundiſh, rugged: branches ſpreading very much, angular, ſtriated. Upper leaves three-lobed, lower five-lobed; lobes ovate, entire, nerved, pubeſcent; with three glandular pores underneath on the midribs of the leaves. Petioles long, round, patulous, hirſute, with black atoms ſcattered over them. Flowers oppoſite to the petioles, large, fulvous; on ſhort, dotted peduncles. Outer calyx ſubtriphyllous, pubeſcent, dotted [h]: the ſegments large, deeply and unequally toothed; the inner is very ſhort, and five-lobed in waves. Capſule leathery, thickiſh, three-celled, three-valved; the partitions inſerted in the middle of the valves, which are wrinkled within, and the edges turn back after they open. There is no receptacle, but the ſeeds are fixed in a double row to the central angle of the cells. Seeds about ſix in each cell, ovate, tapering towards the umbilicus, convex on one ſide, angular on the other, and white [i].

Native of India, China, and the Society Iſles. Cultivated in Jamaica. Introduced here in 1777, by Daniel Charles Solander, L. L. D. It flowers in july [k].

5. Stem four or five feet high, perpendicular, round, ſtraighter at the baſe, the thickneſs of a ſwan's quill, above flexuoſe and thicker, ſomewhat angular, ſwelling at the origin of the branches, green, rugged, pubeſcent, branched. Leaves large, horizontal or oblique, cordate, broad, the lower undivided, the upper deeply three-lobed, with acuminate lobes, pubeſcent eſpecially on the veins. There is a ſingle gland on the midrib about an inch from the baſe. Petiole half as long again as the leaf, ſpreading very much, thick at the baſe, ſometimes variouſly bent. Stipules in pairs on each ſide of the petiole and peduncle, oblique. Flower ſolitary, commonly one only on each branch: peduncle ſhort, three-ſided, oppoſite to the leaf. The ſtem, branches, petioles, peduncles, young leaves and ſmaller veins of thoſe which are more advanced are dotted with black. The calyx alſo is dotted: the outer three-leaved, and when cloſed three-ſided; the leaflets cordate, laciniated, the ſegments lanceolate, converging: the inner only one-third of the length, urceolate, ſtriated, five-parted, with ſhort, acuminate ſegments. Corolla as large as that of the Hollyhock, white turning red as it withers, without any ſpots at the baſe, where it is hirſute. Piſtil longer than the ſtamens. Stigmas five, hanging down beyond the ſtamens, dotted with black. Capſule ovate-oblong, four-valved, ſometimes but ſeldom five-valved, four-celled ſeldom five-celled. Seeds in each cell four to ſix or more, in a double row, involved in very white cotton [l].

6. Stem from ſix to fifteen feet in height, ſuffruticoſe, biennial, ſmooth. Branches almoſt erect, round and ſmooth or pubeſcent. Leaves alternate, the upper three-lobed, the lower five-lobed; lobes ovate, acute, nerved, ſmooth above but pubeſcent underneath. Petioles five or ſix inches long, roundiſh, patulous, ſmooth or ſometimes pubeſcent. Glandular pores, commonly three, on the midribs of the leaves underneath. Peduncles oppoſite to the petioles and ſhorter, thickiſh, round, ſtriated, pubeſcent, one-flowered. Flowers large, yellow, turning finally red. Outer calyx half-five-cleft; ſegments ovate, acute, ſmooth or pubeſcent, or having black atoms ſcattered over them: inner having three or five minute, blunt teeth. Petals having a purple ſpot at the baſe, and ſmooth on the outſide. Filaments ſhorter than the petals: anthers yellow or fulvous. Germ roundiſh-acuminate: ſtyle three or five-cleft at top. Capſule ovate-roundiſh, ſmooth, ſometimes dotted with black, three-celled, three-valved. Seeds oblong, eight to twelve, black, eaſily ſeparated from the cotton.

This is the ſpecies which is ſo much cultivated in the Weſt Indies [m], and forms a conſiderable branch of their exports.

An emulſion of the ſeeds is recommended in the bloody-flux; and an oil is obtained from them by expreſſion, which ſupplies the boiling-houſe lamps in ſome plantations [n].

Cultivated here in 1759, by Mr. Miller [o].

This and the third and fourth ſpecies are not eaſily diſtinguiſhed, for they vary in the ſize of the parts, the diviſion and pubeſcence of the leaves, the colour of the ſeeds and cotton, the adherence and tenacity of the latter, the number of glands at the back of the leaves, &c. ſo that it is difficult to ſay which are ſpecies, and which are varieties [p].]

PROPAGATION AND CULTURE.

All the ſpecies of Goſſypium or Cotton are very tender, and will not grow in the open air in England. The firſt and third will ripen their ſeeds here, if they be ſown early in the ſpring, upon a good hot-bed; and when the plants are come up, planted each into ſeparate pots, and plunged into the bark-bed to bring them forward: when they are too tall to remain under the frames, remove them into the tan-bed in the ſtove; and when the roots have filled the pots remove them into larger. With this management the flowers will appear in july, and the ſeeds will be ripe towards the end of ſeptember.

The Shrub-Cotton will riſe from ſeeds very eaſily, if ſown on a good hot-bed early in the ſpring: if they are brought forward in the ſame manner as directed for the others, the plants will be five or ſix feet high the ſame ſummer; but it is difficult to preſerve them through the winter, unleſs they are hardened gradually during the warm weather; for when they are forced on at that time, they will be ſo tender, as to render them incapable of reſiſting the leaſt injury. In autumn they muſt be placed in the bark-ſtove, and kept in the firſt claſs of heat, otherwiſe they will not live through the winter in England.

[Cotton is propagated in the Weſt Indies by the ſeed, which is ſet in rows, about five feet aſunder, at the end of ſeptember, or beginning of october, at firſt but ſlightly covered; but after it is grown up, the root is well moulded. The ſeed is ſubject to decay, when it is ſet too deep, eſpecially in wet weather. The ſoil ſhould not be ſtiff, nor ſhallow, as this plant has a tap-root. The ground is hoed frequently, and kept very clean about the young plants, until they riſe to moderate height; otherwiſe they are apt to be deſtroyed by caterpillars. It grows from four to ſix feet high, and produces two crops annually; the firſt in eight months from the time of ſowing the ſeed; the ſecond, within four months after the firſt; and the produce of each plant is reckoned about one pound weight. The branches are pruned or trimmed after the firſt gathering; and if the growth is over-luxuriant, this ſhould be done ſooner. When great part of the pods are expanded, the wool is picked, and afterwards cleared from the ſeeds by a machine called a gin, compoſed of two or three ſmooth wooden rollers of about one inch diameter, ranged horizontally, cloſe and parallel to each other, in a frame; at each extremity they are toothed or channelled longitudinally, correſponding one with the other; and the central roller, being moved with a treadel or foot-lath, reſembling that of a knife-grinder, makes the other two revolve in contrary directions. The Cotton is laid, in ſmall quantities at a time, upon theſe rollers, whilſt they are in motion, and, readily paſſing between them drops into a ſack, placed underneath to receive it, leaving the ſeeds, which are too large to paſs with it, behind. The Cotton thus diſcharged from the ſeeds, is afterwards hand-picked, and cleanſed thoroughly from any little particles of the pods or other ſubſtances which may be adhering to it. It is then ſtowed in large bags, where it is well trod down, that it may lie cloſe and compact; and the better to anſwer this purpoſe, ſome water is every now and then ſprinkled upon the outſide of the bag; the marketable weight of which is uſually three hundred pounds. An acre may be expected to produce from two hundred and forty pounds to that quantity; or two hundred and ſeventy pounds on an average[q].

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[g] Linn. ſyſt. [h] Swartz. [i] Gærtner. [k] Hort. kew. [l] Murray.

[m] Swartz. [n] Browne. [o] Hort. kew. [p] Swartz.

Gossypium. See *Bombax*.

GOUANIA. (*So named by Jacquin, in honour of Antoine Gouan, M. D. author of Flora Monſpeliaca, Hortus Monſpelienſis, and other celebrated works.*)

Lin. gen. n. 1157. *Reich.* 1268. *Schreb.* 1592. *Jacqu. amer.* 263. *Juſſ.* 381.

Claſſ. 23. 1. Polygamia Monoecia.

Nat. order of *Rhamni* Juſſ.

GENERIC CHARACTER.

* *Hermaphrodites.*

Cal. *Perianth* one-leafed, ſuperior, funnel-form, five-cleft: *tube* permanent; *ſegments* ovate, acute, ſpreading, deciduous.

Cor. none.

Stam. *Filaments* five, ſubulate, length of the calyx, and alternate with the ſegments. *Anthers* roundiſh, incumbent, veiled; *veil* like a cowl, elaſtic.

Pist. *Germ* inferior. *Style* ſubulate, half three-cleft. *Stigmas* obtuſe.

Per. *Fruit* dry, three-ſided, diviſible into three ſeeds.

Seeds. Three parts of the fruit, roundiſh inclined to three-ſided, two-winged.

* *Males*, on the ſame plant.

Cal. Cor. and Stam. as in the Hermaphrodites.

Pist. *Germ* none. *Style* as in the Hermaphrodites. *Stigmas* obſcure or none.

ESSENTIAL CHARACTER.

Herm. *Cal.* five-cleft. *Cor.* none. *Anthers* five, under a veil. *Style* three-cleft. *Fruit* inferior, tripartile.

Male ſimilar, but without germ and ſtigma.

SPECIES.

1. Gouania domingenſis. *Chaw-ſtick.*

Lin. ſpec. 1663. (edit. 1. 427. Baniſteria.) *ſyſt.* 912. *Reich.* 4. 336. *hort. upſ.* 97, (Paullinia). G. glabra. *Jacqu. amer.* 264. *t.* 179. *f.* 40. *pict.* 128. *t.* 264. *f.* 96.]

Lupulus ſylveſtris americana claviculis donata. *Pluk. alm.* 229. *t.* 201. *f.* 4. & *t.* 63. *f.* 3. *Mill. dict. ed.* 1. *vol.* 2. *addenda.*

DESCRIPTION, &c.

[Stem ſhrubby, and climbing like Hops by axillary tendrils. Leaves ovate or oblong-ovate, acuminate, or blunt with a point, unequally ſerrate-toothed, or ſlightly crenate only, ſmooth, deep green, alternate, petioled, two inches long. Racemes furniſhed with one or two leaflets. The male flowers have no piſtil whatſoever; but there are three or four flowers in a hundred that have a ſtyle without any germ.

Native of St. Domingo, in woods[r]. Cultivated by Mr. Miller in 1739[s].]

PROPAGATION AND CULTURE.

Sow the ſeeds on a hot-bed early in the ſpring, and when the plants are ſtrong enough, tranſplant each into a ſmall pot filled with light rich earth, and plunge the pots into a moderate hot-bed of tanner's-bark, watering and ſhading the plants until they have taken new root. In winter plunge them into the bark-bed in the ſtove, and water them frequently. The ſtems muſt be ſupported, and they ſeldom produce flowers before the third ſummer.

[Goupia. See *Gloſſopetalum.*

Gourd. See *Cucurbita.*

——— Bitter. See *Cucumis.*

——— Sour. See *Adanſonia.*

Gout-weed. See *Ægopodium.*

Gowlans, Locker. See *Trollius.*]

GRAFTING is the taking a ſhoot from one tree, and inſerting it into another, in ſuch a manner, as that both may unite cloſely, and become one tree; this is called by the ancient writers in huſbandry and gardening, inciſion, to diſtinguiſh it from inoculating, or budding, which they call inſerere oculos.

The uſe of grafting is to propagate any curious ſorts of fruits, ſo as to be certain of the kinds, which cannot be done by any other method; for as all the good fruits have been accidentally obtained from ſeeds, ſo the ſeeds of theſe, when ſown, will many of them degenerate, and produce ſuch fruit as are not worth cultivating: but when ſhoots are taken from ſuch trees as produce good fruit, theſe will never alter from their kind, whatever be the ſtock, or tree, on which they are grafted; for though the grafts receive their nouriſhment from the ſtocks, yet their varieties are never altered by them, but continue to produce the ſame kind of fruit as the tree from which they were taken; the only alteration is, that when the ſtocks on which they are grafted do not grow ſo faſt, and afford a ſufficient ſupply of nouriſhment to the grafts, they will not make near ſo great progreſs as they otherwiſe would do, nor will the fruit they produce be ſo fair, and ſometimes not ſo well flavoured.

The ſhoots are termed cions, or graffs; in the choice of theſe the following directions ſhould be carefully obſerved. 1ſt, That they are ſhoots of the former year, for when they are older, they never ſucceed well. 2dly, Always to take them from healthy fruitful trees, for if the trees are ſickly from whence they are taken, the grafts very often partake ſo much of the diſtemper as rarely to get the better of it, at leaſt for ſome years; and when they are taken from young luxuriant trees, whoſe veſſels are generally large, they will continue to produce luxuriant ſhoots, and are ſeldom ſo fruitful as thoſe which are taken from fruitful trees, whoſe ſhoots are more compact, and the joints cloſer together; at leaſt it will be a great number of years before the luxuriant grafts begin to produce fruit, if they are managed with the greateſt ſkill. 3dly, You ſhould prefer thoſe grafts which are taken from the lateral, or horizontal branches, to thoſe from the ſtrong perpendicular ſhoots, for the reaſons before given.

Theſe grafts, or cions, ſhould be cut off from the trees before the buds begin to ſwell, which is generally three weeks or a month before the ſeaſon for grafting; therefore, when they are cut off, they ſhould be laid in the ground with the cut downwards, burying them half their length, and covering their tops with dry litter, to prevent their drying; if a ſmall joint of the former year's wood is cut off with the cion, it will preſerve it the better, and when they are grafted, this may be cut off; for at the ſame time the cions muſt be cut to a proper length before they are inſerted in the ſtocks; but, till then, the ſhoots ſhould remain their full length, as they were taken from the tree, which will preſerve them better from ſhrinking; if theſe cions are to be carried to a conſiderable diſtance, it will be proper to put their ends into a lump of clay, and to wrap them up in moſs, which will preſerve them freſh for a month, or longer; but theſe ſhould be cut off earlier from the trees than thoſe which are to be grafted near the place where the trees are growing.

Having given directions for the cions and grafts, we next come to that of the ſtock, which is a term applied to the trees intended for grafting; theſe are either ſuch old trees as are already growing in the places where they are to remain, whoſe fruit is intended to be changed, or young trees, which have been raiſed in a nurſery for a ſupply to the garden; in the former caſe there is no other choice, but that of the branches, which ſhould be ſuch as are young, healthy, well ſituated, and have a ſmooth bark; if theſe trees are growing againſt walls, or eſpaliers, it will be proper to graft ſix, eight, or ten branches, according to the ſize of the trees, by which they will be much ſooner furniſhed with branches again, than when a leſs number of cions are put in; but in ſtandard-trees, four, or at moſt ſix cions will be ſufficient.

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[q] Long's Jam. vol. 3. p. 686. &c. and Browne.

[r] Jacquin. [s] Hort. kew. from Mill. dict. ed. 1. vol. 2. add.

In the choice of young ſtocks for grafting, you ſhould always prefer ſuch as have been raiſed from the ſeed, and that have been once or twice tranſplanted.

Next to theſe, are thoſe ſtocks which have been raiſed from cuttings, or layers, but thoſe which are ſuckers from the roots of other trees ſhould always be rejected, for theſe are never ſo well rooted as the others, and conſtantly put out a great number of ſuckers from their roots, whereby the borders and walks of the garden will be always peſtered with them during the ſummer ſeaſon, which is not only unſightly, but they alſo take off part of the nouriſhment from the trees.

If theſe ſtocks have been allowed a proper diſtance in the nurſery where they have grown, the wood will be better ripened, and more compact than thoſe which have grown cloſe and have been there drawn up to a greater height; the wood of theſe will be ſoft, and their veſſels large, ſo that the cions grafted into them will ſhoot very ſtrong, but they will be leſs diſpoſed to produce fruit than the other; and when trees acquire an ill habit at firſt, it will be very difficult to reclaim them afterward.

Having directed the choice of cions and ſtocks, we come next to the operation, in order to which you muſt be provided with the following tools.

1. A neat ſmall hand-ſaw to cut off the heads of large ſtocks.
2. A good ſtrong knife with a thick back, to make clefts in the ſtocks.
3. A ſharp penknife to cut the grafts.
4. A grafting chiſſel and a ſmall mallet.
5. A wedge, to keep open the clefts in large ſtocks till the inſertion of the graft.
6. Baſs ſtrings, or woollen yarn, to tie the grafts with, and ſuch other inſtruments and materials as you ſhould find neceſſary, according to the manner of grafting you are to perform.
7. A quantity of clay, which ſhould be prepared a month before it is uſed, and kept turned and mixed, like mortar every other day; this is to be made after the following manner:

Get a quantity of ſtrong fat loam (in proportion to the quantity of trees intended to be grafted) then take ſome new ſtone-horſe dung, and break it in amongſt the loam, and if you cut a little ſtraw, or hay, very ſmall, and mix amongſt it, the loam will hold together the better; and if there be a quantity of ſalt added, it will prevent the clay from dividing in dry weather; theſe muſt be well ſtirred together, putting water to them after the manner of making mortar; it ſhould be hollowed like a diſh, and filled with water, and kept every other day ſtirred; but it ought to be remembered, that it ſhould not be expoſed to the froſt, or drying winds, and the oftener it is ſtirred and wrought the better.

Of late years ſome perſons have made uſe of another compoſition for grafting, which they have found to anſwer the intention of keeping out the air, better than the clay before deſcribed. This is compoſed of turpentine, bees-wax, and reſin, melted together, which, when of a proper conſiſtence, may be put on the ſtock round the graft, in the ſame manner as the clay is uſually applied; and though it be not above a quarter of an inch thick, yet it will keep out the air more effectually than the clay; and as cold will harden this, there is no danger of its being hurt by froſt, which is very apt to cauſe the clay to cleave, and ſometimes fall off; and when the heat of ſummer comes on, this mixture will melt, and fall off without any trouble. In uſing of this, there ſhould be a tin, or copper-pot, with conveniency under it to keep a very gentle fire with ſmall-coal, otherwiſe the cold will ſoon condenſe the mixture; but you muſt be careful not to apply it too hot, leſt you injure the graft. A perſon who is a little accuſtomed to this compoſition, will apply it very faſt, and it is much eaſier for him than clay, eſpecially if the ſeaſon ſhould prove cold.

There are ſeveral ways of grafting, the principal of which are five:

1. Grafting in the rind, called alſo ſhoulder-grafting, which is only proper for large trees; this is called crown-grafting, becauſe the grafts are ſet in form of a circle, or crown, and is generally performed about the latter end of march, or the beginning of april.
2. Cleft-grafting, which is alſo called ſtock, or ſlit-grafting; this is proper for trees or ſtocks of a leſſer ſize, from an inch, to two inches or more diameter; this grafting is to be performed in the months ef february and march, and ſupplies the failure of the eſcutcheon way, which is practiſed in june, july, and auguſt.
3. Whip-grafting, which is alſo called tongue-grafting; this is proper for ſmall ſtocks of an inch, half an inch, or leſs, diameter; this is the moſt effectual way of any, and which is moſt in uſe.
4. Grafting by approach, or ablactation; this is to be performed when the ſtock you would graft on, and the tree from which you take your graft, ſtand ſo near together, that they may be joined; this is to be performed in the month of april, and is alſo called inarching, and is chiefly uſed for Jaſmines, Oranges, and other tender exotic trees.

[5. Grafting in the root, which is of later invention than any of the former ways, and in many circumſtances may be an improvement of them all.

The ſeaſon for grafting muſt be regulated by the weather. Our climate is ſo uncertain in the ſpring, that it is better to defer it till the circulation of the ſap is briſk, and the buds of the ſtocks are beginning to break into leaves: obſerving only that the weak ſhoots of tender trees will not admit of being ſo long cut as the more hardy.

It is indiſpenſably neceſſary never to graft while it actually freezes or rains[a].]

We come next to the manner of performing the ſeveral ways of grafting.

The firſt method, which is termed rind, or ſhoulder-grafting, is ſeldom practiſed but on large trees, where either the head, or the large branches, are cut off horizontally, and two or four cions put in, according to the ſize of the branch, or ſtem; in doing of this, the cions are cut flat on one ſide, with a ſhoulder to reſt upon the crown of the ſtock; then the rind of the ſtock muſt be raiſed up, to admit the cion between the wood and the bark of the ſtock, which muſt be inſerted about two inches, ſo as the ſhoulder of the cion may meet, and cloſely join the crown of the ſtock; and after the number of cions are inſerted, the whole crown of the ſtock ſhould be well clayed over, leaving two eyes of the cions uncovered therewith, which will be ſufficient for ſhooting; this method of grafting, was much more in practice formerly than at preſent; the diſcontinuance of it was occaſioned by the ill ſucceſs it was attended with; for as theſe cions were placed between the rind of the ſtock and the wood, they were frequently blown out by ſtrong winds, after they had made large ſhoots, which has ſometimes happened after five or ſix years growth; ſo that whenever this method is practiſed, there ſhould be ſome ſtakes faſtened to ſupport the cions, until they have almoſt covered the ſtock.

The next method is termed cleft, or ſtock-grafting; this is practiſed upon ſtocks, or trees, of a ſmaller ſize, and may be uſed with ſucceſs, where the rind of the ſtock is not too thick, whereby the inner bark of the cion will be prevented joining to that of the ſtock; this may be performed on ſtocks, or branches, which are more than one inch diameter; in the doing of this, the head of the ſtock, or branch, may be cut off with a ſlope, and a ſlit made the contrary way, in the top of the ſlope, deep enough to receive the cion, which ſhould be cut ſloping, like a wedge, ſo as to fit the ſlit made in the ſtock, being careful to leave that ſide of the wedge, which is to be placed outward, much thicker than the other; and in putting the cion into the ſlit of the ſtock, there muſt be great care taken to join the rind of the cion to that of the ſtock; for if theſe do not unite, the grafts will not ſucceed: when this method of grafting is uſed to ſtocks which are not ſtrong, it will be proper to make a ligature of baſs, to prevent the ſlit of the ſtock from opening; then the whole ſhould be clayed over, to prevent the air from penetrating the ſlit, ſo as to deſtroy the grafts, only leaving two eyes of the cions above the clay for ſhooting.

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[a] Boutcher.

The third method is termed whip, or tongue-grafting, which is the moſt commonly practiſed of any by the nurſerymen near London, eſpecially for ſmall ſtocks, becauſe the cions much ſooner cover the ſtocks in this method than in any other.

This is performed by cutting off the head of the ſtocks ſloping; then there muſt be a notch made in the ſlope toward the upper part downward, a little more than half an inch deep, to receive the cion, which muſt be cut with a ſlope upward, and a ſlit made in this ſlope like a tongue, which tongue muſt be inſerted into the ſlit made in the ſlope of the ſtock, and the cion muſt be placed on one ſide of the ſtock, ſo as that the two rinds of both cion and ſtock may be equal, and join together exactly; then there ſhould be a ligature of baſs to faſten the cion, ſo as that it may not be eaſily diſplaced, and afterward clay it over, as in the former methods.

The fourth ſort of grafting is termed inarching, grafting by approach, or ablactation. This is only to be performed when the ſtocks, which are deſigned to be grafted, and the tree from which the graft is to be taken, ſtand ſo near together, or may be brought ſo near together, as that their branches may be united; this method of grafting is commonly practiſed on tender exotic plants, and ſome other ſorts which do not ſucceed in any of the other methods.

In performing this operation, a part of the ſtock, or branch, muſt be ſlit off about two inches in length, obſerving always to make choice of a ſmooth part of the ſtock; then a ſmall notch ſhould be made in this ſlit of the ſtock downward, in the ſame manner as has been directed for whip-grafting; then the branch of the tree deſigned to be inarched, ſhould have a part ſlit off in like manner as the ſtock, and a ſlit made upward in this, ſo as to leave a tongue; which tongue ſhould be inſerted into the ſlit of the ſtock, obſerving to join their rinds equally, that they may unite well together; then make a ligature of baſs, to keep them exactly in their ſituation, and afterward clay this part of the ſtock over well, to keep out the air; in this method of grafting, the cion is not ſeparated from the tree, until it is firmly united with the ſtock, nor is the head of the ſtock, or branch, which is grafted, cut off till this time, and only half the wood pared off with a ſlope, about three inches in length, and the ſame of the cion, or graft.

This method of grafting is not performed ſo early in the ſeaſon as thoſe of the other, it being done in the month of april, when the ſap is flowing, at which time the cion and ſtock will join together, and unite much ſooner than at any other ſeaſon.

The Walnut, Fig, and Mulberry, will take by this method of grafting; but neither of theſe will ſucceed in any of the other methods; there are alſo ſeveral ſorts of Evergreens, which may be propagated by this method of grafting; but all the trees which are grafted in this way are weaker, and never grow to the ſize of thoſe which are grafted in the other methods; therefore this is rarely practiſed, but on ſuch ſorts of trees as will not take by the other methods.

[The fifth method is performed by cutting the clean ſmooth roots of the ſtocks in pieces five or ſix inches long, and as large or a little larger than the graft. Let them be whip-grafted and tied together very cloſe, ſo as to prevent the wet from affecting the wounded parts, and plant them ſo deep, that the graft, which ſhould be four or five inches long, may be about half buried. By this method, the grafts themſelves will root, and a nearer ſimilitude preſerved to the tree from whence the grafts are taken: nay after two or three years the ſtock may be cut quite away, and the graft left to maintain itſelf. In practiſing this method, the grafts may be an inch or two longer than is directed for the others [b].]

The next thing which is neceſſary to be known, by thoſe who would practiſe this art, is, what trees will take and thrive by being grafted upon each other; and here there have been no ſure directions given by any of the writers on this ſubject, for there will be found great miſtakes in all their books, in relation to this matter; but as it would ſwell this article too much, if all the ſorts of trees were to be here enumerated, which will take upon each other by grafting, I ſhall only mention ſuch general directions, as, if attended to, will be ſufficient to inſtruct perſons, ſo as they may ſucceed.

All ſuch trees as are of the ſame genus, i. e. which agree in their flower and fruit, will take upon each other: for inſtance, all the Nut-bearing trees may be ſafely grafted on each other, as may all the Plum-bearing trees, under which head I reckon not only the ſeveral ſorts of Plums, but alſo the Almond, Peach, Nectarine, Apricot, &c. which agree exactly in their general characters, by which they are diſtinguiſhed from all other trees; but as many of theſe are very ſubject to emit large quantities of gum from the parts of the trees as are deeply cut and wounded, for the tender trees of this kind, viz. Peaches and Nectarines, which are moſt ſubject to this, it is found to be the ſureſt method to bud or inoculate theſe ſorts of fruits, for which ſee INOCULATION.

Then all ſuch trees as bear cones will do well upon each other, though they may differ in one being evergreen, and the other ſhedding its leaves in winter; as is obſervable in the Cedar of Libanus, and the Larch-tree, which are found to ſucceed upon each other very well; but theſe muſt be grafted by approach, for they abound with a great quantity of reſin which is apt to evaporate from the graft, if ſeparated from the tree before it is joined with the ſtock, whereby they are often deſtroyed; as alſo the Laurel on the Cherry, or the Cherry on the Laurel. All the maſt-bearing trees will alſo take upon each other, and thoſe which have a tender ſoft wood will do well if grafted in the common way; but thoſe that are of a more firm contexture, and are ſlow growers, ſhould be grafted by approach.

By ſtrictly obſerving this rule, we ſhall ſeldom miſcarry, provided the operation be rightly performed, and at a proper ſeaſon, unleſs the weather ſhould prove very bad, as it ſometimes happens, whereby whole quarters of fruit-trees miſcarry; and it is by this method that many kind of exotic trees are not only propagated, but alſo rendered hardy enough to endure the cold of our climate in the open air; for, being grafted upon ſtocks of the ſame ſort which are hardy, the grafts are rendered more capable to endure the cold, as has been experienced by moſt of our valuable fruits now in England, which were formerly tranſplanted here from more ſoutherly climates, and were at firſt too impatient of our cold to ſucceed well abroad; but have been, by budding or grafting upon more hardy trees, rendered capable of reſiſting our ſevereſt cold.

GRAIN, OILY. See *Seſamum*.

GRAIN, SCARLET. See *Cactus* and *Quercus*.

GRAINS OF PARADISE. See *Amomum*.

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[b] Boutcher.

GRAMEN. See *Graſs.*
Gramen Fuchſii. See *Stellaria holoſtea.*
——— aculeatum. See *Crypſis aculeata.*
——— agrorum, *Mor.* See *Aira ceſpitoſa.*
——— alopecuroides. See *Alopecurus, Cynoſurus, Holcus, Lagurus.*
——— alopecuro accedens. See *Milium.*
——— alopecurum. See *Alopecurus, Anthoxanthum, Cynoſurus, Saccharum ſericeum.*
——— alpinum. See *Aira, Avena, Feſtuca, Poa alpina.*
——— altiſſimum. See *Aira ceſpitoſa.*
——— americanum. See *Cenchrus echinatus.*
——— aquaticum. See *Aira aquatica, Alopecurus geniculatus, Feſtuca fluitans, Phalaris arundinacea, Poa aquatica.*
——— arguens, *Rumph.* See *Stipa arguens—Anthiſtiria ciliata,* Linn. ſuppl.
——— arundinaceum. See *Agroſtis, Arundo, Feſtuca, Holcus, Melica, Phalaris arundinacea, Saccharum, Scirpus.*
——— arvenſe. See *Agroſtis, Cynoſurus, Dactylis, Poa.*
——— aſperum. See *Dactylis.*
——— avenaceum. See *Agroſtis, Aira, Andropogon, Anthoxanthum, Avena, Bromus, Elymus, Feſtuca, Melica, Milium, Pharus, Stipa.*
——— barcinonenſe. See *Cynoſurus aureus.*
——— bermudenſe. See *Panicum dimidiatum* and *Rottboella dimidiata.*
——— bicorne. See *Andropogon.*
——— bromoides. See *Bromus.*
——— bufonium. See *Juncus bufonius.*
——— bulboſum. See *Hordeum* and *Sagittaria.*
——— caninum. See *Agroſtis, Aira, Cenchrus, Elymus, Holcus, Poa, Triticum.*
——— capillatum. See *Agroſtis* and *Feſtuca.*
——— capitatum, *Rumph.* See *Schoenus coloratus—Kyllinga monocephala.*
——— caricoſum. See *Andropogon caricoſum,* and *Panicum polyſtachyon,* Cenchri ſpecies.
——— caryophyllatum. See *Carex.*
——— caryophylleum. See *Carex.*
——— creticum. See *Ægilops caudata,* and *Secale villoſum.*
——— criſtatum. See *Cynoſurus criſtatus* and *Feſtuca ovina.*
——— cruciatum. See *Agroſtis radiata.*
——— cyperoides. See *Carex, Cyperus, Schoenus, Scirpus.*
——— dactyloides. See *Cynoſurus indicus.*
——— dactylon. See *Agroſtis, Andropogon, Cynoſurus, Panicum, Paſpalum, Spiniſex, Tripſacum.*
——— echinatum. See *Cenchrus.*
——— enode. See *Melica coerulea.*
——— eranthemum. See *Briza Eragroſtis.*
——— erectum. See *Juncus bufonius.*
——— eriophorum. See *Eriophorum.*
——— exile. See *Juncus, Nardus, Poa, Triticum.*
——— feſtuceum. See *Bromus* and *Feſtuca.*
——— filiceum. See *Briza.*
——— floridum. See *Stellaria.*
——— fluviatile. See *Alopecurus* and *Cyperus.*
——— foliis junceis. See *Aira* and *Feſtuca.*
——— fumi, *Rumph.* See *Poa tenella.*
——— geniculatum. See *Panicum verticillatum.*
——— glumis variis. See *Cynoſurus coeruleus.*
——— hirſutum. See *Juncus* and *Scirpus.*
——— holoſteum. See *Juncus.*
——— hordeaceum. See *Elymus* and *Hordeum.*
——— iſchœmum. See *Cynoſurus.*
——— junceum. See *Andropogon, Bromus, Carex, Cyperus, Eriocaulon, Juncus, Littorella, Nardus, Scheuchzeria, Schoenus, Scirpus, Subularia, Xyris.*
——— juncoides. See *Eriophorum* and *Juncus.*
——— lanatum. See *Holcus lanatus.*
——— legitimum, *Cluſ.* See *Panicum* (Agroſtis) *dactylon.*
——— locuſtis echinatis. See *Cenchrus echinatus.*
——— loliaceum. See *Ægilops* (Rottboellia) *incurvata, Agroſtis, Bromus, Cynoſurus, Elymus, Feſtuca, Lolium, Milium, Nardus, Poa, Triticum.*
Gramen luzulæ. See *Juncus* and *Schoenus.*
——— maderaſpatanum. See *Poa ciliaris.*
——— majus. See *Poa aquatica.*
——— mannæ. See *Feſtuca fluitans.*
——— mariæ. See *Holcus odoratus.*
——— maritimum. See *Cenchrus tribuloides, Dactylis cynoſuroides, Feſtuca phœnicoides, Phalaris arenaria, Ruppia maritima, Triticum maritimum.*
——— miliaceum. See *Agroſtis, Holcus, Milium, Panicum, Phalaris* (Leerſia) *oryzoides.*
——— minimum. See *Agroſtis pumila, Aira præcox, Cenchrus capitatus, Triticum unilaterale.*
——— montanum. See *Agroſtis ſtolonifera, Cenchrus capitatus, Feſtuca decumbens, Melica ciliata, Poa bulboſa.*
——— murorum. See *Bromus tectorum, Feſtuca myurus, Poa compreſſa.*
——— myloicyphorum. See *Uniola paniculata.*
——— myoſuroides. See *Alopecurus.*
——— myuros *or* myurum. See *Ægilops* (Rottboellia) *incurvata* and *Alopecurus.*
——— nemoroſum. See *Aira, Carex, Juncus, Poa.*
——— nodoſum. See *Avena elatior* and *Phleum nodoſum.*
——— orientale. See *Aira arundinacea, Ariſtida plumoſa, Cenchrus fruteſcens, Cornucopiæ cucullatum, Secale* (Triticum) *orientale.*
——— paluſtre. See *Phalaris* (Cynoſurus) *erucæformis, Phalaris* (Leerſia) *oryzoides, Poa aquatica* and *paluſtris.*
——— paniceum. See *Holcus, Olyra, Panicum, Paſpalum.*
——— paniculatum. See *Agroſtis, Aira, Briza, Feſtuca, Holcus, Melica, Milium, Poa.*
——— parnaſſi. See *Convallaria bifolia* and *Parnaſſia.*
——— parvum. See *Aira præcox, Carex pedata, Uniola ſpicata.*
——— phalaroides. See *Agroſtis, Aira, Alopecurus, Bromus, Cynoſurus, Phalaris, Poa.*
——— phoenicoides. See *Feſtuca phoenicoides.*
——— piperinum. See *Pilularia.*
——— Polyanthemum. See *Statice Armeria.*
——— pratenſe. See *Aira, Anthoxanthum, Avena, Bromus, Cynoſurus, Eriophorum, Feſtuca, Holcus, Melica, Phalaris, Poa.*
——— pumilum. See *Triticum maritimum.*
——— puſillum. See *Scirpus capillaris* and *Triticum unilaterale.*
——— ſciurum. See *Cynoſurus aureus.*
——— ſecalinum. See *Agroſtis, Andropogon, Elymus; Hordeum.*
——— ſegetum. See *Agroſtis Spica venti* and *Aira ceſpitoſa.*
——— ſerotinum. See *Agroſtis rubra* and *Milium lendigerum.*
——— ſparteum ſ. ſpartum. See *Agroſtis minima, Aira caneſcens, Andropogon Gryllus, Arundo arenaria, Carex vulpina, Feſtuca elatior* & *ſpadicea, Lygeum Spartum, Nardus ſtricta, Stipa pennata.*
——— ſpica Brizæ. See *Bromus diſtachyos* & *pinnatus* and *Melica papilionacea.*
——— ſpica criſtata. See *Poa criſtata.*
——— ſpica triticea. See *Elymus caninus.*
——— ſpicatum. See *Ægilops, Alopecurus agreſtis, Arundo arenaria, Carex tomentoſa, Crypſis aculeata, Dactylis glomerata, Feſtuca phoenicoides, Hordeum murinum, Lagurus ovatus, Secale villoſum, Stipa pennata, Triglochin maritimum.*
——— ſupinum. See *Agroſtis canina* and *Panicum hirtellum.*
——— ſylvaticum. See *Bromus giganteus, Milium effuſum, Poa nemoralis.*
——— tomentarium ſ. tomentoſum. See *Eriophorum, Lagurus, Saccharum ſericeum.*
——— tremulum. See *Briza* and *Poa Eragroſtis.*
——— tribuloides. See *Cenchrus.*
——— triglochin. See *Triglochin.*
——— triticeum. See *Feſtuca decumbens* and *Bromus criſtatus ſ. Triticum criſtatum.*

Gramen tritici ſpica. See *Triticum.*

——— typhinum. See *Alopecurus, Cynoſurus, Phalaris, Phleum.*

——— typhoides. See *Alopecurus, Phalaris, Phleum.*

——— vaccinum, *Rumph.* See *Cynoſurus indicus.*

——— vernum. See *Anthoxanthum vernum* and *Poa bulboſa.*

——— virginianum. See *Panicum.*

——— xerampelinum. See *Poa bulboſa.*

Graminifolia. See *Pilularia, Subularia, Zannichellia.*

Granadilla. See *Paſſiflora.*

Grana Paradiſi. See *Amomum.*

Granatum. See *Punica.*

Granum moluccum. See *Croton Tiglium.*

——— moschatum. See *Hibiſcus Abelmoſchus.*

Grape. See *Vitis.*

——— Hyacinth. See *Hyacinthus.*

——— Sea. See *Ephedra.*

——— Sea-side. See *Coccoloba.*

GRASS. The Graſſes, ſo extenſively uſeful in rural oeconomy, are chiefly to be found in the ſecond Order of the Third Claſs, (Triandria Digynia) in the Sexual Syſtem.

However numerous they may be, and diſtinct from each other, they generally agree in the following circumſtances; which, taken together, form the Natural Character of this tribe or family. The *Calyx* is a glume or chaff, in moſt ſpecies compoſed of two valves, one larger and gibbous, the other ſmaller and flat. The *Corolla* alſo is a bivalve glume, and is accompanied by a very ſmall, ſuperior, two-leaved nectarium, of an oblong form. The *Stamens* are three in number; the filaments capillary; the anthers oblong and bicapſular. There are two *Piſtils*, which are pubeſcent, reflex or bent back from each other, and terminated by pubeſcent ſtigmas. One *Seed* only, or grain, ſucceeds to each flower: it has no pericarp, but is covered by the calyx, corolla, or both; it is of an oblong form, drawn to a point at both ends, and monocotyledonous, or compoſed of one lobe only.

Beſides this agreement in the fructification, Graſſes are known at firſt ſight to perſons totally unſkilled in Botany, by their peculiar appearance, or habit as Botaniſts call it. Their ſtalk is ſimple or unbranched, ſtraight, hollow, and jointed. Their leaves are quite entire, of a long linear ſhape, acuminate or drawing gradually to a point at the end, marked with lines parallel to the midrib or middle nerve. Upon the culm or ſtalk there is only one of theſe leaves to each joint, ariſing from a ſheath which inveſts the ſtalk, uſually to a conſiderable diſtance. The ſeed, it is well known, is farinaceous, or abounding in meal, and is the principal food of many tribes of birds; as the ſeeds of the larger ſorts, which we call Corn, are of mankind.

One genus of Graſs entitled *Anthoxanthum* differs from the reſt in having two ſtamens only. And there are ſeveral genera, which having male flowers mixed with the hermaphrodites are placed by Linneus in his claſs Polygamia.

Artificial Graſſes, vulgarly ſo called, are moſtly Leguminous plants, totally different in every reſpect from Graſſes, except in being uſed as food for cattle; and are to be ſought for in the claſs Diadelphia.

All the Graſſes are particularly treated of under their reſpective genera and ſpecies, for which ſee the articles *Ægilops, Agroſtis, Aira, Alopecurus, Andropogon, Anthiſteria, Anthoxanthum, Apluda, Arundo, Avena, Bromus, Cenchrus, Crypſis, Cynoſurus, Dactylis, Elymus, Eriphorum, Feſtuca, Holcus, Hordeum, Iſchæmum, Lolium, Melica, Miegia, Milium, Nardus, Panicum, Pappophorum, Paſpalum, Perotis, Phalaris, Phleum, Poa, Rottboellia, Saccharum, Secale, Stipa, Triticum.*]

For the Artificial Graſſes—

Clover. See *Trifolium.*

Lucerne. See *Medicago.*

Saint-Foin. See *Hedyſarum.*

Trefoil. See *Trifolium.*

Graſs for Gardens.

The Engliſh Graſs is of ſo good a quality for walks or Graſs-plats, that if they be kept in good order, they have that exquiſite beauty that they cannot come up to in France, and ſeveral other countries. But green walks and green plats are, for the moſt part, not made by ſowing the Graſs-ſeed, but by laying turfs; and, indeed, the turfs from a fine common or down, are much preferable to ſown Graſs.

In ſowing a fine green plat, there is a difficulty in getting good ſeed; it ought not to be ſuch as is taken out of the hay-loft without diſtinction; for that ſeed ſhooting too high and making large ſtalks, the lower part will be naked and bare; and although it be mowed ever ſo often, it will never make handſome Graſs; but, on the contrary, will come to nothing but tufts of weeds and Quick-graſs, very little better than that of the common fields.

If walks or plats be made by ſowing, the beſt way is to procure the ſeed from thoſe paſtures where the Graſs is naturally fine and clear, or elſe the trouble of keeping it from ſpiry and benty Graſs will be very great, and it will ſcarce ever look handſome.

In order to ſow Graſs-ſeed, the ground muſt be firſt dug or broken up with a ſpade; and when it has been dreſſed and laid even, it muſt be very finely raked over, and all the clods and ſtones taken off, and covered over an inch thick with good mould, to facilitate the growth of the ſeed; this being done, the ſeed is to be ſown pretty thick, that it may come up cloſe and ſhort; and it muſt be raked over again to bury and cover the ſeed, that if the weather ſhould happen to be windy, it may not be blown away.

As to the ſeaſon of ſowing Graſs, the middle or latter end of auguſt is a good time, becauſe the ſeed naturally requires nothing but moiſture to make it grow: if it be not ſown till the latter end of february, or the beginning of march, if the weather proves dry, it will not ſo ſoon make the walks or quarters green. It is alſo beſt to ſow it in a mild day, and inclining to rain; for that, by ſinking down the ſeed in the earth, will cauſe it to ſhoot the ſooner. But where Graſs is ſown in gardens, either for lawns or walks, there ſhould always be a good quantity of the White Trefoil or Dutch Clover ſown with it, for this will make a fine turf much ſooner than any other ſown Graſs, and will continue a better verdure than any of the Graſs tribe.

After the ſeed is well come up, and the Graſs is very thick and of a beautiful green, it will require a conſtant care to keep it in order: this conſiſts in mowing the Graſs often, for the oftener it is mowed, the thicker and handſomer it grows; it muſt alſo be rolled with a cylinder or roller of wood, to level it as much as poſſible.

If Graſs be neglected, it will run into Quick-graſs and weeds; and if it does ſo, there is no way to recover it, but either by ſowing it, or laying it over again, and that once in every two years; but if the ground be well cleared from the roots of ſtrong weeds, and the turf be taken from a fine level common, it will continue handſome for ſeveral years, provided it be well kept.

In order to keep Graſs-plats or walks handſome and in good order, in autumn you may ſow ſome freſh ſeed over any places that are not well filled, or where the Graſs is dead, to renew and furniſh them again; but there is nothing which improves Graſs ſo much as conſtant rolling and polling it, to deſtroy wormcaſts, and thereby the turf is rendered fine.

It is a general practice when turf is laid in gardens, to cover the ſurface of the ground under the turf, either with ſand or very poor earth; the deſign of this is to keep the Graſs fine, by preventing its growing too rank. This is proper enough for very rich ground, but it is not ſo for ſuch land as is but middling or poor; for when this is practiſed in ſuch places, the Graſs will ſoon wear out, and decay in patches.

When turf is taken from a common or down, there ſhould be regard had to the cleanneſs of it, and not to take ſuch as is full of weeds: for it will be a very tedious piece of work to weed them out after the turf is laid; and unleſs this is done, the Graſs will never appear handſome.

Where turf is deſigned to remain for years without renewing, there ſhould be dreſſing laid upon it every other year, either of very rotten dung, aſhes, or, where it can be eaſily procured, very rotten tan is a good dreſſing for Graſs; but theſe dreſſings ſhould be laid on early in winter, that the rain may waſh them into the ground before the drought of the ſpring comes on, otherwiſe they will occaſion the Graſs to burn when the warmth of ſummer begins. Where Graſs is ſo dreſſed, and kept well rolled and mowed, it may be kept very beautiful for many years; but where it is not dreſſed or fed with ſheep, it will rarely continue handſome more than eight or ten years.

Graſs for Meadows and Paſtures.

The land on which Graſs-ſeed is intended to be ſown, ſhould be well ploughed, and cleared from the roots of noxious weeds, ſuch as Couch-graſs, Fern, Ruſhes, Heath, Gorſe, Broom, Reſt-harrow, &c. which, if left in the ground, will ſoon get the better of the Graſs, and over-run the land. Therefore in ſuch places where any of theſe weeds abound, it will be a good method to plough up the ſurface in april, and let it lie ſome time to dry; then harrow the roots into ſmall heaps, and burn them. The aſhes ſo produced, when ſpread on the land, will be a good manure for it. The method of burning the roots is particularly directed under the article Land, which ſee: but where Couch-graſs, Fern, or Reſt-harrow is in plenty, whoſe roots run far under ground, the land muſt be ploughed two or three times pretty deep in dry weather, and the roots carefully harrowed off after each ploughing, which is the moſt ſure method to deſtroy them. Where the land is very low, and of a ſtiff clayey nature, which holds water in winter, it will be of ſingular ſervice to make ſome under-ground drains to carry off the wet; which, if detained too long on the ground, will render the Graſs ſour. The method of making theſe drains is preſcribed under the article Land, which ſee.

Before the ſeed is ſown, the ſurface of the ground ſhould be made level and fine, otherwiſe the ſeed will be buried unequally. When the ſeed is ſown, it muſt be gently harrowed in, and the ground rolled with a wooden roller, which will make the ſurface even, and prevent the ſeeds being blown in patches. When the Graſs comes up, if there ſhould be any bare ſpots where the ſeed has not grown, they may be ſown again, and the ground rolled, which will fix the ſeeds; and the firſt kindly ſhowers will bring up the Graſs, and make it very thick.

Where the land is deſigned to continue in paſture, it ſhould be ſown with the beſt ſorts of Graſs-ſeeds, and white Dutch Clover, or what is commonly called Honeyſuckle Graſs in many parts of England, but there is a great difficulty of procuring hay-ſeeds which are good; for in all the good paſtures near London, which abound with the beſt ſorts of Graſs, the hay is commonly cut before the ſeeds of the Graſs are ripe; ſo that thoſe ſeeds which are procured from the ſtables where the horſes are fed with the beſt ſort of hay, are little more than chaff, or at beſt are only ſuch as are of the early kinds of Graſs, with a great quantity of Plantain and other weeds; which has diſcouraged many gentlemen from ſowing them, nor has any one attempted to ſave theſe ſeeds properly; and as it requires longer time, and more attention, to ſave a quantity of ſeeds of the purer ſort of Graſs than the generality of people care to beſtow, I would recommend the ſetting ſome of thoſe upland paſtures which are cleaneſt from weeds, and have the ſweeteſt herbage aſide, to ſtand for ſeeds; and although by ſo doing the hay will be leſs valuable, yet from the ſale of the ſeeds, it may anſwer better to the poſſeſſor than to mow it merely for the hay; for any gentleman who has regard to the beauty of his land, had better give ſix times the price for ſuch ſeeds, as is uſually paid for the ordinary ſeeds, ſince the firſt expence of ſeeds is not to be put in competition with the beauty and advantage of having ſuch as are good; for when the land is brought to a good ſward, which may be done in one year, where it is properly prepared and ſown with good ſeeds, it may be kept in good order, and by good management improved annually, and will continue ſo as long as proper care is taken of it. I know ſome land which was ſown in the method hereafter directed above forty years ago, which are now as good paſtures as any I have ſeen, and may be always continued ſo.

Theſe grounds abounded with many bad weeds, ſo they had a winter and ſummer's fallow, in which time they were five times ploughed, and ten times harrowed in order to deſtroy the weeds, and make the ſurface of the ground fine; in auguſt they were ſown with the beſt Graſs-ſeeds as could be procured, three buſhels of this, and nine pounds of the white Dutch Clover-ſeeds were allowed to each acre; as there happened rains ſoon after the ſeeds were ſown, ſo the Graſs came up well; but among it were a great number of weeds, which were drawn up and carried off the ground, and in the beginning of october the fields were rolled with a barley roller; in the ſpring the fields were again weeded, and afterwards rolled, and that ſummer there was more than two tons of hay per acre mowed off the land; and by conſtant weeding twice a year, ſweeping it with a buſh-harrow, rolling and dreſſing of the land, the Graſs has been greatly improved ſince, and is now as good paſture as any in England: and ſince I have laid down great quantities of land in the ſame manner, and with equal ſucceſs, therefore from many years experience can recommend it, as the ſureſt method of having good paſtures.

But I know the generality of farmers will object to the firſt loſs of their crop, and alſo to the after expence of weeding, rolling, &c. as too great for common practice: however, I am well ſatisfied from experience, that whoever will be at the expence, will find their account in it; for the crops of hay will be ſo much better, and the after paſture alſo, that it will more than pay the expence, as from many exact accounts which have been kept of the whole, is ſufficiently demonſtrated, and the verdure of theſe paſtures is charming to all thoſe who have any taſte of natural beauties.

[It is wonderful, remarks the benevolent Stillingfleet, how long mankind has neglected to make a proper advantage of plants ſo important as Graſſes, and which in almoſt every country are the chief food of cattle. The grazier for want of diſtinguiſhing, and ſelecting Graſſes for ſeed, fills his paſtures either with weeds, or ſpecies improper for the ſoil; when by making a right choice, after ſome trials he might be ſure of the beſt graſs, and in the greateſt abundance that his lands admits of. At preſent, if he wants to lay down his land to graſs, he uſually takes his ſeeds indiſcriminately from a foul hay-rick: by which means, beſides a certain mixture of all ſorts of rubbiſh, if he ſhould chance to have a large proportion of good ſeed, it is not unlikely but that what he intends for dry land may come from ſuch as is moiſt, and the contrary.

On this occaſion ſome ſay, that if you manage your ground properly, good graſſes will come of themſelves. But the queſtion is, how long it will be before this happens; and why be at the expenſe of ſowing what you muſt afterwards try to deſtroy by manuring? which muſt be the caſe, ſo long as all kinds of rubbiſh are ſown under the name of hay-ſeeds. Again, if the beſt way be to let the ground take its chance, why is the farmer at the expenſe of procuring the ſeeds of White or Broad Clover, which come up in almoſt all parts of England ſpontaneouſly? But if this be allowed not to be the beſt way in relation to Clover of any ſort, what reaſon can be aſſigned why graſs-ſeeds only are not to be ſown pure?

Others ſay, that it is better to have a mixture of different ſeeds. Be it ſo. But is not a mixture by choice more likely to be proper than one by chance? Eſpecially after a ſufficient experience has been had of the particular qualities of each ſort, the kind of cattle each graſs is moſt adapted to, the different grounds where they will thrive beſt, &c. all which circumſtances are now in general little attended to, though of the utmoſt conſequence.

The ſowing of ſeed from a foul hay-rick is indeed ſuch a ſlovenly method of proceeding, as one would think could not poſſibly prevail univerſally; yet this is the caſe as to all Graſſes except the perennial Darnel or Ray-graſs. Now would the huſbandman be at the pains of ſeparating once in his life half a pint or a pint of the different kinds of graſs-ſeeds; and take care to ſow them ſeparately; in a very little time he would have wherewithal to ſtock his farm properly, according to the nature of each ſoil, and might at the ſame time ſpread theſe ſeeds ſeparately over the nation by ſupplying the ſeed-ſhops.

The number of Graſſes beſt adapted to cultivation is ſmall; perhaps half a dozen or half a ſcore at moſt; and how ſmall the trouble would be of collecting ſuch a number, and how great the benefit, muſt ſurely be obvious to every one at firſt ſight. Or if it be thought too great a labour to collect the ſeeds ſeparately, nothing can be more eaſy than to adopt the method recommended by Mr. Miller, of ſelecting patches in paſtures that are free from weeds, and where one of the beſt ſorts of graſs predominates, to let it ſtand till the ſeed is ripe, and then if it be of a ſort that ſheds the ſeed eaſily, to mow it early in the morning, and not to make it as hay, but only when it is dry on one ſide, to turn it over gently on the other, and to threſh it, if convenient, on the ſpot.

Mr. Stillingfleet, in his Obſervations on Graſſes, has ſelected eleven ſpecies, and given figures of them. 1. *Vernal Graſs*, common on dry hills, on ſound rich meadow land, and alſo in woods. It is very early, and likely to be a good graſs for ſheep paſtures. It is very eaſy to gather, for it ſheds its ſeeds upon the leaſt rubbing. It gives a grateful odour to hay. See *Anthoxanthum odoratum.*

2. *Meadow Fox-tail Graſs*, found in great plenty in the beſt meadows about London, and makes very good hay. Linneus ſays it is proper to ſow on grounds that have been drained. It may be gathered at any time of the year from hay-ricks, for it does not ſhed its ſeeds without rubbing. See *Alopecurus Pratenſis.*

3. *Fine Bent Graſs*, in great plenty on the beſt ſheep paſtures. See *Agroſtis capillaris.*

4. *Mountain Hair Graſs*, abundant alſo in ſimilar ſituations. See *Aira montana.*

5. *Silver Hair Graſs*, in the ſame kinds of paſtures. See *Aira caryophyllea.*

6. *Great Meadow Graſs*, which together with the narrow-leaved ſort is common in the beſt meadows, and makes both good paſture and hay. See *Poa pratenſis, anguſtifolia* and *compreſſa.*

7. *Annual Meadow Graſs*, makes the fineſt turf. It grows every where by way ſides, and on rich ſound commons. In ſome parts it is called *Suffolk Graſs.* See *Poa annua.*

8. *Sheep's Feſcue Graſs*, ſo much eſteemed for ſheep, and common on ſheep downs. See *Feſtuca ovina.*

9. *Purple Feſcue Graſs*, on ſheep downs, with fine bent and ſilver Hair-Graſs. See *Feſtuca rubra.*

10. *Flote Feſcue Graſs*, a very fattening graſs when growing in water. See *Feſtuca fluitans.*

11. *Creſted Dog's-tail Graſs*, proper for parks, and for ſheep, and making a fine turf upon dry, ſandy or chalky ſoils. See *Cynoſurus criſtatus.*

Beſides theſe, Mr. Stillingfleet mentions, but does not figure—

12. *Yellow Oat Graſs*, likely to be fit for ſheep, and not uncommon in good meadows. See *Avena flaveſcens.*

13. *Perennial Darnel* or *Ray Graſs*, well known, and cultivated all over England. See *Lolium perenne.*

The above graſſes come into ear between the beginning of may and the middle of june, in the following order.

1. Annual Meadow. 2. Meadow Fox-tail. 3. Vernal. 4. Great Meadow. 5. Narrow-leaved Meadow. 6. Creſted Dog-tail. 7. Sheep's Feſcue. 8. Purple Feſcue. 9. Fine Bent. 10. Marſh Bent. 11. Silver Hair. 12. Yellow Oat. 13. Flote Feſcue.

Mr. Curtis, who has beſtowed much attention, and tried many experiments on this ſubject, remarks, that although it is an opinion which has long prevailed among many of the more enlightened agriculturiſts of the preſent age, that much of our meadow and paſture land may be rendered far more valuable than it is at preſent, by the introduction of ſome of our beſt graſſes; that although Stillingfleet and others have endeavoured to excite the huſbandman to collect and cultivate graſs-ſeeds, by writings fraught with the ſoundeſt reaſoning; and the Society for the encouragement of Arts, Manufactures and Commerce have attempted to attract him by the offers of well-directed premiums: yet hitherto they have not been productive of the deſired effect; Ray-graſs, with very few exceptions, continuing ſtill to be the only graſs whoſe ſeeds can be purchaſed for laying down land.

This Graſs, not being ſuperior to all others, even inferior to ſome, and not being adapted to every ſoil and ſituation, Mr. Curtis has judiciouſly ſelected ſix of the beſt ſorts of Graſſes, adapted to ground of different quality. 1. Anthoxanthum vernum, or Sweet-ſcented Vernal-Graſs, figured in t. 1. The earlieſt of all our graſſes, next to Cynoſurus coeruleus: it will grow in any ſoil or ſituation; cattle are fond of it: but it is not ſo productive in point of crop as ſome others, and it yields the feweſt ſeeds.

2. Alopecurus pratenſis, or Meadow Fox-tail Graſs, figured in t. 2. Almoſt as early as the foregoing, much larger, and of quicker growth; conſequently much more productive; it ſhoots very rapidly after mowing, producing a very plentiful aftermath.

3. Poa pratenſis, or Smooth-ſtalked Meadow Graſs, figured in t. 3. The foliage ſhoots early, but the flowering-ſtems are not produced ſo ſoon, by a week at leaſt, as the foregoing. Where early graſs paſturage is deſired, it cannot better be obtained than by a combination of theſe three; if crop be an object, this will have the preference.

Smooth-ſtalked Meadow-Graſs rather affects a dry ſituation, and hence keeps its verdure in long-continued dry weather better than moſt others: it will grow on the top of a wall, but more luxuriantly in a rich meadow: it has a root which creeps like Couch Graſs, and is almoſt as difficult to extirpate; it ought therefore to be introduced with caution where the paſturage is not intended to be permanent.

4. Poa trivialis or Rough-ſtalked Meadow-Graſs, figured in t. 4. loves moiſture and a ſheltered ſituation; hence though few Graſſes are more productive or more adapted to hay or paſturage; it is tender, and liable to be injured by ſevere cold or exceſſive drought. It is a principal graſs in that uncommonly productive meadow near Saliſbury, mentioned by Stillingfleet, and more particularly deſcribed in the Memoirs of the Bath Agricultural Society, vol. 1. p. 94.

The ſeeds of theſe two Graſſes are apt to be entangled with each other, as if cobwebs had been intermixed with them, which makes it difficult to diſperſe them evenly in ſowing.

5. Feſtuca pratenſis, or Meadow Feſcue Graſs, figured in t. 5. comes neareſt to Ray Graſs, to which however it is much ſuperior. It is larger, and more productive of foliage; is ſtrictly perennial, very hardy, and will thrive not only in very wet, but alſo in dry ground; it produces more ſeeds than any of the others, which are eaſily gathered, and readily grow. The flowering ſtems are a fortnight or three weeks later than Meadow Fox-tail; yet it cannot be conſidered as a late Graſs, for moſt of the Agroſtis genus and Meadow Cat's-tail (Phleum pratenſe) flower at leaſt three weeks later.—Feſtuca elatior is very ſimilar to this, but much coarſer.

6. Cynoſurus criſtatus, or Creſted Dog's-tail Graſs, figured in t. 6. grows in dry ſituations, and will not thrive in wet meadows. It flowers about the ſame time as Meadow Feſcue Graſs, and is not very productive of foliage: the ſtems alſo are wiry, and the roots penetrating to no great depth, in dry ſummers it becomes little better than an annual. Its ſeeds may eaſily be collected where the graſs is fed, for the ſtalks are never touched by cattle.

Of the above ſix Graſſes the ſecond and fourth are fitteſt for moiſt land: the firſt and fifth for land moiſt, or moderately dry: the third and ſixth for dry paſture.

The order of their flowering is as follows: 1. Vernal. 2. Meadow Fox-tail. 3. Smooth-ſtalked Meadow. 4. Rough-ſtalked Meadow. 5. Meadow Feſcue. 6. Creſted Dog's-tail.

To theſe ſix Graſſes we may add: 7. Avena elatior or Tall Oat Graſs. Early, very productive, and producing a plentiful aftermath; in excellence approaching to Alopecurus pratenſis, for which it may prove no bad ſubſtitute.

8. Avena flaveſcens or Yellow Oat Graſs; affecting dry ſoils, rather early, and tolerably productive.

9. Bromus mollis or Soft Brome Graſs: as an early Graſs it might perhaps be cultivated to advantage; but with other graſſes it ſheds the ſeeds and withers, before the whole is ready for mowing.

10. Cynoſurus cæruleus or Blue Dog's-tail Graſs, is the earlieſt of all our graſſes, but not productive, or of a good quality.

11. Dactylis glomeratus, or Rough Cock's-foot Graſs, a rough coarſe Graſs, extremely hardy and productive, common in orchards and meadows, and rather early.

12. Feſtuca ovina or Sheep's Feſcue Graſs; native of dry elevated heaths and commons; unproductive, with hard and wiry foliage; a ſmall plant even in a rich moiſt ſoil.

13. Hordeum murinum, Wall Barley Graſs, or Squirrel-tail Graſs. Common by walls and the ſide of paths. Among Hay very injurious to horſes, by the awns or beards of the ears ſticking in their mouths.

14. Hordeum pratenſe or Meadow Barley Graſs; taller and more delicate; ſometimes forming great part of the crop in good meadows; neither early nor very productive: it may poſſibly have the ſame bad quality as the foregoing.

15. Holcus lanatus, or Meadow Soft Graſs. Hardy and productive; flowering a month later than the Anthoxanthum; foliage ſoft and woolly.

16. Holcus mollis, or Creeping Soft Graſs. Grows well in ſandy ſoils, and bears drought.

17. Lolium perenne, or Ray Graſs, wiry with little foliage in upland paſtures; but in rich meadows its foliage is abundant and of rapid growth.

18. Poa annua, or Dwarf Meadow Graſs; perpetually flowering and ſeeding moſt rapidly, unleſs prevented by cold; growing in almoſt any ſoil and ſituation, but never acquiring any great height; its foliage tender and grateful to cattle, but liable to be killed by winter's froſt, and ſummer's drought.

19. Phleum pratenſe, or Meadow Cat's-tail Graſs, imported from America under the name of Timothy Graſs; in wet ſituations very productive, but coarſe and late; it has no excellence which Alopecurus pratenſis does not poſſeſs in an equal or ſuperior degree.

20. Triticum repens, Creeping Wheat Graſs, Quick, Quich or Couch Graſs. Too well known to farmers and gardeners as a moſt troubleſome weed. Its foliage is early.

Directions for ſowing Graſs Seeds.

Having gathered the ſpikes or panicles of any among the above graſſes which you are deſirous of cultivating, when they are ſufficiently ripe, and having threſhed or rubbed out the ſeeds; ſow them the end of auguſt or beginning of ſeptember, in rows nine or twelve inches apart, on a piece of clean ground, well dug, levelled and raked; cover the drills over lightly: if the weather be not uncommonly dry, the ſeeds will quickly vegetate, and the only attention they will require will be to weed them carefully: in a fortnight ſuch as are too thick may be thinned, and thoſe which are taken up tranſplanted, to make more rows of the ſame graſs.

During the firſt dry weather in the ſpring roll or tread the rows down, to fix the roots, which are generally looſened by the froſt, and weed them. As the ſpring advances, many of them will throw up their flowering ſtems, and ſome will continue to do ſo all the ſummer. As the ſeed ripens, gather it carefully, and ſow it in the autumn, at which time the roots of the original plants, which will now bear ſeparating, may be divided and tranſplanted; and thus by degrees a large plantation of theſe graſſes may be formed, particularly of the ſmooth-ſtalked Meadow-graſs, which creeps very much at the root.

While the ſeeds are thus increaſing, the ground to be laid down may be got in order, either by paring and burning, or by ploughing and harrowing, burning the roots of Quich and other weeds. Some cleanſing crop, as Potatoes, Turneps, Tares, &c. will contribute to bring the ground into order for this purpoſe, if otherwiſe not ſufficiently clean.

The land may now be ſown with Graſs ſeeds in the following proportion. Meadow Fox-tail and Meadow Feſcue, each one pint. Smooth-ſtalked and Rough-ſtalked Meadow, each half a pint. Creſted Dog's-tail and Vernal, each a quarter of a pint. Dutch or White Clover, and either Wild Red or Broad Clover, each half a pint. For wet or ſtrong land Creſted Dog's-tail and Smooth-ſtalked Meadow may be omitted, eſpecially the former.

Such a compoſition as this, ſown in the proportion of three buſhels to an acre, on a ſuitable ſoil, in a favourable ſituation, will in two years form a moſt excellent meadow; and being made up of hardy perennials, their places will not eaſily be uſurped by any noxious plants, which may be brought in by dung or any other means[*].

For farther information on the management of graſs land, ſee Meadow and Pasture.

Grass, Arrow-headed. See *Triglochin.*
——— Barley. See *Hordeum.*
——— Bent. See *Agroſtis.*
——— Brome. See *Bromus.*
——— Canary. See *Phalaris.*
——— Cat's-tail. See *Phleum.*
——— Cock's-foot. See *Dactylis.*
——— Cotton. See *Eriophorum.*
——— Couch. See *Triticum.*
——— Darnel. See *Lolium.*
——— Dog's. See *Triticum.*
——— Dog's-tail. See *Cynoſurus.*
——— Feather. See *Stipa.*
——— Feſcue. See *Feſtuca.*
——— Five-leaved. See *Potentilla reptans.*
——— Fox-tail. See *Alopecurus.*
——— Hair. See *Aira.*
——— Hard. See *Dactylis.*
——— Hard, Sea. See *Ægilops* or *Rottboellia.*
——— Knot. See *Polygonum.*
——— Lyme. See *Elymus.*
——— Manna. See *Feſtuca fluitans.*
——— Marl. See *Trifolium flexuoſum.*
——— Mat. See *Nardus.*
——— Meadow. See *Poa.*
——— Melic. See *Melica.*
——— Millet. See *Milium.*
——— Oat. See *Avena.*
——— Orchard. See *Dactylis.*
——— Panic. See *Panicum.*
——— Pepper. See *Pilularia.*
——— Quaking. See *Briza.*
——— Quich or Quick. See *Triticum.*
——— Ray. See *Lolium.*
——— Reed. See *Arundo.*
——— Rye. See *Hordeum ſecalinum.*
——— Scurvy. See *Cochlearia.*
——— Soft. See *Holcus.*
——— Spiked. See *Triglochin.*
——— Spring. See *Anthoxanthum.*
——— Three-leaved. See *Trifolium.*
——— Timothy. See *Phleum pratenſe.*
——— Vernal. See *Anthoxanthum.*
——— Vetch. See *Lathyrus Niſſolia.*
——— Viper's. See *Scorzonera.*
——— Wheat. See *Triticum.*
——— Wrack. See *Zoſtera.*]

GRATIOLA. (*Dimin. from gratia; on account of its ſuppoſed medicinal good qualities.*) *Lin. gen. n.* 29. *Reich.* 30. *Schreb.* 36. *Gronov.* 6. *Gærtn. t.* 53. *Juſſ.* 121. Moniera. *Brown. jam. t.* 28. *f.* 3. *Ehret. t.* 14.

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[*] Curtis's Practical Obſervations on Britiſh Graſſes, Lond. 1790. 8°.

Claſſ. 2. 1. Diandria Monogynia.
Nat. order of *Perſonatæ.—Scrophulariæ.* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* five-parted, upright: *ſegments* awl-ſhaped, permanent.

Cor. monopetalous, unequal: *tube* longer than the calyx: *border* four-parted, ſmall; the upper ſegment broader, emarginate, reflex, the reſt ſtraight, equal.

Stam. *Filaments* four, awl-ſhaped, ſhorter than the corolla, the two lower ſhorter than the others, and barren; the two upper faſtened to the tube of the petal. *Anthers* roundiſh.

Pist. *Germ* conic. *Style* ſtraight, awl-ſhaped. *Stigma* two-lipped, after fecundation converging.

Per. *Capſule* ovate, acuminate, two-celled, two-valved.

Seeds very many, ſmall.

Obs. *The eſſence of the character conſiſts in the two barren anthers.*

G. Monnieria *has anthers to all the filaments, and a capitate ſtigma.*—G. rotundifolia *has a compreſſed, roundiſh capſule, and two ſtamens.*—G. officinalis *has ſeven leaves to the calyx, the two outer patulous.*

ESSENTIAL CHARACTER.

Cal. ſeven-leaved, the two outer leaves patulous. *Cor.* irregular, reverſed. *Stam.* two, barren. *Capſ.* two-celled.

SPECIES.

1. Gratiola officinalis. *Officinal Gratiola,* or *Hedge-Hyſſop, Water-Hyſſop.*
Lin. ſpec. 24. *Reich.* 1. 47. *mat. med.* 38. *Woodv. med. bot.* 132. *t.* 47. *Hall. helv. n.* 329. *Scop. carn. n.* 27. *Pollich pal. n.* 23. *Krock. ſileſ. n.* 37. *Allion. pedem. n.* 261. *Fl. dan. t.* 363. *Sabb. hort.* 2. *t.* 87. *Jungh. offic. cent.* 1. *f.* 4. *Plenck, ic. t.* 15.
Gratiola. *Rivin. mon. t.* 157. *Blackw. t.* 411. *Ger.* 466. *emac.* 581. 1. *Bauh. hiſt.* 3. 434. *t.* 435. *Raii hiſt.* 1885.
G. centauroides. *Bauh. pin.* 279.
G. vulgaris. *Park. theat.* 220. 1. *Mor. hiſt.* 2. 479. *n.* 7. *ſ.* 5. *t.* 8. *f.* 7.
β. G. alpina. *Bauh. hiſt.* 3. 435. *Raii hiſt.* 1885.
Leaves lanceolate ſerrate; flowers peduncled.

[2. Gratiola Monnieria. *Thyme-leaved Gratiola.*
Lin. ſpec. 24. *ſyſt.* 64. *Reich.* 1. 47. *amæn.* 4. 306. *Jacqu. obſ.* 4. *t.* 1. *Swartz obſ.* 15.
Moniera. *Brown. jam.* 269. *Ehret. pict. t.* 14. *f.* 2.
Anagallis cœrulea, &c. *Sloan. jam.* 1. 203. *t.* 129. *f.* 1.
Leaves oval-oblong, peduncles one-flowered, ſtalk creeping.

3. Gratiola repens. *Creeping Gratiola.*
Swartz prodr. 14.
Leaves ovate, ſtem creeping, calyx five-leaved, ſtyle bifid.

4. Gratiola rotundifolia. *Round-leaved Gratiola.*
Lin. ſyſt. 64. *Reich.* 1. 47. *mant.* 174. *Rheed. mal.* 9. 111. *t.* 57.
Leaves ovate three-nerved.

5. Gratiola hyſſopioides. *Hyſſop-leaved Gratiola.*
Lin. ſyſt. 64. *Reich.* 1. 48. *mant.* 174. *Retz. obſ.* 4. 8. *n.* 6. *Pluk. alm. t.* 193. *f.* 2. *Lour. cochinch.* 22?
Leaves ovate-lanceolate ſubſerrate much ſhorter than the internodes.]

6. Gratiola virginica.
Lin. ſpec. 25. *ſyſt.* 64. *Reich.* 1. 48. *mant.* 317. *Gærtn. fruct.* 1. 251. *Pluk. alm. t.* 193. *f.* 2. *Rheed. mal.* 9. 165. *t.* 85.
Leaves lanceolate obtuſe ſomewhat toothed.

7. Gratiola peruviana.
Lin. ſpec. 25. *Reich.* 1. 48. *Feuill. peruv.* 3. *t.* 47.
Flowers ſubſeſſile.

[8. Gratiola Lobelioides.
Retz. obſ. 4. 7. *n.* 2.
G. rugoſa. *Lour. cochinch.* 23.
Stem almoſt naked, ſtipuled, leaves oblong quite entire, panicle dichotomous, capſules ſubglobular.

9. Gratiola grandiflora. *Great-flowered Gratiola.*
Retz. obſ. 4. 8. *n.* 3.
Stems decumbent, leaves ovate ſerrate, peduncles oppoſite, capſules ſubulate.

10. Gratiola veronicifolia. *Veronica-leaved Gratiola.*
Retz. obſ. 4. 8. *n.* 4.
Ruellia antipoda. *Lin. mant.* 422. *Rumph. amb.* 5. 460. *t.* 170. *f.* 2.
Stem creeping, leaves ovate-lanceolate ſharply ſerrate, flowers terminating oppoſite.

11. Gratiola oppoſitifolia.
Retz. obſ. 8. *n.* 5.
Stem aſcending, leaves lanceolate ſerrate, peduncles oppoſite to the leaves.

12. Gratiola ſtricta.
Lour. cochinch. 23.
Leaves ovate, ſpike long terminating.

DESCRIPTIONS, &c.

1. *Root* perennial, creeping, thick, fleſhy, with many ſlender fibres. *Stalks* ſeveral, upright, a foot or more in height, ſmooth, jointed. *Leaves* oppoſite, ſeſſile, pointed, bright green, ſmooth, two inches long, and two lines or more in breadth, with a few ſmall ſerratures towards the end. *Flowers* ſolitary, axillary, upright, on peduncles half an inch long, appearing in june or july, and continuing to auguſt: calyx uſually ſeven-cleft: corolla ſhaped like that of the Foxglove; but ſmall and of a pale yellowiſh colour, or pale purple with red ſtreaks; ſometimes white: the throat is hairy.

Native of the South of Europe, in paſtures, uſually ſuch as are moiſt. Common in many parts of Switzerland, Carniola, Auſtria, in the Palatinate, Sileſia, France, about Turin, Padua, and in other parts of Italy.

It has a ſtrong bitter nauſeous taſte, and is much recommended by ſeveral eminent medical writers in dropſical caſes. It is a powerful cathartic, but is ſaid generally to occaſion vomiting.

On account of its bitterneſs, cattle reject it; inſomuch that Haller aſſures us there are meadows about Yverdun entirely uſeleſs from the abundance of this plant.

It was cultivated in our gardens as early at leaſt as 1568[a].

2. *Root* jointed, creeping, with ſmall fibres. *Stalk* herbaceous, inclined to be ſimple, round, leafy, ſmooth, ſomewhat erect, declining at bottom. *Leaves* ſubſeſſile, oppoſite, oblong or obovate, entire, ſmooth, nerveleſs, ſomewhat ſucculent. *Peduncles* longer than the leaves, filiform, ſolitary, axillary, one-flowered. *Calyx* ſeven-leaved; the three outer leaflets ſubcordate, acuminate, converging, the two inner linear, acute, pale, when the corolla falls embracing the germ, the two outmoſt lower, lanceolate, ſpreading. *Corolla* blue, inclined to bell-ſhape, a little flatted, five-cleft; the diviſions nearly equal; the three upper ovate, ſpreading; the two lower converging, ſomewhat bent down. *Filaments* two, ſhorter by half than the other two: *anthers* ovate, blue[b].

This ſmall, creeping plant ſticks very cloſe to the ground, and caſts a few ſlender fibres from every joint, as it creeps. The whole plant ſeldom exceeds ſeven or eight inches in length, but it generally grows in beds, and ſpreads thick upon the ground, throwing out a few ſimple ſide-branches, which give it a pretty appearance when it flowers, and make it exceedingly remarkable[c].

Native both of the Eaſt and Weſt Indies, and the South Sea iſlands: in low moiſt ſoils. It was introduced in 1772, by Monſ. Richard; and flowers from july to ſeptember[d].

The name of *Monnieria* was given to this plant in honour of Dr. De Monier by Monſ. Bernard de Juſſieu, who raiſed it in the botanic garden at Paris.

3. Native of Jamaica[e].

4. Stems a finger high, quadrangular, ſmooth, creeping at the baſe. Leaves oppoſite, ſeſſile, obtuſe, ſmooth, with one or two obſcure ſerratures. Peduncles axillary, ſolitary, naked, alternate, one-flowered, longer than the leaves. Calyx five-parted. Stamens two. Capſules compreſſed, roundiſh.

Native of Malabar, in ſandy grounds[f].

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[a] Hort. kew. from Turner's herbal, part 3. fol. 33.
[b] Swartz obſ. [c] Browne. [d] Hort. kew. [e] Swartz.
[f] Linn. mant.

5. Annual. Stem filiform, upright, ſmooth, a foot high. Leaves oppoſite, ſeſſile, ſmooth, with a ſerrature or two on the loweſt. Peduncles axillary, alternate, ſolitary, one-flowered, ſeveral times longer than the leaves. Calyx very ſmall. Corolla much larger than the leaves, ringent[g]. Leaves uſually ovate, eſpecially the lower ones. The proportion of theſe to the internodes gives no conſtant character[h].

Native of the Rice-grounds of Tranquebar, in the Eaſt Indies.

6. Stem procumbent, varying much in ſize. Leaves oppoſite, ſeſſile, ſerrate towards the tip; ſometimes trifid. Peduncles axillary, one-flowered. Capſule twice as long as the calyx, with the ſtyle permanent[i]. Calyx five-parted, with two acceſſory leaflets at the baſe. Capſule ſubglobular, with a furrow on each ſide; the valves often bifid at the tip. Partition ſimple, parallel to the valves, and inſerted into their ſuture[k].]

The corolla is white, and the flowers are not followed by ſeeds in England. It grows naturally in North America, in moiſt places, where it riſes more than a foot high, but here not more than eight inches. [It is alſo native of Malabar.

Mr. Miller cultivated it in 1759.]

7. This plant grew here about nine inches high, with a weak ſtalk. Leaves oppoſite, ſerrate, three quarters of an inch long, and half an inch broad. The flowers come out ſingle on each ſide the ſtalk, they are white and much ſmaller than thoſe of the common ſort. Mr. Miller received the ſeeds from Carthagena in New Spain, where it was found in places where there had been ſtanding waters, which were then dried up. [He cultivated it in 1759; but the ſeeds not ripening it was ſoon loſt.

8. Roots numerous, in bundles, ſhort, ſimple. Stalk ſimple, upright, round, having an obſcure, broad furrow on each ſide, ſlightly ſtreaked, ſmooth, with five ſtipuled joints, a foot high. Leaves above the ſecond or third pair oppoſite, ſeſſile, upright, with the tips a little bowed back, acute, ſlightly ſtreaked, ſmooth on both ſides, an inch long, ſometimes coloured at the baſe, eſpecially underneath. Stipules two oppoſite, growing cloſe at the joints, ſeſſile, half ovate, preſſed cloſe, acute, quite entire, ſmooth, ſomewhat fleſhy, greener than the ſtalk and leaves, ſmall. Panicle terminating, lax, thin, with peduncles moſtly ſimple, alternate, remote, round, ſmooth, or ſometimes with a few ſcattered hairs, ſlender, nearly equal, with bractes at the baſe, reddiſh green. Pedicels longer than the flower. Bractes like the ſtipules, only a little narrower, ſmall. Flowers inferior. Calyx bell-ſhaped, ſmooth, ſmall, ſhorter than the tube of the corolla; ſegments preſſed cloſe, oblong, unequal, the two upper ones a little larger, more rounded at the tip. Corolla, tube ſtreaked with a darker colour: border bell-ſhaped, the upper ſegment ſcarcely aſcending, obcordate, flattiſh, ſhorter than the others, blue, the ſide ones ſtraight, obliquely retuſe at the ends, a little longer than the upper one, and of the ſame colour, the lower one ſpreading, obcordate, flattiſh, adorned with a white heart-ſhaped ſpot and a few blue dots, and twice as large as the others; throat naked, a little flatted. Filaments two remote, within the throat, growing to the tube, upright at the baſe, a little twiſted at the tips, ſmooth, ſhort, browniſh-green, having a beard of ſhort ſilky white hairs at the baſe: anthers connate, each double and before flowering time diſtinct; each part oblong, upright, ſharp at both ends, yellow, two-celled: between theſe are the rudiments of two other ſtamens cloſe together, flat, running ſtraight down, very minutely bearded with ſnow-white hairs, ſometimes hardly diſtinguiſhable. Germ ſuperior, ovate, ſmooth, with a ſmall furrow on each ſide. Stigma below the anthers, peltate, ſuborbiculate, large, a little concave, ſmooth, entire in front, but having two notches behind; between the notches are twin callous ſtraight toothlets; cloſe to each tooth a white hardiſh callus. Capſule ſmooth, with a ſmall furrow, twice as long as the calyx: ſeeds oblong, ſharp at both ends, a little wrinkled, faſtened to a two-parted receptacle. Very common near Tranquebar, in rice fields[l].

9. Stems bifid, angular, ſmooth. Leaves oppoſite, ſerrate, often crenate, ſmooth. Flowers large in proportion to the other parts. Capſules long.

Native of Tranquebar, Madras, Siam, Malacca, in moiſt fat ſoils.

10. Stems angular, diffuſed, procumbent. Leaves oppoſite, ſeſſile. Flowers ſmall, deep blue, bracted and peduncled. Calyx five-cleft, linear. Capſule ſubulate.—With the foregoing.

11. Stems ſeldom upright, quadrangular, ſtreaked. Leaves naked, the lower ones oppoſite; the axils uſually branch-bearing; the upper ones alternate. Capſules long, ſubulate.

Native of Tranquebar in rice-grounds and moiſt places[m].

12. Stem ſuffruticoſe, quite ſimple, erect, a foot and half high. Leaves acuminate, ſubſerrate, flat, ſmooth, oppoſite. Flowers white dotted with red, ſeſſile, in a ſimple erect ſpike. Calyx none except a triple bracte under the flower. Corolla with a long ſlender angular tube, and a two-lipped, five-cleft ſpreading border. Capſule oblong, acuminate, ſinuate in the middle, compreſſed, two-ſeeded.

Native of Cochinchina[n].]

PROPAGATION AND CULTURE.

The firſt and fifth ſorts are eaſily propagated by parting the roots in autumn, when the ſtalks decay; the plants ſhould have a moiſt ſoil and a ſhady ſituation, for in dry ground they often decay in ſummer, unleſs they are plentifully watered. [The other ſorts are natives of hot climates, and little known in Europe.

Gratiola. See *Hottonia indica*, *Lindernia*, *Mimulus*.

Gratiolæ affinis. See *Capraria*, *Dianthera*, *Juſticia*.]

GRAVEL and Graſs are the glory of Engliſh gardens, and things in which we excel all other nations.

There are different ſorts of Gravel, but for thoſe who can conveniently have it, I approve of that Gravel on Blackheath, as preferable to moſt that we have in England; it conſiſting of ſmooth even pebbles, which, when mixed with a due quantity of loam, will bind exceeding cloſe, and look very beautiful, and continue handſome longer than any other ſort of Gravel which I have yet ſeen.

Some recommend a ſort of iron-mould Gravel, or Gravel with a little binding loam amongſt it, than which nothing, they ſay, binds better when it is dry; but in wet weather it is apt to ſtick to the heels of one's ſhoes, and will never appear handſome.

Sometimes loam is mixed with Gravel that is over ſandy or ſharp, which muſt be very well blended together, and let lie in heaps, after which it will bind like a rock.

There are many kinds of Gravel which do not bind, and thereby cauſe a continual trouble of rolling, to little or no purpoſe; as for ſuch,

If the Gravel be looſe or ſandy, you ſhould take one load of ſtrong loam, to two or three of Gravel, and ſo caſt them well together, and turn this mixture over three or four times, that they may be well blended together; if this is done in proper proportion, it will bind well, and not ſtick to the feet in wet weather.

There are many different opinions about the choice of Gravel; ſome are for having the Gravel as white as poſſible, and in order to make the walks more ſo, they roll them well with ſtone rollers, which are often hewn by the maſons, that they may add a whiteneſs to the walks; but this renders it very troubleſome to the eyes, by reflecting the rays of light ſo ſtrongly, therefore this ſhould ever be avoided; and ſuch Gravel as will lie ſmooth, and reflect the leaſt, ſhould be preferred.

Some ſcreen the Gravel too fine, which is an error; for if it be caſt into a round heap, and the great ſtones only raked off, it will be the better.

Some are apt to lay Gravel-walks too round, but this is likewiſe an error, becauſe they are not ſo good to walk upon, and beſides, it makes them look narrow; one inch riſe is enough in a crown for a walk of five feet; and it will be ſufficient, if a walk be ten feet wide, that it lies two inches higher in the middle than it does on each ſide; if fifteen feet, three inches; twenty feet, four; and ſo in proportion.

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[g] Linn. mant.

[h] Retz.

[i] Linn. mant.

[k] Gærtner.

[l] Koenig in Retz.

[m] Retz.

[n] Loureiro.

For the depth of Gravel-walks, ſix or eight inches may do well enough, but a foot thickneſs will be ſufficient for any; but then there ſhould always be a depth of rubbiſh laid under the Gravel, eſpecially if the ground is wet; in which caſe there cannot be too much care to fill the bottom of the walks with large ſtones, flints, brick rubbiſh, chalk, or any other materials which can be beſt procured, which will drain off the moiſture from the Gravel, and prevent its being poachy in wet weather; but as it may be difficult in ſome places to procure a ſufficient quantity of theſe materials to lay in the bottom of the walks, ſo there may be a bed of Heath, or Furze, which ever can be procured at the leaſt expenſe, laid under the Gravel to keep it dry: and if either of theſe are uſed green, they will lie a long time, as they will be covered from air, and theſe will prevent the Gravel from getting down into the clay, and will always keep the Gravel dry; and where there is not this precaution in the firſt laying of the Gravel upon clay, the water being detained by the clay, will cauſe the Gravel to be poachy whenever there is much rain.

In making of Gravel-walks, there muſt be great regard had to the level of the ground, ſo as to lay the walks with eaſy deſcents towards the low parts of the ground, that the wet may be drained off eaſily; for when this is omitted, the water will lie upon the walks a conſiderable time after hard rains, which will render them unfit for uſe, eſpecially when the ground is naturally wet or ſtrong; but where the ground is level, and there are no declivities to carry off the wet, it will be proper to have ſink-ſtones laid by the ſides of the walks, at convenient diſtances, to let off the wet; and where the ground is naturally dry, that the water will ſoon ſoak away, the drains of the ſink-ſtones may be contrived ſo as to convey the water in ſeſſpools, from which the water will ſoak away in a ſhort time; but in wet land there ſhould be under-ground drains, to convey the wet off, either into ponds, ditches, or the neareſt place to receive it; for where this is not well provided for, the walks will never be ſo handſome or ſo uſeful.

The month of march is the propereſt time for laying Gravel; it is not prudent to do it ſooner, or to lay walks in any of the winter months before that time.

Some indeed turn up Gravel-walks in ridges in december, in order to kill the weeds; but this is very wrong, for beſides that it deprives them of the benefit of them all the winter, it does not anſwer the end for which it is done, but rather the contrary; for though it does kill the weeds for the preſent, yet it adds a fertility to them, as to the great future increaſe of both them and Graſs.

If conſtant rolling them after the rains and froſt will not effectually kill the weeds and moſs, you ſhould turn the walks in march, and lay them down at the ſame time.

In order to deſtroy worms that ſpoil the beauty of Gravel, or Graſs-walks, ſome recommended the watering them well with water in which Walnut-tree leaves have been ſteeped, and made very bitter, eſpecially thoſe places moſt annoyed with them; and this they ſay, as ſoon as it reaches them, will make them come out haſtily, ſo that they may be gathered; but if, in the firſt laying of the walks, there is a good bed of lime rubbiſh laid in the bottom, it is the moſt effectual method to keep out the worms, for they do not care to harbour near lime.

[Greek Valerian. See *Polemonium.*

GREENHOUSE and CONSERVATORY.

Theſe are buildings erected on the beſt principles (*ſee the Plans*) for protecting and preſerving ſuch ſorts of plants as are too tender to live in the open air.

Greenhouſe.

The Greenhouſe was originally a room in a garden, not far from the houſe, facing the ſouth, and having large windows from top to bottom, built for the reception of Oranges, Myrtles, and a few other plants which were brought from temperate climates. This building had no flues or contrivances of any ſort for increaſing the natural heat, but the air of the room was warmed merely by the ſun.

A greater variety of curious exotic plants having been introduced into the Engliſh gardens ſoon after the middle, and towards the end of the laſt century, flues were added to the Greenhouſe, and many improvements in the ſtructure and contrivance of it were adopted.]

As to the length of the Greenhouſe, ſays Mr. Miller, it muſt be proportioned to the number of plants it is to contain, or the fancy of the owner; but the depth ſhould never be greater than the height in the clear, which in ſmall or middling houſes may be ſixteen or eighteen feet, but for large ones from twenty to twenty-four feet is a good proportion: for if the Greenhouſe be long and too narrow, it will have a bad appearance both within and without, nor will it contain ſo many plants, if proper room be allowed for paſſing in front, and at the back of the ſtands on which the plants are placed; and on the other hand if the depth of the Greenhouſe be more than twenty-four feet, there muſt be more rows of plants placed to fill the houſe, than can with conveniency be reached in watering and cleaning; nor are houſes of too great depth ſo proper for keeping of plants as thoſe of moderate ſize.

The windows in front ſhould extend from about one foot and a half above the pavement, to within the ſame diſtance of the cieling, which will admit of a cornice round the building over the heads of the windows. As it is neceſſary to have theſe windows ſo long, it will be impoſſible to make them in proportion as to their breadth; for if the ſaſhes be more than ſeven or ſeven feet and a half broad, they will be troubleſome to move up and down, and their weight will occaſion them to decay very quickly. The piers between the windows ſhould be as narrow as is conſiſtent with their neceſſary ſtrength to ſupport the building; for which reaſon ſtone is preferable, or hard well-burnt bricks. If theſe piers are made of ſtone, they ſhould be two feet and a half in diameter, worked as columns cylindrical, whereby the rays of the ſun will not be obſtructed ſo much as if they were ſquare: but if they are built of bricks, it will be proper to make them three feet in front; and they may be ſloped off towards the inſide to admit the ſun.

If a houſe for tools, &c. be erected at the back of the Greenhouſe, the back wall need not be more than two bricks and a half in thickneſs; but if not, it muſt be three bricks or three bricks and a half thick, to keep out the froſt.

The floor of the Greenhouſe may be laid with Bremen ſquares, Purbeck ſtone, or broad tiles; and muſt be raiſed two feet above the ground, where the ſoil is dry; but if the ſituation be moiſt and ſpringy, the floor ſhould be raiſed at leaſt three feet above the ſurface; and if the whole be arched with low brick arches under the floor, it will be of great ſervice in preventing the damps riſing in winter, which are often very hurtful to the plants, eſpecially in great thaws, when the air is often too cold to be admitted into the houſe, to take off the damps. Under the floor, about one foot from the front, a flue one foot in width, and two feet in depth, may be carried the whole length of the houſe, which may be returned againſt the back wall, and carried up in proper funnels adjoining to the tool houſe, three times over each other, by which the ſmoke may paſs off. The fire-place may be at one end of the houſe, and the door at which the fuel is put in, as alſo the aſh-grate, may be contrived to open into the tool-houſe, ſo that it may be quite hid from ſight and be dry; the fuel alſo may be laid in the ſame ſhed, and thus will always be ready for uſe.

The wall on the back part of the houſe ſhould be either laid over with ſtucco, or plaſtered with mortar and white-waſhed, to keep out the froſt, which will penetrate through the walls, eſpecially when it is attended with a ſtrong wind.

To prevent froſt from penetrating through the roof, reeds, heath or furze ſhould be laid between the cieling and the tiles; and care ſhould be taken in framing the joints that the weight may not lie upon the cieling; for they ſhould be laid a foot thick at leaſt, as ſmooth as poſſible, and faſtened down well with laths to prevent their riſing, and then covered over with a coat of lime and hair, which will keep out the air, and alſo prevent mice and other vermin from harbouring in them, which, if left uncovered, they would certainly do.

In the Greenhouſe there ſhould be treſſels, which may be moved in and out, upon which rows of planks ſhould be fixed, ſo as to place the pots or tubs of plants in regular rows one above another, whereby the heads of the plants may be ſo ſituated, as not to interfere with each other. The loweſt row of plants, or forwardeſt towards the windows, ſhould be placed about four feet from them, that there may be a convenient breadth left next the glaſſes to walk in front; and the rows of plants ſhould riſe gradually from the firſt, in ſuch a manner that the heads of the ſecond row ſhould be entirely advanced above the firſt, the ſtems only being hid; and at the back of the houſe there ſhould be allowed a ſpace of at leaſt five feet, for the conveniency of watering the plants, and to admit a current of air round them, that the damps occaſioned by the perſpiration of the plants may be the better diſſipated, which by being pent in too cloſely often occaſions a mouldineſs upon the tender ſhoots and leaves, and when the houſe is cloſe ſhut up, this ſtagnating rancid vapour is often very deſtructive to the plants; for which reaſon alſo they ſhould never be crowded too cloſe to each other, nor ſhould ſucculent plants ever be placed among them.

[The plants are put into the Greenhouſe in october, or as ſoon as the morning and evening froſts come on. In this ſituation they remain till the end of may or the middle of june, according to the ſeaſon, when they are removed to the place where they are to ſtand through the ſummer. Much of their growth and ſucceſs depends upon the choice of a ſheltered and convenient ſituation for them at this ſeaſon: it muſt not be expoſed to the meridian ſun, nor to the weſt or north winds, both which are extremely hurtful to them when firſt expoſed, and again in the autumn. Here they muſt be refreſhed with frequent waterings in dry weather at leaſt three times a week.

Before the plants are removed out of the Greenhouſe it is neceſſary to ſhift at leaſt all the ſmall plants: that is, to take them out of their pots, to cut off part of their roots round the ball of earth, and to put them again into the ſame pot if the plant is not in a healthy ſtate; or, if it is, into one a ſize larger; ſhortening the irregular ſide branches as they may require, and tying them up neatly.

The mould into which the plants are to be ſhifted is of conſiderable importance. The beſt is to be obtained from commons where ſheep and cattle paſture, particularly in low places, where the fineſt graſs grows, and the ſoil is deepeſt. A foot of the top ſoil with the turf may be taken off, and if it be a ſandy or hazel loam it will do alone; but if it be a ſtrong loam, ſome ſand and black peaty or mooriſh ſoil ſhould be added. Such ſoils, laid in a heap for at leaſt ſix of the winter months, and frequently turned over, will ſuit moſt Greenhouſe plants.

Aloes, Meſembryanthemums, Ixias and ſuch Liliaceous plants in general as are inhabitants of Exotic houſes and Glaſs caſes, require a ſoil which is a degree lighter, and which will not retain the water, but let it paſs readily; and a little coal aſhes at the bottom of each pot may be uſeful for this purpoſe.

The great number of Ericas or Heaths and other beautiful plants from the Cape of Good Hope, from America and Botany Bay delight and flouriſh in that ſort of earth which comes neareſt to their native ſoil. Thus the Heaths like a black peat or mooriſh ſoil; and the others that which is made a degree ſtronger with loam.

A Plan and Elevation of the Greenhouſe, according to the lateſt modern improvements is given on the plate which accompanies this article, from a drawing made by Mr. Malcolm: in which

A is the Elevation.
B The Section of the weſt end.
C C are the fire-places in the ground plan.
D D the funnels of the Chimney.
E is the back wall.
F F the inſide of the Greenhouſe, where the Stages are to be erected.
G G are the Flues running under the footpath; with the manner in which they divide and paſs into the funnels of the chimney.
H is the front wall.

The dimenſions of the whole and all the parts are laid down exactly by a ſcale. The pediments, pilaſters, columns, pateras, and other ornamental parts are to be of ſtone. On the top of the centre of each of the three end windows on each ſide of the pediment there ſhould be a key-ſtone, with a head or other device; and from the pediment over each of the three windows there ſhould be a feſtoon of flowers tied up over the centre of the windows. The pateras in the weſt end ſhould be ornamented.

Conſervatory.

Greenhouſe and Conſervatory have been generally conſidered as ſynonimous terms for a houſe of a certain conſtruction, deſtined to the preſervation of exotic plants through the winter. Their eſſential difference is this. In the Greenhouſe, the trees and plants are either in tubs or pots; and are placed on ſtands or ſtages through the winter, till they are removed into ſome ſheltered ſituation abroad for the ſummer. In the Conſervatory, the ground plan is laid out in beds and borders, made up of the beſt compoſitions of ſoils that can be procured, three or four feet in depth. In theſe the trees and plants, taken out of their tubs or pots, are regularly planted, in the ſame manner as hardy plants are in the open air. Inſtead of taking out the plants in ſummer, as in the Greenhouſe, the whole of the glaſs roof is taken off, and the plants are thus expoſed to the open air; and at the approach of autumn froſts the lights are again put on, and remain ſo till the may or june following.

It is evident that the building here called a Conſervatory may alſo be uſed as a Greenhouſe at the diſcretion of the owner, by introducing ſtages inſtead of beds; and in that caſe the glaſs roof may be fixed.

On each ſide of the Conſervatory, in the plan is a hot-houſe or ſtove, and a retiring room; and at the back of the whole is a houſe for the Gardener, and ſheds or offices for tools and other utenſils, for drying plants, ſeeds, &c. &c.

One of the hot-houſes is furniſhed with a ſtage, and is appropriated to ſuch plants as come from Africa, New South Wales, and the like climates; and is called a Dry Stove. The other has a bark-bed, for plants for the Eaſt and Weſt Indies, or other hot climates, and which require a tan heat to plunge the pots in, and a greater degree of fire to keep up the heat of the ſtove to within a few degrees of their native climate; for it would be both imprudent and impoſſible to keep up the heat at all times to that of Jamaica. This is called a Bark Stove. See STOVES.

One of the retiring rooms may be fitted up as an Aviary; or they may both be omitted at the pleaſure of the owner.

Explanation of the Plate containing the plan and elevation of a Conſervatory, with two Stoves, Retiring Rooms, Gardener's Houſe, and Offices for utenſils, &c.

A Elevation of the Conſervatory, two Stoves, and Retiring Rooms.
B Section of the weſt end of the Stoves, Retiring Room and Gardener's Houſe.
C Section through the Conſervatory and Gardener's Houſe.
D Ground plan of the Gardener's Houſe.
E E Retiring Rooms.
F F Offices for utenſils, &c.
G G Beds for plants in the Conſervatory.
H Walk through the Conſervatory and Stoves.
I I Area of the two Stoves.

The whole and all the parts are accurately drawn to a ſcale, which makes it unneceſſary to give the dimenſions. The buildings given in this plan, and which have been frequently executed by Mr. Malcolm, who furniſhed the drawings and deſcriptions for this work, are all in the ſame line.]

In Mr. Miller's plan, the Greenhouſe or Conſervatory is placed exactly fronting the ſouth; one of the wings or ſtoves facing the ſouth-eaſt, and the other the ſouth-weſt; ſo that from the time of the ſun's firſt appearance upon any part of the building, until it goes off at night, it is conſtantly reflected from one part to the other, and the cold winds are alſo kept off from the front of the centre building. In the area many of the more tender exotic plants may be placed in the ſummer ſeaſon, and in the ſpring, before the plants can be ſet out, the beds and borders of this area may be full of Anemonies, Ranunculuſes, early Tulips, &c. which will be paſt flowering, and the roots fit to take out of of the ground, by the time the plants are taken out. In the centre of this area may be a ſmall baſon of water, which will be very convenient for watering the plants, not only on account of its nearneſs, but becauſe the water will be ſoftened and warmed by the reflection from the glaſſes.

The wing facing the ſouth-eaſt ſhould always be preferred for the warmeſt or bark ſtove, becauſe the ſun, at its firſt appearance in the morning, ſhines directly upon the glaſſes, and warming the air of the houſe, gives new life to the plants, after the long nights of the winter ſeaſon.

In theſe buildings, if there are not ſheds running behind them their whole length, the walls ſhould not be leſs than three bricks thick; and if they are even more it will be better, becauſe where the walls are thin and expoſed to the open air, the cold will penetrate, and when the fires are made, the heat will come out through the walls, ſo that it will require a larger quantity of fuel, to maintain a proper temperature of warmth in the houſe: and in general the cloſer and better theſe houſes are built, the leſs fuel will be required to warm them; ſo that the firſt expenſe in building them properly will be the cheapeſt, when the after expenſe of fires is taken into conſideration.

Beſides theſe buildings, it will be proper to have deep hot-bed frames, ſuch as are commonly uſed to raiſe large annuals in the ſpring, into which may be ſet pots of ſuch plants as come from Carolina, Virginia, &c. whilſt the plants are too ſmall to bear the open air; as alſo many other ſorts from Spain, and the other ſouthern countries of Europe, which require only to be ſcreened from the violence of froſts, and ſhould have as much free air as poſſible in mild weather; which can be no better effected than in one of theſe frames, where the glaſſes may be taken off every day when the weather will permit, and put on every night: and in hard froſts the glaſſes may be covered with mats, ſtraw, peas-haulm, or the like; to prevent the roots of the plants from being frozen. If theſe pits be ſunk a foot or more below the ſurface of the ground, it will be better, provided the ground be dry. The ſides of the frame ſhould be built with brick, and a curb of wood laid round on the top of the wall, into which the gutters whereon the glaſſes ſlide may be laid: the back wall may be four feet high, and two bricks and a half thick, the front one foot and a half; the width of the inſide of the frame about ſix feet, and the length in proportion to the number of plants to be contained in it.

Greenweed or **Greenwood**. See *Geniſta*.

Greggia. See *Myrtus*.

GREWIA. (*So named by Linneus, in honour of Nehemiah Grew, M. D. F. R. S. the famous author of the Anatomy of Vegetables,* 1682. *fol.)*

Lin. gen. n. 1026. *Reich.* 1117. *Schreb.* 896. *Juſſ.* 292. *Gærtn. t.* 106. Mallococca. *Forſt.* 39.

Claſſ. 20.7. Gynandria Polyandria—*removed by Schreber into* Polyandria Monogynia.

Nat. order of *Columniferæ*. *Tiliaceæ*. Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* five-leaved: *leaflets* lanceolate, upright, leathery, coloured within, ſpreading, deciduous.

Cor. *Petals* five, the ſame form with the calyx, often ſmaller, emarginate at the baſe. *Nectary*, a ſcale inſerted into each petal at the baſe, thickiſh, bent in, inclined to a rim ſurrounding the ſtyle.

Stam. *Filaments* very numerous, the length of the petals, briſtle-ſhaped, inſerted into the baſe of the germ. *Anthers* roundiſh.

Pist. *Germ* pedicelled, roundiſh, ſitting on a columnar, upright *receptacle*, ſurrounded by a five-cornered rim. *Style* filiform, the length of the ſtamens. *Stigma* obtuſe, four-cleft.

Per. *Berry* four-lobed, four-celled.

Seeds ſolitary, globular, one-celled.

ESSENTIAL CHARACTER.

Cal. five-leaved. *Pet.* five, with a nectareous ſcale at the baſe of each. *Berry* four-celled.

SPECIES.

1. Grewia occidentalis. *Elm-leaved Grewia.*
Lin. ſpec. 1367. *Reich.* 4. 66. *hort. cliff.* 433. *Willich obſ. n.* 49. *Duham. arb.* 1. 276. *t.* 108. *Pluk. alm. t.* 237. *f.* 1. (Ulmifolia). *Comm. hort.* 1. 165. *t.* 85. *Seba theſ.* 1. 46. *t.* 26. *f.* 3. *Raii dendr.* 13. 4.
Leaves ſubovate, flowers ſolitary.

[2. Grewia populifolia. *Poplar-leaved Grewia.*
Vahl ſymb. 1. 33.
Chadara tenax. *Forſk. ægypt.* 105. *n.* 23.
Leaves orbiculate, peduncles ſolitary one-flowered.

3. Grewia orientalis. *Oriental Grewia.*
Lin. ſpec. 1367. *Reich.* 4. 67. *fl. zeyl. n.* 324. *hort. cliff.* 433. *Gærtn. fruct.* 2. 112. *Vahl. ſymb.* 1. 34. *Pluk. alm. t.* 50. *f.* 4. *Rheed. mal.* 5. *t.* 46. *Raii hiſt.* 1624. c. VII.
β. Frutex Ceramicus. *Rumph. amb.* 4. 124. *t.* 60.
Leaves ſublanceolate, flowers ſolitary.

4. Grewia lævigata.
Vahl ſymb. 1. 34.
Leaves elliptic, acuminate, ſmooth on both ſides, quite entire at the baſe, peduncles three-flowered.

5. Grewia glanduloſa.
Vahl ſymb. 1. 34.
Leaves ovate-lanceolate, acuminate, ſmooth on both ſides, glandular at the baſe; flowers ſolitary, ſubſeſſile.

6. Grewia hirſuta.
Vahl ſymb. 1. 34.
Leaves lanceolate-ovate ſoft, calyxes very hairy, peduncles three-flowered.

7. Grewia excelſa.
Vahl ſymb. 1. 35.
Chadara arborea. *Forſk. deſcr.* 105.
Leaves oblong, beneath tomentoſe hoary.

8. Grewia aſiatica. *Aſiatic Grewia.*
Lin. ſyſt. 827. *Reich.* 4. 67. *mant.* 122. *Vahl ſymb.* 1. 35.
Microcos lateriflora. *Lin. ſpec.* 734. *fl. zeyl. n.* 208.
Hamdamanias. *Herm. zeyl.* 3. *Burm. zeyl.* 113.
Leaves cordate.

9. Grewia tiliæfolia.
Vahl ſymb. 1. 35.
Leaves cordate-roundiſh ſmooth on both ſides, peduncles ſhorter than the petiole.

10. Grewia Malococca. *South-ſea Grewia.*
Lin. ſyſt. 827. *ſuppl.* 409. *Gærtn. fruct.* 2. 113. *Forſt. fl. auſt. n.* 327.
Malococca crenata. *Forſt. gen.* 39. *Nov. act. upſ.* 3. 185.
Leaves cordate ovate-oblong crenate ſcabrous, pedicels axillary three-flowered, fruit tetracoccous.

11. Grewia velutina.
Vahl ſymb. 1. 35.
Leaves oval very ſoft on both ſides hoary underneath, peduncles axillary about three together three-flowered.

12. Grewia ſalvifolia. *Sage-leaved Grewia.*
Lin. ſyſt. 827. *ſuppl.* 409.
G. Damine. *Gærtn. fruct.* 2. 113?
Leaves oblong quite entire, flowers axillary ſeveral pedicelled, petals bowed back linear.

13. Grewia Microcos.
Lin. ſyſt. 827. *Reich.* 4. 67.
Microcos paniculata. *Lin. ſpec.* 733. *fl. zeyl. n.* 207. *Burm. zeyl.* 159. *t.* 74. *Rheed. mal.* 1. 105. *t.* 56.
Leaves ovate-oblong, flowers panicled.]

DESCRIPTIONS, &c.

1. This will grow to the height of ten or twelve feet, and has a ſtem and branches very like thoſe of the ſmall-leaved Elm, the bark being ſmooth, and of the ſame colour as that of Elm when young; the leaves are alſo very like thoſe of the Elm, and fall off in winter: the flowers are produced ſingly along the young branches from the axils, and are of a bright purple colour; they appear towards the end of july, and continue through auguſt to the beginning of ſeptember, but are never ſucceeded by fruit in this country.

[It appears from Plukenet that it was cultivated in 1692, in the Royal Garden at Hampton Court.

2. This is a branching ſhrub; the branches ſlender, ſmooth, aſh-coloured. Leaves petioled, alternate, ſcattered, unequally and bluntly tooth-crenate, veined, very ſmooth above, ſcarcely pubeſcent beneath; hairs ſtellate viſible only with a magnifier. Petiole filiform, the length of the leaves. Peduncle filiform, a little longer than the leaves, and from the ſame bud. Bractes in pairs, on the middle of the peduncle, deciduous. Calycine leaflets linear, obtuſe, villoſe, ſmooth within, coloured. Petals linear, ſhorter than the calyx.—Allied to the foregoing, but of a looſer habit, with the leaves hanging down like thoſe of Populus tremula, having ſtellate hairs beneath: the flowers are a little ſmaller [a].

3. Allied to the firſt ſort. It is a tree of a middling ſize. Leaves ſerrate, petioled. Peduncles from the axils, tomentoſe, trifid, three-flowered [b]. Berry ſubglobular, depreſſed, becoming obtuſely four-cornered in drying, ſucculent; the ſkin when freſh ſaffron-coloured, villoſe, fleſh pulpy, fugacious, ſtones hard, like grape-ſtones, having a deep furrow on the back, two-celled. Seed one in each cell, that is, eight in a whole berry, obovate, compreſſed like a lens, ſomewhat livid or bay-coloured [c].

Native of the Eaſt Indies. Introduced in 1767, by Mr. William Malcolm. It flowers in july and auguſt [d].

4. Branches with a purple bark dotted with white. Leaves on very ſhort petioles, blunt, ſerrate on the outſide, from two to three inches long. Stipules awl-ſhaped pubeſcent. Peduncles axillary, ſolitary, four times as long as the petiole. Pedicels almoſt the length of the petioles. It differs from the next in having longer leaves, quite entire and without glands at the baſe, and three-flowered long peduncles.

Native of the Eaſt Indies, where it was obſerved by Koenig.

5. Branches ſomewhat rugged. Leaves acute, ſmooth, crenate, the three or five notches next the baſe glandular. Petiole ſhort. Flowers axillary, on very ſhort peduncles.

Native of the Iſle of France.

6. Branches ſoft with hairs, eſpecially at top. Leaves on very ſhort petioles, acuminate, more villoſe underneath, unequally and ſharply ſerrate, an inch and half in length. Stipules briſtle-ſhaped, the length of the petioles. Peduncles axillary, in threes; ſometimes ſolitary. Flowers ſubſeſſile, with a three-leaved lanceolate involucre. Petals very ſhort, oblong, ciliate.

Found by Koenig on the tops of mountains in the Eaſt Indies.

7. Leaves unequally and bluntly ſerrate, the upper ſurface even, nerved and veined, the lower hoary. Peduncles axillary, often ſolitary, three-flowered; pedicels angular [e].

8. A tree with the branches ſcarcely tomentoſe. Stipules lanceolate. Leaves alternate, petioled, roundiſh, ſharpiſh, five-nerved, ſcarcely lobed, tomentoſe underneath, the ſize of Apple-leaves. Petioles round, tomentoſe, one-fifth of the length of the leaves. Peduncles axillary, uſually in fours, trifid, three-flowered, half the length of the leaves. Petals not bigger than the calyx. Berries ſmall, red, acid.

Native of Suratte [f].

9. Branches ſmooth, with a brown bark very minutely dotted with aſh-colour, the younger ones ſubvilloſe. Leaves a hand breadth and more, nerved and veined, one lobe of the baſe a little ſhorter than the other, bluntly ſerrate; the ſerratures almoſt equal. Petioles powdered at the tip, ſcarcely thickened. Stipules half-cordate, acuminate, ſhorter than the petiole. Peduncles axillary, two or three together, three-flowered. Involucre three-leaved; leaflets lanceolate, obtuſe, concave, the length of the pedicels. Calyx tomentoſe on the outſide, ſmooth within, coloured. Germ on a ſhort pedicel. Fruit two-grained.

Native of the Eaſt Indies [g].

10. The difference by which it may be known from the other ſpecies is with difficulty made out [h]. It is diſtinct by having no ſcales to the petals, the germ ſeſſile, and the ſtones or nuts not two-celled [i]. The berry is obtuſely four-cornered, depreſſed, ſcabrous on all ſides with minute briſtles: the ſtones are ovate-acuminate, turgidly lens-ſhaped, wrinkled and rough with very ſmall tubercles, one-celled, thick and hard. Seeds ſolitary, and four in the whole berry, obovate, remarkably tapering downwards, ſomewhat livid [k].

Native of the iſlands of Tongatabu and Huaheine in the South Seas [l].

11. Stem ſhrubby. All parts of the plant very ſoft with nap. Leaves alternate, ſometimes angular towards the tip; ſerratures bluntiſh, remote, unequal. Petioles very ſhort. Stipules briſtle-ſhaped, deciduous. Peduncles the length of the petioles. Flowers ſmaller than in G. aſiatica [m].

12. A ſhrub. Leaves petioled, tapering to both ends, obtuſe, ſmooth above, hoary and veined underneath. Peduncles three or more, tomentoſe, ſhort. Flowers upright. Calyx five-toothed, tomentoſe. Petals tomentoſe, upright, yellow, bifid at the tip. Filaments much bearded at the baſe, the other part ſmooth: anthers long, yellow. Stigma capitate, emarginate [n].

Native of the Eaſt Indies. Introduced in 1779, by John Gerard Koenig, M. D.

13. A tree. Leaves alternate, acuminate, very ſlightly crenate, nerved, petioled, roughiſh. Flowers terminating. Calyxes tomentoſe [o].

Native of the Eaſt Indies.]

PROPAGATION AND CULTURE.

1. The common Grewia may be propagated from cuttings or layers; the cuttings ſhould be taken off, and planted in april, before the buds ſwell, for they do not ſucceed well after; theſe cuttings ſhould be planted in ſmall pots filled with loamy earth, and the pots ſhould be plunged into a moderate hot-bed of tanners bark, where, if they are duly watered, and in the heat of the day ſhaded from the ſun, they will take good root in about two months, and may then be gradually inured to bear the open air, into which they ſhould be removed in june, and placed in a ſheltered ſituation, where they may remain till autumn, when they muſt be removed into the green-houſe; the beſt time to lay down the layers of this plant is in the ſpring, before the buds come out, and theſe will be rooted by the ſame time the following year, when they may be cut off from the old plants, and planted each into a ſeparate pot filled with a ſoft loamy ſoil.

The beſt time to remove or tranſplant this plant is, either in the ſpring, juſt before the buds begin to ſwell, or in autumn, when the leaves begin to drop; for in ſummer, when the plants are in full leaf, it will be very improper to diſturb them.

In winter theſe plants ſhould be placed in the green-houſe, for they are too tender to live abroad in England; but they ſhould have as much free air as poſſible in mild weather; for they only require to be protected from froſt, and after their leaves are fallen, they will require very moderate watering; but in ſummer they ſhould be conſtantly watered three or four times a week in dry weather, and placed in a ſheltered ſituation, with other hardy green-houſe plants, where they will add to the variety.

The other ſorts being tender, will not live through the winter in England, unleſs they are placed in a warm ſtove; nor do thoſe plants thrive well, which are placed on ſhelves in the dry ſtove; therefore the only method to have them ſucceed, is to place them in the bark-bed in the tan-ſtove. In ſummer theſe plants require a good ſhare of free air to be admitted to them, and ſhould have water three or four times a week in warm weather; but in winter they muſt be ſparingly watered, and require to be kept warm.

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[a] Vahl. [b] Linn. ſyſt. and zeyl. [c] Gærtner.
[d] Hort. kew. [e] Vahl. [f] Linn. mant.

[g] Vahl. [h] Linn. ſuppl. [i] Juſſieu. [k] Gærtner.
[l] Forſter. [m] Vahl. [n] Linn. ſuppl. [o] Linn. zeyl.

GRIAS. (*The name of a plant in Apuleius.*)
Lin. gen. 659. *Reich.* 715. *Schreb.* 892. *Juſſ.* 257.
Claſſ. 13. 1. Polyandria Monogynia.
Nat. order of *Guttiferæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, cup-ſhaped: mouth four-cleft finally lacerated.
Cor. *Petals* four, roundiſh, concave, coriaceous.
Stam. *Filaments* numerous, ſetaceous, longer than the corolla, inſerted into the receptacle. *Anthers* roundiſh.
Pist. *Germ* ſomewhat depreſſed, immerſed in the calyx. *Style* none. *Stigma* thickiſh, four-cornered, hollowed out croſs-wiſe.
Per. *Drupe* large, one-celled, acuminate at the baſe and tip.
Seeds. *Nucleus* ſcored with eight furrows.

ESSENTIAL CHARACTER.

Cor. four-petalled. *Cal.* four-cleft. *Stigma* ſeſſile, croſs-ſhaped. *Drupe* with an eight-furrowed nucleus.

SPECIES.

1. Grias cauliflora. *Anchovy Pear.*
Lin. ſpec. 732. *ſyſt.* 492. *Reich.* 2. 583. *Swartz obſ.* 216. *Brown. jam.* 245. (Calophyllum.) *Sloan. jam.* 2. 122. *t.* 216. & 217. *f.* 1, 2. (Palmis affinis).

DESCRIPTION, &c.

[This tree frequently grows to the height of fifty feet. Branches at the top, ſimple, ſhort, or none. Leaves on ſhort petioles, pendulous, two or three feet long, wedge-ſhaped at the baſe, oblong-attenuated, entire, marked with nerves and veins, wrinkled, ſmooth. Flowers from the ſtem, on very ſhort, ſcaly, many-flowered peduncles: pedicels ſhort, crowded, one-flowered. Corollas large, whitiſh. Calyx coriaceous, ſmall, ſuperior, the four clefts blunt. Filaments inſerted into a ſquare receptacle, united at the baſe in a five-fold row, bent in, the inner ones ſhorteſt. Drupe ovate, eight-furrowed, crowned with the calyx. Nucleus ſolitary oblong[p].

The uprightneſs of the growth, and the largeneſs of the leaves give this tree a very elegant appearance. The fruit is about the ſize of an alligator's egg, and much like it in ſhape, only a little more acute at one end, and of a brown ruſſet colour. This beautiful tree is frequent in many parts of Jamaica, and grows, generally, in low moiſt bottoms, or ſhallow waters[q].]

The fruit is pickled in the Weſt Indies, and eaten in the ſame manner with the Eaſt Indian Mango, which it exactly reſembles in taſte.

PROPAGATION AND CULTURE.

Put the ſtones into the ground ſoon after the fruit is gathered, and keep the plants conſtantly in the bark-bed in the ſtove.

[In the Weſt Indies the ſeeds grow very readily, wherever they meet with a ſufficient quantity of moiſture, and propagate ſo thick, that the trees are always found formed into thickets or large cluſters[r].

GRIELUM.
Lin. gen. n. 1235. *Reich. n.* 633. *Schreb. n.* 793. *Gærtn. t.* 36.
Claſſ. 10. 4. Decandria Pentagynia.
Nat. order of *Gruinales.*

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, ſpreading, deeply five-cleft, flat at the baſe, ſharp, equal, permanent.
Cor. *Petals* five, ſpreading, large, obovate, ſeſſile, tapering at the baſe.
Nectaries oblong glands, placed round the germ, and united ſo as to form a crown.
Stam. *Filaments* ten, filiform, ſomewhat rigid, equal, permanent, the length of the calyx. *Anthers* ovate-oblong, upright.
Pist. *Germs* five, diſtinct, awl-ſhaped, upright, ſhorter than the ſtamens. *Styles* none, (five, *G.*) *Stigmas* warted.
Per. five, oblong, acuminate, hard. (Capſule formed from the calyx hardened, round, flatted, five or ten-celled, *G.*)
Seeds ſolitary, oblong.
Obs. *It is not certain whether there be a difference of ſex, or a withering of the piſtil in ſome individuals.*

ESSENTIAL CHARACTER.

Cal. five-cleft. *Pet.* five. *Filam.* permanent. *Peric.* five, with one ſeed in each.

SPECIES.

1. Grielum tenuifolium.
Lin. ſyſt. 431. *Reich.* 2. 387.
G. laciniatum. *Gærtn. fruct.* 180.
Geranium grandiflorum. *Lin. ſpec.* 958. *Burm. ger.* 1. *Burm. afr.* 88. *t.* 34. *f.* 1.—145. *t.* 53. (Ranunculo-platycarpos).

DESCRIPTION, &c.

Petals blue, with livid-yellow claws. Capſule inferior, with the calyx cloſely adhering and ſerving as a bark to it at bottom, flattiſh at top, and ſurrounded with a ring of hard bony tubercles, within which it is crowned with the permanent filaments and ſtyles; it has ten cells, but no valves: to each ſtyle there are two cells, but all of them are placed in a ring regularly round the axis of the fruit, and deeply immerſed in the ſubſtance of the calyx. There is no receptacle, but the ſeeds are fixed to the tip of the cells, one only in each; the form is elliptic, beaked at top, plano-convex, or flatted lens-ſhaped, of a reddiſh cheſtnut colour[s].

Native of the Cape of Good Hope.

GRIMMIA. (*So named in honour of Jo. Fred. Car. Grimm, Archiater at Gotha.*)

A genus in the order of Moſſes, comprehending ſome Linnean ſpecies of Bryum. *Schreb. gen. n.* 1642.

GRISLEA. (*Named after G. Griſley, a Portugueſe ſurgeon; author of* Viridarium Luſitanicum. *Ulyſſip.* 1661. 8°. *—republiſhed by Seguier in* 1749. *It is alſo in Ray's Sylloge Stirpium exterarum.*)
Lin. gen. 474. *Reich.* 510. *Schreb.* 642. *Juſſ.* 331.
Claſſ. 8. 1. Octandria Monogynia.
Nat. order of *Calycanthemæ*. *Salicariæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, awl-ſhaped, inclined to bell-ſhape, upright, four-toothed, coloured, permanent.
Cor. *Petals* four, ovate, from the inciſures of the calyx, extremely minute.
Stam. *Filaments* eight, awl-ſhaped, upright, long, aſcending. *Anthers* ſimple, upright, roundiſh.
Pist. *Germ* ſuperior, globular, pedicelled. *Style* filiform, the length of the ſtamens. *Stigma* ſimple.
Per. *Capſule* globular, ſhorter than the calyx, one-celled.
Seeds very many, roundiſh, very ſmall. *Receptacle* large.
Obs. *Sometimes one-third part is added to the parts of the flower.*

ESSENTIAL CHARACTER.

Cal. four-cleft. *Pet.* four from the inciſures of the calyx. *Filam.* very long, aſcending. *Capſ.* globular, ſuperior, one-celled, containing many ſeeds.

SPECIES.

1. Griſlea ſecunda.
Lin. ſpec. 496. *Reich.* 2. 155. *hort. cliff.* 146. *Loefl. it.* 245.
Leaves ovate-lanceolate, ſmooth, on ſhort petioles, raceme terminating, flowers all facing one way.

2. Griſlea tomentoſa.
Roxb. corom. 2. 29. *t.* 31.
Lythrum fruticoſum. *Lin. ſpec.* 641. *Reich.* 2. 427.
Seringie of the Telingas.
Leaves half-lanceolate with a cordate baſe, whitiſh beneath, ſeſſile; racemes axillary ſhort.

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[p] Swartz.

[q] Browne and Long, 811.

[r] Browne.

[s] Gærtner.

DESCRIPTION, &c.

1. This is a tree with round branches. Leaves like thoſe of Bay, oppoſite, quite entire, with alternate nerves. Raceme ſimple, bent outwards, the length of the leaves, covered with numerous flowers, on pedicels the length of the calyx, all bent upwards in one row. Calyxes green, turbinate. Petals ſcarcely conſpicuous. Stamens very long, purple. Anthers fulvous.

Native of South America[t].

2. Stem and principal branches erect; ſmaller aſcending; bark ruſt-coloured. Leaves oppoſite, two-faced, acute, ſmooth above. Racemes bearing from five to fifteen flowers, which are pretty large, red and permanent. Calyx red, ſix-toothed, equal, permanent. Petals ſix, ſmall, lanceolate. Filaments equal, inſerted into the calyx near its baſe. Stigma oblong. Capſule covered with the coloured permanent calyx.

It is a beautiful flowering ſhrub, a native of the hills and valleys through the northern provinces of the Carnatic in the Eaſt Indies. The bright-red calyx, retaining its colour till the ſeeds are ripe, gives this ſhrub a very ſhowy appearance[u]. According to Linneus, it is alſo a native of China.

Gromwell. See *Lithoſpermum.*]

GRONOVIA. (*The name was given to this genus by Dr. Houſtoun, in honour of John Fred. Gronovius, M. D. a learned botaniſt at Leyden.*)

Lin. gen. n. 282. *Reich.* 302. *Schreb.* 391. *Houſt. reliqu.* 7. *Juſſ.* 394.
Claſſ. 5. 1. Pentandria Monogynia.
Nat. order of *Cucurbitaceæ.*

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, five-cleft beyond the middle, bell-ſhaped, coloured, permanent; *diviſions* ſemi-lanceolate, upright.

Cor. *Petals* five, extremely minute, roundiſh, from the clefts of the calyx.

Stam. *Filaments* five, capillary, length of the corolla, inſerted into the calyx, alternate with the petals. *Anthers* erect, twin.

Pist. *Germ* inferior. *Style* filiform, longer than the ſtamens. *Stigma* obtuſe, (two-lobed, *H.*)

Per. *Berry* dry, roundiſh, coloured, one-celled. (Fruit five-ribbed, *H.*)

Seed ſingle, roundiſh, large.

ESSENTIAL CHARACTER.

Petals five, together with the ſtamens inſerted into the bell-ſhaped corolla. *Berry* dry, inferior, containing one ſeed.

SPECIES.

1. Gronovia ſcandens. *Climbing Gronovia.*
Lin. ſpec. 292. *ſyſt.* 243. *Reich.* 1. 567. *mant.* 343. *hort. cliff.* 74. *Mart. cent.* 40. *Amm. herb.* 346.

DESCRIPTION, &c.

Gronovia is an annual plant, which ſends forth many trailing branches like thoſe of the Cucumber, cloſely ſet with broad leaves, in ſhape like Vine leaves; thoſe on the ſtalk are covered with ſmall ſpines, [or rather hooked hairs,] which ſting like the Nettle: the branches have many tendrils, by which they faſten themſelves to other plants, and thus will riſe to the height of ſix or eight feet. The flowers are ſmall, axillary and in bunches, of a greeniſh yellow colour, and make no great appearance.

[It has a ſtrong ſmell. The leaves reſemble thoſe of Bryony, are rough and ſtinging. Peduncles many-flowered axillary. It may be doubted whether it is not more truly polypetalous, and allied to the Onagræ[x].]

This plant was diſcovered by Dr. Houſtoun at La Vera Cruz, whence he ſent the ſeeds to Europe about 1731.

PROPAGATION AND CULTURE.

This being a very tender plant, muſt be raiſed on a hot-bed early in the ſpring, and afterwards placed in the bark-ſtove, and treated in the ſame way as the Momordica. Thus it will produce ripe ſeeds; but no uſe of it being known, and having little beauty, it is not cultivated except in botanic gardens.

[Grossularia. See *Ceanothus aſiaticus* (Rhamnus lævigatus), *Melaſtoma. Ribes.*

Grossulariæ fructu. See *Cactus Pereſkia* and *Melaſtoma.*

Ground-Ivy. See *Glecoma.*

Ground-nut. See *Arachis.*

Ground-Ratan. See *Rhapis flabelliformis.*

Groundsel. See *Senecio.*

Groundsel-Tree. See *Baccharis.*

Gryllus. See *Andropogon.*

Guabi-pocaca-biba. See *Mimoſa vaga.*]

Guaiabara. See *Coccoloba.*

Guaiabo. See *Pſidium pomiferum.*

Guaiacana. See *Dioſporos.*

GUAIACUM. (*From the Spaniſh* Guayacan, *which is formed from the Indian* Hoaxacan).

Lin. gen. n. 518. *Reich.* 561. *Schreb.* 727. *Plum.* 17. *Loefl.* 219. *Juſſ.* 296. *Gærtn. t.* 113.
Claſſ. 10. 1. Decandria Monogynia.
Nat. order of *Gruinales. Rutaceæ,* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* five-leaved: *leaflets* ovate-oblong, concave, obtuſe, ſpreading, deciduous; the two outer ones a little ſmaller.

Cor. *Petals* five, roundiſh-obovate, obtuſe, concave, ſpreading, longer than the calyx, ending in ſhort claws, inſerted into the receptacle.

Stam. *Filaments* ſubulate, broader at the baſe, upright, ſhorter than the corolla, inſerted into the receptacle. *Anthers* oblong, finally recurved.

Pist. *Germ* broader above, angular, pedicelled. *Style* ſhort, ſubulate. *Stigma* ſimple, acute.

Per. *Capſules* two to five, (five-celled, *G.*) on very ſhort pedicels, compreſſed, membranaceous, covered with a pulpy rind, gibbous on the outſide, united on the inſide, ſeparating when ripe, gaping.

Seeds ſolitary, bony, oblong.

ESSENTIAL CHARACTER.

Cal. five-cleft, unequal. *Petals* five inſerted into the receptacle. *Capſ.* angular, five-celled.

SPECIES.

1. Guajacum officinale. *Officinal Guajacum,* or *Lignum Vitæ.*
Lin. ſpec. 246. *Reich.* 2. 262. *hort. cliff.* 187. *mat. med.* 112. *Plenck, ic. t.* 331. *Woodv. med. bot.* 43. *t.* 16. *Gærtn. fruct.* 2. 148. *Swartz obſ.* 168. *Brown. jam.* 225. *Pluk. alm. t.* 35. *f.* 4. *Bauh. pin.* 448. 1. *Sloan. jam.* 2. 133. *t.* 222. *f.* 3—6. *Seba theſ.* 1. 86. *t.* 53. *f.* 2. *Blackw. t.* 350. *f.* 1, 2. *Cluſ. exot.* 312. 314. *Raii hiſt.* 1685.
β. G. jamaicenſe, lentiſci ſubrotundis fol. flore albo. *Pluk. alm.* 180. *t.* 35. *f.* 3.
Leaflets two pairs obtuſe.

2. Guajacum ſanctum.
Lin. ſpec. 547. *Reich.* 2. 262. *Plenck, ic. t.* 330. *Comm. hort.* 1. 171. *t.* 88. *Bauh. pin.* 448. 2.
Lignum vitæ ex Braſilia. *Blackw. t.* 350. *f.* 3, 4.
Leaflets many pairs obtuſe.

3. Guajacum afrum.
Lin. ſpec. 547. *ſyſt.* 396. *Reich.* 2. 263. *hort. cliff.* 489. (Guilandinoides). *Walth. hort.* 2. *t.* 2. (Acacia). *Boerh. lugdb.* 2. 57. (Afra arbor).
Schotia ſpecioſa. *Ait. hort. kew.* 2. 56. *Jacqu. ic.* 1. *t.* 75. *collect.* 1. 93.
Theodora ſpecioſa. *Medic. monogr.* 16. *t.* 1.
Leaflets many pairs acute.

[4. Guajacum dubium.
Forſt. fl. auſtr. n. 186.
Leaves conjugate oblong-lanceolate obtuſe.

DESCRIPTIONS, &c.

Theſe are trees, the timber of which is very hard. The leaves are abruptly pinnate. The peduncles axillary and one-flowered. The fruit of *G. officinale* is two-celled, compreſſed and obcordate: that of *G. ſanctum* four or five-celled, with a ſort of wing to each[z].]

1. The firſt is the common Lignum Vitæ or Guajacum, and becomes a very large tree, covered with a hard, brittle, browniſh bark, not very thick: the wood is firm, ſolid, and ponderous, appearing very reſinous,

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[t] Linn. hort. cliff.

[u] Roxburgh.

[x] Juſſieu.

[z] Juſſieu.

ſinous, of a blackiſh yellow colour within, and of a hot aromatic taſte ; the ſmaller branches have an aſh-coloured bark.

[Leaves pinnate: leaflets two pairs, elliptic, ſeſſile, entire, veined, ſhining. Peduncles terminating, round, ſhorter than the petioles, one-flowered. Calycine leaflets ovate, convex, pubeſcent. Petals ovate, entire. Filaments ten, contiguous at the baſe. Anthers incumbent, bifid at the baſe, yellow. Germ obcordate, compreſſed. Style permanent[b]. Capſule ſubturbinate (obcordate-angular, *Sw.*), on a very ſhort pedicel, five-cornered, with very narrow winged ribs on the round back of the angles, ſucculent, ſmooth, pale ferruginous (or yellow) five-celled, (from two to five-celled, *Sw.*). Partitions quite ſimple, membranaceous, fixed to the middle of the cover. Seeds large, thicker and blunt above, attenuated below, convex on one ſide, angular on the other, rufeſcent. Two or three cells are frequently abortive, but the veſtiges of them remain. The rind of the capſule is continuous, and the partitions indiviſible ; it is one therefore, and not ſeveral, as Schreber would have it[c].

[Browne deſcribes it as an evergreen of a dark gloomy caſt, continuing its verdure in the drieſt ſeaſons, and at times throwing out a great number of blue flowers, which are ſucceeded by compreſſed berries of a roundiſh form. The tree takes many years to arrive at its full growth. The roots run far into the ground perpendicularly, contrary to the uſual growth of timber trees in the Weſt Indies, which generally ſhoot the largeſt prongs of their roots in an horizontal direction, and are commonly obſerved to run very near the ſurface. The bark is thick and ſmooth ; the wood of a dark olive colour, and croſs-grained, the ſtrata running obliquely into one another, in form of an X. As timber it anſwers where ſtrength and duration are required, and its weight no impediment. It takes a fine poliſh, and anſwers well in the turner's lathe ; but is now chiefly uſed for ſhip-blocks[d].

The gum is obtained by jagging the body of the tree in may. It exſudes copiouſly from the wounds, though gradually ; and when a quantity is found accumulated, hardened by expoſure to the air and ſun, it is gathered, and packed in ſmall kegs. This gum has been ſuſpected ſometimes to have been ſophiſticated by the negroes, with the gum of the Manchineal-tree, to which it bears ſome ſimilitude at the firſt appearance ; but it is eaſily diſtinguiſhed, by diſſolving a little in ſpirits : the true gum imparts a whitiſh tinge ; but the manchineal gives a greeniſh caſt : and this is ſtill farther diſtinguiſhable by pouring a little of the ſame tincture into water, which takes from the Guajacum almoſt immediately the complection of milk.

The fruit is purgative, and for medicinal uſe, far excels the bark. From the flowers alſo is prepared a laxative ſyrup, reſembling ſyrup of violets.

The tree riſes to the height of forty feet, and meaſures from fifteen to eighteen inches in diameter. It is certainly one of the moſt valuable trees in the Weſt Indies ; ſince the body, the bark, gum, fruit, leaves and bloſſom are all applicable to ſome uſeful purpoſe[e].

The freſh bark opens the body, and is deemed a ſweetener of the blood, but the pulp of the berries purges and vomits very violently. The reſinous parts of the tree are of a warm active nature, and found, by long experience, to attenuate and diſſolve the blood : they are eſteemed ſpecifics in old venereal taints, chronical rheumatiſms, and other diſorders ariſing from the ſizyneſs of the juices ; and generally adminiſtered in decoctions (the reſin ſometimes in boluſes) ordered for a continuance : but great care muſt be taken to moderate or temper the native acrimony of theſe medicines in the beginning of a courſe, and to prepare the body for the uſe of them ; the neglect of which has been frequently the cauſe of very diſmal conſequences in hot climates, and may probably have the like effects ſometimes in colder regions.

There is a tincture made with the gum of this tree, that has been ſometimes adminiſtered with ſucceſs, as well as the powder itſelf, in obſtinate intermittent and remittent fevers ; in which caſes they commonly procure a few ſtools, as well as promote a general diſcharge by the ſkin. The foliage of the tree is of a very deterſive nature, and frequently uſed to ſcour and whiten the floors in moſt houſes about Kingſton : the infuſion of them is alſo uſed to waſh painted linens, and other ſtained garments ; which it is ſaid to do very effectually, without changing the luſtre of the dyes[f].

The wood and reſin only are now uſed in Europe. Since the uſe of Mercury it is ſeldom preſcribed in the *lues venerea* ; and if it be occaſionally employed in *ſyphilis*, it is rather with a view to correct other *vitia* in the habit. Dr. Cullen looks upon it as analogous to the balſams and turpentines, and as having a conſiderable power in ſtimulating the extreme veſſels ; and thus accounts for its efficacy in chronic rheumatiſm ; and from its paſſing off by the pores of the ſkin, he conſiders it as a probable remedy in ſome cutaneous diſorders.

In the London Diſpenſatory there is a tincture of Gum Guaiacum — pulvis Aloeticus cùm Guaiaco — and the wood is an ingredient in Decoctum Sarſaparillæ compos.

The Edinburgh college have directed an elixir to be prepared with rectified ſpirit, or with the vinous ſpirit of ſal ammoniac ; ſome object to the ſpirituous tincture, and Dr. Cullen prefers the diffuſion of the gum in water[g].

It is a native of the Weſt Indies. In Jamaica it is abundant on the ſouth ſide, but it is ſeldom found in any other part of the iſland.

It was cultivated in 1699, by the Dutcheſs of Beaufort[h].]

2. The ſecond ſort has many leaflets placed along the midrib by pairs ; they are rounded and obtuſe at their ends, but narrow at their baſe, of the ſame conſiſtence with thoſe of the firſt ſort, but of a darker green colour. The flowers are produced in looſe bunches towards the ends of the branches, are of a fine blue colour, and the petals are fringed on their edges. This is called in ſome of the iſlands of the Weſt Indies *Baſtard Lignum Vitæ*.

Cultivated by Mr. Miller in 1759.

3. Branches rigid. Leaves alternate, with eight pairs of leaflets. Common petiole edged, jointed, channelled ; leaflets ovate-oblong, oppoſite, quite entire, mucronate, ſmooth, ſtiffiſh, perennial, very ſlightly ſhortened at the inner baſe. Stipules preſſed cloſe to the branches, ſubulate, very ſmall[i].

Native of the Cape of Good Hope, near Moſſel-bay[k]. Mr. Miller, in the 7th edition of his Dictionary (1759) ſays, it has been long an inhabitant of the curious gardens in England and Holland. See *Schotia*, which name was given to this plant by Jacquin, from Richard van der Schot, his companion in his travels.

4. Native of the iſland of Tongatabu in the South Seas[l].]

PROPAGATION AND CULTURE.

1, 2. Theſe trees can only be propagated by ſeeds procured freſh from the countries where they grow naturally. As ſoon as they arrive ſow them in pots filled with light earth ; plunge them in a good hot-bed, and if the ſeeds are good, they will appear in ſix weeks or two months ; and in ſix weeks more they will be ſtrong enough for tranſplanting ; then they ſhould be carefully taken out of the ſeed-pots, ſo as to preſerve their roots as entire as poſſible, and each planted in ſeparate ſmall pots filled with light earth, and plunged into a new hot-bed of tanners bark, where they muſt be ſhaded from the ſun till they have taken freſh root ; then they muſt be treated in the ſame manner as other tender exotic plants from warm countries, admitting a large ſhare of free air to them when the weather is warm : they will require to be frequently refreſhed with water in warm weather, but it muſt be given them with caution, for too much wet will infallibly deſtroy them. While the plants are young, they may be kept during the ſummer ſeaſon in a hot-bed of tanners bark under a frame; but in the autumn they muſt be removed into the bark-ſtove, and plunged into the hot-bed of tan, where they ſhould conſtantly remain, and muſt be treated in the ſame manner as other tender plants, being careful not to give them too much water in the winter, when it is very prejudicial to them, and in ſummer they ſhould have a large ſhare of free air admitted to them every day. With this treatment the plants will thrive very well, but being plants of ſlow growth in their own country, cannot be expected to make great progreſs in Europe.

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[b] Swartz.
[c] Gærtner.
[d] Browne.
[e] Long's Jamaica, 3. 724.

[f] Browne.
[g] Woodville.
[h] Hort. kew.
[i] Linn. ſyſt.
[k] Hort. kew.
[l] Forſter.

[In their native country they grow very readily from ſeed; and ſeem fond of a dry ſoil with a hot expoſure.]

3. This will live in a good greenhouſe all the winter, but in ſummer it muſt be placed abroad with other greenhouſe plants. It is of a ſlow growth, and is with difficulty propagated by layers.

Guajava. See *Pſidium.*

[Guajera. See *Chryſobalanus.*]

Guanabanus. See *Annona* and *Adanſonia.*

[GUAREA. (*From its vernacular name of* Guara *in the Weſt Indies.*)

Lin. gen. Reich. n. 515. *Schreb.* 649. *Juſſ.* 265.
Claſſ. 8. 1. Octandria Monogynia.
Nat. order of *Meliæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, four-parted, flattiſh, ſhort.

Cor. *Petals* four, ſpreading, lanceolate, obtuſe. *Nectary* tubular, cylindric, quite entire, length of the corolla, contracted at the throat.

Stam. *Filaments* none. *Anthers* eight, growing to the inner edge of the nectary, ovate.

Pist. *Germ* roundiſh, on a very ſhort pedicel. *Style* ſubulate, thick, length of the nectary. *Stigma* four-cornered, depreſſed.

Per. *Capſule* roundiſh, large, ſubſeſſile, four-grooved, four-celled, four-valved.

Seeds ſolitary, oblong, with a ſcarlet aril.

Obs. *It ſhould be diſtinguiſhed from* Trichilia, *to which it is nearly allied.*

ESSENTIAL CHARACTER.

Cal. four-cleft. *Pet.* four. *Nect.* cylindric, bearing the anthers at its mouth. *Capſ.* four-celled, four-valved. *Seeds* ſolitary.

SPECIES.

1. Guarea trichilioides. *Aſh-leaved Guarea.*
Lin. ſyſt. 360. *Reich.* 2. 157. *Swartz obſ.* 146.
Trichilia Gaura. *Lin. ſpec.* 551.
Melia Gaura. *Jacqu. amer.* 126. *t.* 176. *f.* 37. *pict.* 53.
Elutheria. *Brown. jam.* 369. 7.
Lauro affinis. *Sloan. jam.* 2. *t.* 170. *f.* 1.
Guidonia. *Plum. gen.* 4. *ic.* 147. *f.* 2.
Jito. *Marcgr. braſ.* 169. *Piſ. braſ.* 79. *t.* 80.

DESCRIPTION, &c.

This is a tree of a middling ſize, with a ſmooth trunk. Leaves pinnate, without an odd leaflet: common petioles alternate, longiſh, round, ſmooth, aſh-coloured: pairs of leaflets two to four, lanceolate-ovate, obtuſe, entire, nerved, ſmooth: partial petioles ſhort, thick, round. Racemes a foot long, axillary, ſubdivided, looſe, the branches many-flowered, the peduncles very ſhort. Calyx four-cornered, minute; ſegments blunt, ſpreading[a].

All parts of the plant, eſpecially the bark, ſmell ſtrong of muſk, and may be uſed, inſtead of that perfume, for many purpoſes. The wood is full of a bitter reſinous ſubſtance, which renders it unfit for rum-hogſheads; being obſerved to communicate both its ſmell and taſte to all ſpirituous liquors: but it is often cut for ſtaves and heading, when there is a ſcarcity of other lumber. The powder of the bark is ſaid to be a good emetic; and is ſometimes uſed among the negroes for that purpoſe[b].

Native of South America and the Weſt India iſlands, in woods and by rivers ſides: flowering in January and February. The Engliſh call it Muſk-wood and Alligator-wood: the French Bois rouge.

It was cultivated in 1777, by Mr. James Gordon[c].

Guari-paribi. See *Bignonia.*

Guava. See *Pſidium.*

Guayacan. See *Guaiacum.*]

Guazuma. See *Theobroma.*

[GUETTARDA. (*So named by Linneus in honour of J. Etienne Guettard, member of the Academy of Sciences at Paris, author of* Obſervations ſur les Plantes, 1747, &c.)

Lin. gen. n. 1064. *Reich.* 1161. *Schreb.* 1437. *Juſſ.* 207. *Gærtn. t.* 36. Haleſia. *Brown. t.* 20.
Claſſ. 21. 7. Monoecia Heptandria. (Hexandria, *Sw.*)
Nat. order of *Tricoccæ. Rubiaceæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, cylindric, very ſhort, quite entire, the outer edge more prominent, deciduous (ſuperior, *G.*)

Cor. one-petalled, funnel-ſhaped: *tube* cylindric, long; *border* ſix to nine-cleft, with rounded lobes ſhorter than the tube, (eight-cleft, *Juſſieu.*)

* *Male flowers.*

Stam. *Filaments* four to ſix or ſeven in the throat of the corolla. *Anthers* linear, (eight, oblong, ſubſeſſile, *J.*)

Pist. *Style* filiform.

* *Female flowers in the ſame plant.*

Pist. *Germ* roundiſh, inferior. *Style* filiform, longer than the ſtamens. *Stigma* ſubovate, (club-ſhaped, *J.*)

Per. *Drupe* dry, roundiſh, depreſſed, toroſe, (with a ſinuous nut, ſix-celled and containing ſix ſeeds, *J.*)

Seed. *Nut* lobed, celled, perforated in the periphery for cells: kernels ſolitary, four to ſix, roundiſh, bent at right angles.

Obs. *Number of parts and cells various.* J. *Some flowers have ſix, others four ſtamens.* Sw.

ESSENTIAL CHARACTER.

Cal. cylindric. *Cor.* ſix or ſeven-cleft, funnel-ſhaped. *Piſt.* one. *Drupe* dry.

SPECIES.

1. Guettarda ſpecioſa.
Lin. ſpec. 1408. *Reich.* 4. 152. *Oſb. it.* 275. *Gærtn. fruct.* 179. *Brown. jam.* 205. *t.* 20. *f.* 1.
Leaves ſubcordate, ovate, obtuſe with a point, ſilky underneath; flowers with ſix or ſeven ſtamens.

2. Guettarda rugoſa.
Swartz prodr. 59. *Vahl ſymb.* 3. 50.
Leaves ſubcordate ovate acute, tomentoſe beneath ſcabrous above; flowers with ſix ſtamens.

3. Guettarda elliptica.
Swartz prodr. 59.
Leaves elliptic pubeſcent, flowers with four ſtamens.

4. Guettarda membranacea.
Swartz prodr. 59.
Leaves ovate acuminate membranaceous, ſubhiſpidly ſcabrous; flowers with four ſtamens.

DESCRIPTIONS, &c.

1. This tree has the habit of Hernandia. The leaves are very large, ovate or obovate, rounded at the end with a point, naked, quite entire, with alternate veins; the petioles are much ſhorter than the leaves, and compreſſed. The peduncle is oppoſite to the petiole, but on the upper branches there are two oppoſite peduncles; they all terminate in a very ſhort dichotomous cyme. The male flowers are ſeſſile, alternate, from the upper ſide only of the cyme: calyxes ſomewhat tomentoſe, ſcarcely apparently two-lobed. Tube of the corolla tomentoſe: lobes of the border oval-oblong, one-third only of the length of the tube. No germ; ſtyle ſhorter by half than the tube: ſtigma cylindric-headed, obtuſe. The female flowers are like the males; but have a germ ſucceeded by a drupe, containing ſix large, woody ſeeds, connected together[d].

According to Gærtner, the flowers are either hermaphrodite or monoecous: the ſtamens from ſix to nine: the pericarp a dry, inferior, berried drupe, incloſing a bony ſhell, deeply umbilicated on both ſides, and divided into four or ſix lobes variouſly wrinkled, reſembling that of a walnut; perforated in the circumference for the cells[e].

Browne obſerves that it ſeldom riſes above eight or ten feet in height, or exceeds three or four inches in diameter; that the bark is ſmooth; and the diſpoſition of the flowers very remarkable, as well as the texture and form of the leaves. Guettarda of Oſbeck, it. 275. is ſcarcely the ſame ſpecies. G. ſpecioſa of Aublet. guian. 317. is different from this.

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[a] Swartz. [b] Browne. [c] Hort. Kew.

[d] Linn. ſpec. [e] Gærtner.

Dr. Browne named it after the Rev. Dr. Hales, author of the Vegetable Statics.

It is native of Jamaica, Java, and the Society iſlands in the South Seas.

2. Branches round, oppoſite, ſcarred, ſmooth below, villoſe above. Leaves petioled, from two to three inches long, crowded towards the ends of the branchlets, oppoſite, ovate-oblong, ſometimes narrower towards the baſe, terminated by a ſmall point, quite entire, very rugged on the upper ſurface with minute elevated mucronated dots, underneath netted-veined and wrinkled, with very minute villoſe hairs ſcattered about. Stipules awl-ſhaped, deciduous. Peduncles axillary, oppoſite, compreſſed, villoſe, purple, dilated towards the top, twice or thrice dichotomous. Flowers ſometimes in a head ſubſeſſile. A ſeſſile flower in each diviſion. Bracte awl-ſhaped, deciduous, at the diviſions and below each flower. Calyx pitcher-ſhaped, obſcurely toothed. Tube of the corolla an inch and half long, ſoft and ſomewhat ſilky. Fruit the ſize of a pea, aſh-coloured with villoſe hairs. Found by Weſt, in the iſland of Santa Cruz [f].

Native of the Eaſt Indies [g].

3. Native of Jamaica.

4. Native of St. Domingo [h].

According to Juſſieu, we are to refer to this genus *Cadamba jaſminiflora*, of Sonnerat, ind. 2. 228. t. 128. which is the ſame with *Rava-pou* of Rheede malab. 4. t. 47, 48. and Nyctanthes hirſuta of Linneus, which is certainly a Guettarda according to Gærtner, 180.—He doubts whether *G. coccinea* Aublet. Guian. t. 123. be of this genus, or of Hamelia, or between both. See *Iſertia.*]

Guidonia. See *Guarea*, *Lætia*, *Samyda*.

GUILANDINA. (*So named in honour of Melchior Guilandinus or Wieland, of Pruſſia, a great traveller; he ſucceeded Anguillara at Padua in* 1561, *and Fallopius in* 1564. *He died in* 1589. *His publications are,* De Stirpibus 1558—de Papyro 1572.)

Lin. gen. n. 517. *Reich.* 560. *Schreb.* 704. *Gærtn. t.* 148. *Juſſ.* 350. Bonduc. *Plum.* 39. Gymnocladus & Moringa. *Juſſ.* 346, 348. *Gærtn. t.* 147. *Schreb. n.* 1537 & 1606.

Claſſ. 10. 1. Decandria Monogynia.

Nat. order of *Lomentaceæ*. *Leguminoſæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, (urceolate or pitcher-ſhaped, G.) *Tube* ſhort, turbinate, permanent, with an oblique mouth. *Border* five-parted, nearly equal, ſpreading, deciduous: *diviſions* oblong, broader on the outſide and rounded; the two upper ones a little ſhorter, the loweſt a little longer.

Cor. *Petals* five, inſerted into the neck of the calyx; the uppermoſt roundiſh, concave, aſcending, a little ſhorter; the reſt oblong, broader in front, rounded at the tip, reflex-ſpreading, longer than the calyx, and the two loweſt a little longer than the middle ones.

Stam. *Filaments* ſubulate, thicker at the baſe and villoſe, decumbent, inſerted into the neck of the calyx, ſhorter than the corolla, unequal; the lower ones gradually longer. *Anthers* oblong, affixed to the back.

Pist. *Germ* oblong. *Style* filiform, length of the ſtamens. *Stigma* ſimple.

Per. *Legume* rhomboidal, the upper ſuture convex, from ſwelling compreſſed, one-celled, with tranſverſe partitions.

Seeds bony globular-compreſſed, ſolitary between the partitions.

Obs. *I have only ſeen the male flowers of* G. Bonduc *and* Bonducella; *it remains therefore to be inquired whether they are dioicous or polygamous.*

ESSENTIAL CHARACTER.

Cal. one-leafed, ſalver-ſhaped. *Petals* inſerted into the neck of the calyx, nearly equal. *Seed-veſſel* a legume.

SPECIES.

1. Guilandina Bonduc. *Yellow Bonduc*, or *Nicker-tree.* *Lin. ſpec.* 545. *Reich.* 2. 260. *hort. cliff.* 158. *upſ.* 102. *fl. zeyl. n.* 157. (Cæſalpina). *Plum. gen.* 25. (Bonduc majus). *Pluk. alm. t.* 2. *f.* 2. (Acacia). *Sloan. jam.* 2. 40. (Lobus). *Rumph. amb.* 5. 89. *t.* 48.
Prickly; pinnas ovate, with ſolitary prickles on the leaflets.

2. Guilandina Bonducella. *Gray Bonduc.* *Lin. ſpec.* 545. *Reich.* 2. 260. *fl. zeyl. n.* 156. *hort. upſ.* 101. *Brown. jam.* 228. 1. *Gærtn. fruct.* 2. 315. *Lour. cochinch.* 265. *Plum. gen.* 2. (Bonduc minus). *Breyn. prod.* 3. *app.* 33. *t.* 28. (Criſta pavonis). *Sloan. jam.* 2. 41. (Lobus). *Rumph. amb.* 5. 92. *t.* 49. *f.* 1. *Rheed. mal.* 2. 35. *t.* 22. *Forſk. deſcr.* 135. *n.* 20.
Arbor exotica ſpinoſa fol. Lentiſci. *Bauh. pin.* *Raii hiſt.* 1743.
Arbor ſpin. indica muricatis ſiliquis. *Park. theat.* 1551. *f.* 3.
Lobus echinatus. *Ger. emac.* 1553. 22.
Prickly; pinnas oblong-ovate, with double prickles on the leaflets.

[3. Guilandina Nuga. *Lin. ſpec.* 546. *Reich.* 2. 261. *Rumph. amb.* 5. 94. *t.* 50. (Nugæ). *Rheed. mal.* 6. 33. *t.* 19. (Kaka Mullu).
Stem unarmed; the primary petiole of the leaves with double prickles underneath.]

4. Guilandina Moringa. *Smooth Bonduc.* *Lin. ſpec.* 546. *ſyſt.* 396. *Reich.* 2. 261. *mant.* 379. *fl. zeyl. n.* 155. *mat. med.* 112. *Plenck, ic. t.* 328. *Swartz obſ.* 167.
Moringa pterygoſperma. *Gærtn. fruct.* 2. 314.
Moringa zeylanica, &c. *Burm. zeyl.* 162. *t.* 75.
Morungu. *Rheed. mal.* 6. 19. *t.* 11. *Rumph. amb.* 1. 184. *t.* 74, 75. *Raii hiſt.* 1745.
Hyperanthera Moringa. *Vahl ſymb.* 1. 30.
Balanus Myrepſica. *Blackw. t.* 286.
Anoma Moringa. *Lour. cochinch.* 879.
Lignum peregrinum aquam cæruleam reddens. *Bauh. pin.* 416.
Unarmed; leaves ſubbipinnate, lower leaflets ternate.

5. Guilandina dioica. *Hardy Bonduc.* *Lin. ſpec.* 546. *Reich.* 2. 261.
Hyperanthera dioica. *Vahl ſymb.* 1. 31.
Gymnocladus canadenſis. *Lamarck encycl.* 1.
Bonduc canadenſe, &c. *Duham. arb.* 1. 108. *t.* 103.
Unarmed; leaves bipinnate, at the baſe and tip ſimply pinnate.

[6. Guilandina gemina. *Lour. cochinch.* 265.
Prickly, leaves pinnate, calyx five-leaved, fruit in pairs.]

DESCRIPTIONS, &c.

1. Leaves near a foot and half long, compoſed of ſix or ſeven pairs of pinnæ, each of which has as many pairs of leaflets, which are ovate and entire; the principal midrib of the leaf is armed with ſhort, crooked, ſingle thorns, placed irregularly; the ſtalks are alſo armed with thorns, which are larger. The ſtalks at firſt grow erect, but afterwards twine about the neighbouring trees and ſhrubs. The flowers are in long axillary ſpikes. Petals equal, concave yellow. Legume broad, thick, three inches long and two broad, cloſely armed with ſlender ſpines, opening with two valves, each incloſing two hard ſeeds about the ſize of children's marbles, of a yellowiſh colour.

[Native of both Indies. Introduced 1690, by Mr. Bentick [*].]

2. The ſecond ſort differs from the firſt in having much ſmaller leaves, ſet cloſer together; and below each pair of leaflets are two ſhort ſtiff crooked ſpines, which are oppoſite: the flowers are of a deeper yellow, and the ſeeds are aſh-coloured.

[Sloane affirms that there is no difference between this and the precedent but the colour of the nut, which in the foregoing is yellowiſh, finely variegated with annular or interrupted ſaffron-coloured zones. The integument is alſo ſtony, but the middle lamina is of a full roſe or fleſh colour[b].

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[f] Vahl. [g] Swartz. [h] Ibid.

[*] Hort. kew.

This weakly plant ſpreads a great way about the root, or riſes among the neighbouring buſhes, if it finds a due ſupport. The ſtalk and branches are very full of thorns that arch backwards. The ſeeds are gray, and commonly uſed inſtead of marbles, by boys, in the ſugar colonies[c].

Corolla almoſt regular, with no claws to the petals. Legume ovate-rhomboidal, ſwelling in the middle but flatted at the ſides, with ſpines all over it, ſtiff, but not pungent, ferruginous bay-colour on the outſide, pale within; the two valves very ſmooth on the inſide, without any veſtige of a partition. Seeds two or three, ovate-globular, very ſmooth and ſhining, ſeeming as if they had very fine, parallel, annular clefts, but quite entire; of a livid lead colour, with a brown mark at the navel.

There is a greater affinity between Cæſalpinia and Guilandina than between this and Moringa[d].

In Egypt, the nuts of both theſe ſorts are uſed by the women, ſtrung in necklaces, and hung about their children, by way of amulet, to guard them from ſorcery[e].

They are often caſt aſhore on the north-weſt coaſts of Ireland and Scotland, and are called by the inhabitants of the latter Molucca Beans[f].

This tree makes a good fence.—It is native of both Indies, China, and New Zealand; and was cultivated by Mr. George Willmer at Stratford Bow, before 1640. He raiſed it from ſeed brought from the Weſt Indies to the height of three or four feet, but it periſhed the next winter, for want of ſuch due keeping, as was fit for ſuch tender plants[g].

Johnſon in Gerarde calls the ſeeds, *Beazor Nuts*, and ſays that they were offered to ſale for Eaſt-Indian Bezoar.

3. Branches thorny. Leaves thick, ſolid, ſmooth, oppoſite. Flowers yellow[h]. Legumes ſmooth.

Native of Amboina[i], and Malabar, in ſwamps by the ſides of rivers.

4. This tree has a thick root of a ſofter ſubſtance than uſual. Trunk of a middling ſize, from twelve to twenty feet in height, ſmooth, with an aſh-coloured bark. Branches rather erect. Leaves bipinnate: common petioles two or three feet long, round, ſmooth, ſtiff; the partial ones in five or ſix pairs, horizontal, compreſſed: leaflets in three pairs, ternate, oblong, entire, ſmooth, veined. Flowers in racemes, which are long, axillary, round, pubeſcent, ſubdivided, many-flowered; the ſubdiviſions branched, directed one way, bent down; under theſe are minute, deciduous ſcales. Calyx five-leaved; three upper, two lower; all equal, bent back, lanceolate, obtuſe, coloured, whitiſh or pale red, pubeſcent. Corolla: four of the petals anterior, equal, bent down, pale; one poſterior, erect, a little larger, whitiſh: the baſe nectareous. Filaments: five longer, being the length of the larger petal, and upright: anthers cordate, incumbent, fertile, yellow: the five ſhorter ones barren. Germ lengthened out, three-cornered, acuminate, pubeſcent: ſtyle ſubulate, ſhort: ſtigma acute. Legume two feet long, ſtreaked, three-valved, one-celled. Seeds fifteen or ſixteen, diſtinct, placed longitudinally, oblong, three-cornered, with three membranaceous wings[k].

Gærtner calls the ſeed-veſſel a Capſule: and deſcribes it as fungous-coriaceous, ſubulate, furrowed, three-cornered; the valves thick, angular inwards, and hollowed in the internal angle with large round excavations for the reception of the ſeeds: which are ſometimes eighteen in number, in one row, of a dirty brown colour; they are fixed, not to the ſide, but to the middle of the valves.

This ſpecies therefore ſeems different from the Guilandinas, in the calyx, ſtamens, fruit and habit[l].] See Moringa.

The root when young is ſcraped, and uſed by the inhabitants as Horſe-radiſh is in Europe, having much the ſame ſharp taſte; as have alſo the ſeeds.

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[b] Gærtner. [c] Browne. [d] Gærtner. [e] Sloane and Long.
[f] Sloane. [g] Park. theat. [h] Hort. malab. [i] Linn. ſpec.
[k] Swartz. [l] Swartz and Linn. ſyſt.

[Native of the Eaſt Indies; cultivated in Jamaica and Egypt.—Mr. Miller cultivated it here in 1759[m].

Moringa aptera, which is Balanus myrepſica and Been album offic. has ſeeds double the ſize of this; turbinate, ſnow white, without any veſtige of wings[n].]

5. Stem erect, thirty feet high or more, dividing into many branches, covered with a very ſmooth blueiſh aſh-coloured bark. Leaflets oval, very ſmooth and entire, alternate. There are male and female flowers on different plants.—Native of Canada, whence it was firſt brought to Paris.

[Cultivated in 1748, by Archibald Duke of Argyle[o].

6. Stem ſhrubby, large, ſubereсt, with many climbing branches, on which are many recurved, ſcattered prickles. Leaves ſimply pinnate, without an odd leaflet: leaflets ovate, obtuſe, quite entire, ſmooth, with a ſolitary prickle at the baſe. Flowers yellow, in compound, looſe, terminating racemes. Calycine leaflets obtuſe, woolly, bell-ſhaped-ſpreading. Petals ſcarcely longer than the calyx. Nectary four ovate glands. Filaments hairy, equal: anthers ſagittate. Germs two longiſh: ſtyles two thick, longer than the ſtamens: ſtigmas blunt. Legumes two, ſubovate, compreſſed, echinate. Seeds two or three, roundiſh, ſhining, aſh-coloured, very hard, containing a roundiſh, oily kernel like an almond.

Native of Cochinchina, and more like the Bonduc than Bonduccella[p].]

PROPAGATION AND CULTURE.

The four firſt ſorts being natives of warm countries, will not live through the winter in England, unleſs they are placed in a warm ſtove, and the pots plunged into the tan-bed. They are propagated by ſeeds, but thoſe of the two firſt ſorts are ſo hard, that unleſs they are ſoaked two or three days in water before they are put into the ground, or placed under the pots in the tan-bed to ſoften their covers, they will remain years in the ground without vegetating: when the plants come up, they will be fit to tranſplant in a ſhort time; then they ſhould be each tranſplanted into a ſmall pot, filled with light freſh earth, and plunged into a moderate hot-bed of tanners bark, ſhading them till they have taken freſh root; then they muſt be treated in the ſame manner as other tender exotic plants, giving them a large ſhare of air in warm weather, and but little water; and when the plants have advanced to be too tall to remain in the frames, they muſt be removed into the bark-ſtove and plunged into the hot-bed, where they will make great progreſs, provided they have not too much water, eſpecially during the winter ſeaſon, for theſe plants are very impatient of moiſture in cold weather.

The fourth ſort requires the ſame treatment as thoſe before-mentioned, but the ſeeds will grow without being ſteeped in water; and the plants are with difficulty ſhifted from one pot to another, for their roots are large, fleſhy, and have but few fibres; ſo that unleſs great care is taken, all the earth will fall away from them, which often cauſes their ſtalks to decay almoſt to the root, and ſometimes occaſions the loſs of the plants. This plant muſt be ſparingly watered at all times, but particularly in cold weather, when moiſture will cauſe it to rot in a ſhort time.

5. This ſort will live abroad, and is never hurt by froſt. It is propagated by cutting off ſome of the horizontal roots, or by ſuckers. It requires a light ſoil, not too moiſt.

[Guilandinoides. See *Guiacum* and *Schotia*.
Guinea Hen Weed. See *Petiveria*.
——— Pepper. See *Capſicum*.
——— Wheat. See *Zea*.
Gum elaſtic. See *Iatropha*.
—— Elimi-tree. See *Amyris* and *Burſera*.
—— Lac. See *Croton*.
—— Succory. See *Chondrilla*.]

GUNDELIA. (*So named by Tournefort, in honour of Dr. Andrew Gundelſcheimer, who found it in his travels, in company with Tournefort, in the Levant.*)

Lin. gen. 1000. *Reich.* 1085. *Schreb.* 1356. *Tournef.* 486. *Juſſ.* 175. Hacub. *Vaill. act. gall.* 1718. *f.* 16.

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[m] Hort. kew. [n] Gærtner. [o] Hort. kew.
[p] Loureiro.

Claſſ. 19. 5. Syngeneſia Polygamia Segregata.
Nat. order of *Compoſitæ Capitatæ.—Cinarocephalæ*, Juſſ.

GENERIC CHARACTER.

CAL. *common* ſcarcely any, except the leaves ſurrounding the compound receptacle.

COR. *Compound* tubular, uniform: *Corollules* hermaphrodite five, equal.
Proper one-petalled, club-ſhaped: *border* bellying, five-cleft, upright.

STAM. *Filaments* five, capillary, very ſhort. *Anther* cylindric, tubular, long.

PIST. *Germ* ovate, immerſed in the receptacle, crowned with very ſmall ſcales, inferior. *Style* filiform, longer than the corolla. *Stigmas* two revolute.

PER. none; but the ſeeds are totally immerſed and hid in the receptacle.

SEEDS ſolitary, roundiſh, acuminate, crowned with an obſcure rim; the ſide ones are abortive.

REC. *Common* conic, covered on every ſide with partial receptacles, divided by three-cuſped chaffs.
Partial obtuſely conic, quadrangular, truncate, with five little pits, one of which is in the centre, the others in the circumference, for the inſertion of the five floſcules.
OBS. *One central flower hermaphrodite, four marginal male.*

ESSENTIAL CHARACTER.

Cal. ſcarcely any, five-flowered. *Cor.* tubular, male and hermaphrodite. *Recept.* chaffy. *Down* none.

SPECIES.

1. Gundelia Tournefortii.
Lin. ſpec. 1315. *Reich.* 3. 947. *Gron. orient.* 251.
G. glabra. *Mill. dict. n.* 2. *fig. t.* 287.
G. orientalis, &c. capite glabro. *Tournef. cor.* 51. *itin.* 2. 108. fig.
Eryngium ſyriacum, &c. *Mor. hiſt.* 3. 167.
Silybum Dioſcoridis, &c. *Rauw. itin.* 74. fig.
β. G. orient, &c. flor. intenſe purpureis, cap. araneoſa lanugine obſito. *Tournef. cor.* 51.
G. Tournefortii. *Mill. dict. n.* 1.

DESCRIPTION, *&c.*

[This is a milky plant. Leaves alternate, prickly: floral leaves decurrent. Flowers terminating. Habit that of a thiſtle [q].]

Root perennial, running deep into the ground. Stalks ſeldom more than a foot and half high. The under leaves are long, narrow, and ſerrate, the teeth ending in a ſpine; the other leaves are broader, irregularly ſlaſhed to the midrib, and armed at the points with ſharp prickles. The ſtalks divide at top into ſeveral branches, which are armed with leaves of the ſame form, but narrower: each is terminated by a conical head of flowers, reſembling thoſe of Dipſacus, ſurrounded at the baſe by a circle of long narrow prickly leaves. Few of the ſeeds ripen perfectly; and if rain happens when the plants are in flower, the germ periſhes, which is the caſe with ſeveral other plants whoſe flowers are collected into heads.

Native of the Levant.

It flowers in june, and the ſeeds ripen in auguſt. The ſeeds were given to Mr. Miller by Dr. Alexander Ruſſel, of Lime-ſtreet, who procured them from Aleppo. [Cultivated by Mr. Miller in the year 1739.]

PROPAGATION AND CULTURE.

This plant is propagated by ſeed, which ſhould be ſown the beginning of march, in a warm dry border of freſh, but lean earth, in the place where the plants are deſigned to remain. When the plants come up, they muſt be carefully cleared from weeds; as they grow large, they ſhould be thinned, leaving the plants which are deſigned to remain, about two feet aſunder, that they may have room to ſpread. After this there is no other culture required, but to keep them clear from weeds; and if the froſt ſhould prove ſevere in winter, the plants ſhould be covered with ſtraw or peas-haulm to protect them; but this covering muſt be taken off in mild weather; in two years they will produce their flowers, when they will make a fine appearance amongſt other hardy plants in the pleaſure-garden. They flower in may, and the plants loſe their ſtalks and leaves in autumn, but their roots will abide many years.

[GUNNERA. (*So named by Linneus in honour of Joan. Erneſt. Gunnerus, Biſhop of Drontheim in Norway, founder of the Society at Drontheim,* 1761, *author of Flora Norvegica,* 1766.)
Lin. gen. Reich. n. 1102. *Schreb. n.* 1378. *Juſſ.* 405, 452.
Claſſ. 20. 1. Gynandria Diandria.
Nat. order of *Urticæ.* Juſſ.

GENERIC CHARACTER.

CAL. *Ament* verticilled: *ſcales* one-leafed, one-flowered, ſetaceous, the length of the flower, permanent. *Perianth* none, except the cruſt of the ſeed, which has two teeth.

COR. none.

STAM. *Filaments* two, very ſhort, oppoſite, ſitting on the ſides of the germ on the outſide of the teeth. *Anthers* oblong.

PIST. *Germ* ovate, with two teeth at the tip. *Styles* two, ſhort, ſubulate, between the teeth of the germ. *Stigmas* ſimple.

PER. none.

SEED ſingle, ovate, the bark formed from the cruſt of the perianth.

ESSENTIAL CHARACTER.

Ament with one-flowered ſcales. *Cal.* and *Cor.* none. *Germ* two-toothed. *Styles* two. *Seed* one.

SPECIES.

1. Gunnera perpenſa. *Marſh-Marygold-leaved Gunnera.*
Lin. ſyſt. 819. *Reich.* 4. 42. *mant.* 121. *amoen.* 7. 495.
Perpenſum blitiſpermum. *Burm. prodr.* 26.
Petaſites africanus, calthæ paluſtris folis. *Herm. lugdb.* 488.
Blitum afric. &c. *Pluk. alm. t.* 18. *f.* 12.

DESCRIPTION, *&c.*

Leaves radical, cordate, obtuſe, ſmooth, veined, repand, tooth-crenate; with the petioles ſcarcely pubeſcent. Scape two feet high. Ament terminating, long, compound; the ſubdiviſions ſcattered, ſimple, diſtinct: bractes lanceolate, ſhort. Floſcules naked.—Native of the Cape of Good Hope [r].

Introduced in 1767, by Mr. William Malcolm [s].

GUSTAVIA. (*So named by the younger Linneus in memory of Guſtavus III. king of Sweden, who preſented a great collection of Indian plants to the elder Linneus.*)
Lin. gen. Reich. n. 917. *ſuppl.* 51. *Diſſ. Surin.* 18. *Gærtn. t.* 138. Pirigara. *Aubl. guian. t.* 192, 193. *Juſſ.* 326.
Claſſ. 16. 7. Monadelphia Polyandria.
Nat. order of *Myrti.* Juſſ.

GENERIC CHARACTER.

CAL. none; but the *Receptacle* above ſurrounded with a rim, flat, broad, bald.

COR. *Petals* ſix or eight, ſlightly connected at the baſe, ovate, ſeſſile, large.

STAM. *Filaments* very numerous, ſhorter than the petals, uniting at the baſe into an upright bell diſtant from the ſtyle. *Anthers* ſmall, oblong, upright, ſhorter by half than the petals.

PIST. *Germ* turbinate, inferior, flat, bald between the petals and the ſtyle. *Style* conical, very ſhort, permanent. *Stigma* blunt. (lobed. *G.*)

PER. *Berry* ſubgloboſe, ſubconical, truncate, ſix-celled, crowned with the rim of the receptacle. (four to ſeven-celled. *G.*)

SEEDS. *Beans* ſeveral, oval, ſmooth, mutilated on one ſide at the baſe; with a cartilaginous twiſted *appendix.*

ESSENTIAL CHARACTER.

Cal. none. *Pet.* ſeveral. *Berry* many-celled. *Seeds* appendicled.

SPECIES.

1. Guſtavia auguſta.
Lin. ſyſt. 620. *Reich.* 3. 370. *diſſ. pl. ſurin. p.* 18. *c. tab. Suppl.* 313.
G. meizocarpa. *Gærtn. fruct.* 2. 264.
Pirigara tetrapetala. *Aublet. guian.* 487. *t.* 192.
Japarandiba. *Piſ. braſ.* 121. *Marcgr. braſ.* 109. *fig. Raii hiſt.* 1646.

DESCRIPTION, *&c.*

A tree, with thickiſh branches, and from twenty to thirty feet high. Leaves alternate, ſubſeſſile, ſomewhat crowded, in the upper part broad-lanceolate, narrower at the baſe, from a ſpan to a foot in length, ribbed, ſubſerrate, ſmooth on both ſides. Peduncles from one to three, terminating, bearing one flower, and having one joint. Flower very ſpecious, larger than the white Water-Lily, with a large, naked, bald diſk or receptacle between the corolla and the ſtyle: petals white, with red tips, the conſiſtence of the White Lily. Filaments united at bottom into a membrane, and being inſerted into the baſe of the corolla, are of the nature of thoſe in the claſs Icoſandria: ſtyle minute, yellow[c].

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[q] Juſſieu.

[r] Linn. mant.

[s] Hort. cliff.

The ſeed-veſſel is a juiceleſs berry, of a turbinate-globular-form, with muſcular-like ſwellings, truncate at top, and ſlightly concave, produced at bottom into a conical furrowed peduncle: the ſkin is coriaceous, whitiſh aſh-coloured, veined, yellow within, and very ſmooth: the cells are from four to ſeven; and the partitions are thin, like paper, and flexuoſe. The ſeeds are from three to five in each cell, ovate, variouſly angular from the preſſure of thoſe next them, of a yellowiſh cinnamon colour, fixed to the internal angle of the cells from the top to the middle by permanent, twiſted umbilical chords, ſo that the upper ones are pendulous, but the lower obliquely or horizontally decumbent[d]. The flowers ſmell like the Lily; but the wood is extremely fetid, even after it is dry: the inhabitants uſe it for hoops[e]. It is a native of Surinam and the iſland of Cayenne.

Pirigara Lexapetala, *Aublet guian.* 490. *t.* 193. is a diſtinct ſpecies from this[f].]

GUTTA. See *Cambogia.*

[GYMNANDRA. See *Bartſia.*

GYMNANTHES. (Γυμνανθης, *having naked flowers.*)
Lin. gen. Schreb. n. 1465. *Swartz prodr.* 95.
Claſſ. 21. 8. Monoecia Monadelphia.

GENERIC CHARACTER.

* *Male flowers.*

CAL. *Ament* compound, with pedicels tripartite or trichotomous, anther-bearing.

COR. none.

STAM. *Filaments* naked, or pedicels tripartite or trichotomous, ſcattered, placed on every ſide of the ament, very ſhort, deciduous. *Anthers* oblong, minute, three-celled.

* *Female flowers* on the ſame or a different ſhrub, ſolitary or amentaceous.

CAL. *Perianth* none, but one or two ſcales at the baſe of the germ.

COR. none.

PIST. *Germ* roundiſh, ſuperior. *Style* ſcarcely any, or very ſhort, three-cornered. *Stigmas* three, linear, acute, channelled, reflex.

PER. *Capſule* tricoccous, three-celled, three-valved.

SEEDS ſolitary, roundiſh.

ESSENTIAL CHARACTER.

MALE. *Ament* naked. *Perianth* and *Corolla* none. *Stam.* pedicels three-parted or three-forked, anther-bearing.

FEM. *Ament* or germ pedicelled. *Cor.* none. *Style* trifid. *Capſ.* tricoccous, three-celled.

SPECIES.

1. Gymnanthes elliptica.
Swartz prodr. 96.
Diœcious: ſtamens three-parted, females amentaceous.

2. Gymnanthes lucida.
Swartz prodr. 96.
Monoicous: ſtamens trichotomous; females ſolitary, pedicelled.

Theſe ſhrubs were found by Swartz in the Weſt-Indies; the firſt in Jamaica, the ſecond in Hiſpaniola.

GYNOPŌGON. (*From* Γυνη *a woman, and* πωγων *a beard. The ſtigma of the flower being bearded.*)
Lin. gen. Schreb. n. 414. *Forſt. gen.* 18. *Juſſ.* 148.
Claſſ. 5. 1. Pentandria Monogynia.
Nat. order of *Apocineæ.* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, very ſmall, half-five-cleft, permanent: *ſegments* linear, acute, erect.

COR. monopetalous, contorted: *tube* cylindrical, ventricoſe below the tip, contracted at the throat: *border* flat, five-parted, *ſegments* ovate.

STAM. *Filaments* five, very ſhort, inſerted into the tube above the middle. *Anthers* erect, linear, within the tube.

PIST. *Germ* ovate. *Style* filiform, ſhorter by half than the tube. *Stigma* globular, two-lobed, villoſe at the tip.

PER. *Berry* pedicelled, ſubglobular, coriaceous, filled with the ſeed.

SEED ſingle, cartilaginous, ſubbilocular; with one or two kernels.

OBS. *The fruit is generally abortive, the ſeed not having kernels: the germs when cut through have two cells, and two ſeeds in each cell.*

ESSENTIAL CHARACTER.

Cal. half-five-cleft, inferior, permanent. *Cor.* five-parted, tube ventricoſe below the tip, throat contracted. *Stigma* globular, two-lobed. *Berry* pedicelled, ſubglobular. *Seed* cartilaginous, ſubbilocular.

SPECIES.

1. Gynopogon ſtellatum.
Forſt. gen. 18. *n.* 1. *fl. auſtr. n.* 117.
Leaves in whorls, three together, lanceolate.

2. Gynopogon Alyxia.
Forſt. fl. auſtr. n. 118.
Leaves in whorls, five together, obovate.

3. Gynopogon ſcandens.
Forſt. fl. auſtr. n. 119.
Leaves oppoſite, ovate, ribbed.

Natives of the iſlands in the South ſeas. The firſt of the Society and Friendly iſlands; the ſecond of Norfolk iſland; and the third of the Society iſlands[g]. At Otaheite in may 1774.]

GYPSOPHĬLA. (*From* γυψος & φίλη, *amica gypſi, fond of a gypſeous or calcareous ſoil.*)
Lin. gen. n. 563. *Reich.* 612. *Schreb.* 768. *Juſſ.* 301.
Claſſ. 10. 2. Decandria Digynia.
Nat. order of *Caryophyllei.*

GENERIC CHARACTER.

CAL. *Perianth* bell-ſhaped, angular, five-parted; *leaflets* ovate, permanent.

COR. *Petals* five, ovate, obtuſe, ſpreading, ſubſeſſile.

STAM. *Filaments* ſubulate, ſpreading. *Anthers* roundiſh.

PIST. *Germ* almoſt globular. *Styles* filiform, gaping. *Stigmas* ſimple.

PER. *Capſule* globular, one-celled, five-valved.

SEEDS very many, roundiſh.

OBS. G. paniculata *is diœcous.*

ESSENTIAL CHARACTER.

Cal. one-leafed, bell-ſhaped, angular. *Petals* five, ovate, ſeſſile. *Capſ.* globular, one-celled.

SPECIES.

[1. Gypſophila repens. *Creeping Gypſophila.*
Lin. ſpec. 581. *ſyſt.* 415. *Reich.* 2. 324. *amoen.* 3. 23. *Ger. prov.* 409. *t.* 15. *f.* 2. *Jacqu. auſtr.* 5. *t.* 407. *Villars dauph.* 3. 602.
Saponaria. *Lin. hort. cliff.* 166. 5. *Hall. helv. n.* 905.
Alſine orientalis, &c. *Buxb. cent.* 3. 32. *t.* 60.
Caryophyllus alpinus, &c. *Bocc. muſ.* 23. *t.* 5. *f.* 1. *Raii ſuppl.* 483.
C. ſaxatilis, fol. gramineis, minor. *Bauh. pin.* 211.
Leaves lanceolate, ſtamens ſhorter than the emarginate corolla.]

2. Gypſophila proſtrata. *Trailing Gypſophila.*
Lin. ſpec. 581. *Reich.* 2. 325. *Pluk. alm. t.* 75. *f.* 2.
Leaves lanceolate, ſmooth and even, ſtalks diffuſed, piſtils longer than the bell-ſhaped corolla.

3. Gypſophila paniculata. *Panicled Gypſophila.*
Lin. ſpec. 583. *Reich.* 2. 325. *amoen.* 3. 23. *Jacqu. auſtr.* 5. 26. *t. app.* 1.
Leaves linear-lanceolate, the lower ones ſcabrous; ſtamens minute; ſtyles longer than the corolla.

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[c] Linn. ſuppl.
[d] Gærtner.
[e] Linn. ſuppl.
[f] Swartz & Retzius.
[g] Forſter.

[4. Gypſophila viſcoſa. *Clammy Gypſophila.*
Lin. ſyſt. 415. *Murr. in comm. gott.* 1783. *p.* 9. *t.* 3. *Ait. hort. kew.* 2. 85.
Leaves ovate-lanceolate, ſmooth and even, at the baſe cordate and claſping, the internodes of the branches clammy in the middle, petals retuſe.

5. Gypſophila adſcendens.
Lin. ſyſt. 415. *Jacqu. hort.* 2. *t.* 138.
Leaves lanceolate-linear, ſtalks proſtrate, corolla, ſtamens and piſtils all of the ſame length.

6. Gypſophila altiſſima. *Upright Gypſophila.*
Lin. ſpec. 582. *Reich.* 2. 325. *amoen.* 3. 23. *Gmel. ſib.* 4. 443. *t.* 60. (Lychnis). *hort. upſ.* 107. (Saponaria). *Bocc. muſ. t.* 5. *f.* 3. *Bauh. pin.* 211. (Caryophyllus).
Leaves lanceolate, three-nerved, ſtalks ſtraight.

7. Gypſophila Struthium. *Shrubby Gypſophila.*
Lin. ſpec. 582. *ſyſt.* 416. *Reich.* 326. *Loefl. it.* 73. *hort. cliff.* 166. 4. *D'Aſſo aragon. n.* 361. *Bauh. pin.* 206. *Raii hiſt.* 1000. 3. (Saponaria). *Barr. rar.* 64. *t.* 119. *Bocc. muſ.* 2. *t.* 122. (Kali vermic.)
Leaves linear, fleſhy, axillary, crowded, columnar.]

8. Gypſophila faſtigiata. *Triangular-leaved Gypſophila.*
Lin. ſpec. 582. *Reich.* 2. 326. *amoen.* 3. 23. *fl. ſuec. n.* 379. *Krock. ſileſ. n.* 647.
Lychnis Gypſophila. *Gmel. ſib.* 4. 144. *t.* 61. *f.* 1.
Saponaria. *Hall. jen.* 117. *t.* 2. *f.* 1.
Caryophyllus ſaxatilis, &c. *Bauh. pin.* 211.
Polygonum majus, &c. *Mentz. pug. t.* 2. *f.* 2.
Leaves lanceolate-linear, obſcurely three-cornered, ſmooth and even, obtuſe, directed one way.

9. Gypſophila perfoliata. *Perfoliate Gypſophila.*
Lin. ſpec. 583. *ſyſt.* 416. *Reich.* 2. 327. *hort. cliff.* 166. 3. (Saponaria).
Spergula multiflora, &c. *Dill. elth.* 368. *t.* 276. *f.* 357.
[β. G. tomentoſa. *Lin. ſpec.* 583. *amoen.* 4. 271. *Barrel. ic. t.* 1002. *Woolly Gypſophila.*
Leaves ovate-lanceolate, half-ſtem-claſping.

10. Gypſophila muralis. *Wall Gypſophila.*
Lin. ſpec. 583. *Reich.* 2. 327. *amoen.* 3. 24. *fl. ſuec. n.* 380. *Gmel. ſib.* 1. 125. *Pollich pal. n.* 406. *Krock. ſileſ. n.* 648. *Ger. prov.* 408. 1. *Villars dauph.* 3. 602.
Saponaria. *Lin. lapp. n.* 171. *Hall. helv. n.* 903.
Lychnis parva paluſtris, &c. *Mentz. pug. t.* 7. *f.* 4. *Raii hiſt.* 1004. 10.
Leaves linear, flat, calyxes leafleſs, ſtalk dichotomous, petals crenate.

11. Gypſophila rigida.
Lin. ſpec. 583. *Reich.* 2. 328. *amoen.* 3. 24. *Gmel. ſib.* 4. 142. *n.* 39.
Saponaria. *Lin. hort. cliff.* 166. 6. *Sauv. monſp.* 145.
Tunica minima. *Dalech. hiſt.* 1191.
Caryophyllus minimus muralis. *Bauh. pin.* 211.
Leaves linear, flat, ſtalk dichotomous, peduncles two-flowered, petals emarginate.

12. Gypſophila ſaxifraga. *Small Gypſophila.*
Lin. ſpec. 584. *ſyſt.* 416. *Reich.* 2. 328. *Willich obſ. n.* 64. *Barr. rar.* 64. *t.* 998. (Lychnis). *Villars dauph.* 3. 603.
Dianthus ſaxifragus. *Lin. ſpec. ed.* 1. 413.
Tunica ſaxifraga. *Scop. carn. n.* 506. *Hall. helv. n.* 902.
Betonica coronaria ſ. Tunica minima. *Bauh. hiſt.* 3. 337.
Caryophyllus ſaxifr. ſtrigoſior, ſ. ſylveſtris fl. minimo. *Bauh. pin.* 211.
Leaves linear, calyxes angular, with four ſcales, corollas emarginate.

DESCRIPTIONS, *&c.*

1. The whole plant is ſmooth. Root perennial, woody, very long, as thick as the little finger. Stems many, in a cloſe tuft, ſpread every way, half a foot in length, perennial; branches herbaceous, erect, from three to ſix inches high, ſimple, reddiſh at the joints, forming an imperfectly trichotomous panicle at top. Leaves lanceolate-linear, acute, glaucous, thick, ſeſſile, oppoſite, ſeldom ſo long as an inch. Flowers remote, few, on bifid or trifid peduncles. Calycine leaflets lanceolate, acuminate, concave, with a dark green or purple line along the middle, and white membranaceous edges. Corolla white or red, ſpreading very much: petals flat, a little attenuated towards the baſe, more or leſs emarginate, twice as long as the calyx. Filaments longer than the calyx, and not much ſhorter than the corolla. Anthers twin, at firſt whitiſh, but turning of a pale red. Styles ſcarcely longer than the petals. Capſules blunt [a].

Native of Siberia, Auſtria, Switzerland and Provence: flowering in ſeptember.—Introduced in 1774, by Monſ. Richard [b].

2. Root perennial. Stems ſeveral, ſmooth, round, about a foot in length, reddiſh at the joints. Panicle brachiate, trichotomous, the middle peduncle more ſimple than the others. Corolla white (Miller and Plukenet ſay purpliſh); petals obtuſe, ſpreading, channelled at the tip: ſtamens only half the length of the corolla; ſtyles a little longer than it. It much reſembles the foregoing; but differs in the root hardly creeping—the joints of the ſtalk being leſs purple—the leaflets of the calyx not keeled—the corollas ſmaller, and white, not reddiſh—the anthers yellow—the ſtyles diverging, longer than the petal—and the leaves leſs fleſhy [c].

It flowers from june to ſeptember: and was cultivated in 1759, by Mr. Miller [d].

Its native country is not certainly known; but it is ſuppoſed to come from ſome of the mountainous parts of Europe.

3. Leaves ſcabrous at the edge. Stamens at the bottom of the flower. Petals rolled back, ſmaller than in the other ſpecies. Styles bent in [e].

Root perennial, thick, fleſhy. Stems ſeveral, round, jointed, proſtrate, a foot and half long, the thickneſs of a quill, below villoſe and rugged, four-cornered and ſimple, above ſmooth. From the middle upwards ſpring aſcending branches, ſubdivided alternately, a foot long, ſhining, ſmooth, leafy, pale, ending as does the ſtem itſelf in a flowering panicle. Leaves narrow-lanceolate, acute, oppoſite, ſeſſile, quite entire, thick, ſomewhat glaucous, the loweſt three inches long, the upper ones gradually ſmaller. Peduncles branched. Flowers very numerous, and without ſcent. Calyx ſmooth, obtuſely five-grooved, leaflets blunt, green, with white edges. Petals white, oblong, blunt, quite entire, twice as long as the calyx. Native of Hungary, flowering in july and auguſt [f]. Alſo of Siberia and Tartary, according to Mr. Miller, who cultivated it in 1759 [g], and to whom the ſeeds were ſent from Peterſburgh.

4. Root annual, ſlender. Plant from a long ſpan to a foot in height, very ſmooth, glaucous. Stem erect, ſlender, branched almoſt from the bottom. Branches oppoſite, inſerted croſſwiſe, gibbous at the baſe, elongated, aſcending. Leaves ſomewhat fleſhy, acute, an inch and half long, ſpreading very much. Panicle terminating, diffuſed and almoſt faſtigiate, dichotomous; peduncles alternate, ſlender, gibbous at the baſe; pedicels rigid, long, divaricate, the outmoſt three-flowered, the axillary one-flowered. Stipules of the peduncles and pedicels lanceolate, membranaceous, ſmall, preſſed cloſe. Flowers the ſize of thoſe in the firſt and ſecond ſpecies. Calyx ſubglobular, not angular; the parts concave, blunt, joined by a membrane at the baſe. Corolla ſcarcely red, twice as long as the calyx, without ſcent, petals oblong, emarginate. Stamens equal in length to the corolla, diſtant: filaments white; anthers gray. Styles two, very ſeldom three, ſhorter than the ſtamens, bent back at top, permanent: ſtigma blunt. Capſule four-valved, with prominent ſutures. Seeds ſomewhat kidney-ſhaped, ſtriated, black [h].

Native of the Levant.—Introduced in 1773, by Mr. William Forſyth.—It flowers in june and july [i].

5. Root perennial, whitiſh, branched, and woody. Stems very many, round, ſmooth, much jointed, leafy, herbaceous, purple at the baſe and procumbent, then

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[a] Jacquin & Gerard.
[b] Hort. kew.
[c] Linn. ſpec.
[d] Hort. kew.
[e] Linn. ſpec.
[f] Jacquin.
[g] Hort. kew.
[h] Murray in comm. gott.
[i] Hort. kew.

aſcending. Branches numerous, ending in ſlender erect branched peduncles. Leaves quite entire, glaucous, pulpy, ſharpiſh, ſeſſile and oppoſite. Petals twice or three times as long as the calyx, pale fleſh-colour, obovate, emarginate or blunt. Filaments pale, almoſt the length of the corolla, anthers red. Styles ſlender, awl-ſhaped[k].

6. This differs from the next ſpecies in being twice or four times the ſize in all the parts. The ſtructure is the ſame, but yet it is a different ſpecies. The ſtalk is upright, and a foot and half in height; the leaves are the length and breadth of a finger. It is perennial.—Native of Siberia[l]. Introduced in 1777, by Abbé Nolin.—It flowers in july[m].

7. Stem ſhrubby at bottom, with leafy rudiments from the axils of the leaves, which are longer than the internodes, and acute at the end. Flowers in corymbs, white, with ovate petals. The ancients uſed this plant inſtead of ſoap; and it ſtill anſwers this purpoſe in ſome parts of Spain, where it grows naturally[n].

Introduced in 1774, by Monſ. Richard.—It flowers in july and auguſt[o].

8. *Root* perennial, very long, the thickneſs of a finger, white, woody. *Stalks* ſeveral, ſtiff, jointed, ſmooth, more than a foot long, branched, ending in a denſe, faſtigiate cyme of flowers. *Leaves* glaucous-green, oppoſite, ſeſſile, embracing the joints of the ſtalk with their broad baſes, quite entire; the uppermoſt very ſmall; next the root very many, two inches long, and a line and half broad: between the peduncles ſmall, white ſtipules. Petals pale roſe-colour. Capſule four-celled. Seeds black, lens-ſhaped[p].

The ſtalks in this ſpecies are procumbent before the flowers expand, which is not the caſe in *G. proſtrata*; hence the flowers in this are all directed one way. Linneus obſerves that the flowers in Sweden are always white, and that in its wild ſtate they are faſtigiate. The root, as in the foregoing ſpecies, has a ſaponaceous quality, and boiled with linnen or woollen may be uſed inſtead of ſoap[q].—Hence the name of *Saponaria.*—It is bitter, and has a ſolvent, aperient quality[r].

Native of Sweden, Germany, Switzerland? France, Siberia.—It flowers from june to auguſt.—Cultivated in 1759, by Mr. Miller[s].

9. Root perennial, ſtrong, fleſhy, ſtriking deep into the ground, ſending up ſtalks two and three feet in height, as thick as the little finger at bottom, ſwelling at the joints, branching at ſhort intervals from top to bottom; branches ſingle, alternate, divided and ſubdivided; the firſt diviſions of the flowering panicle dichotomous, the laſt trichotomous: pedicels ſlender and ſcattered on every ſide: flowers numerous, before they expand purple, but becoming paler, and at length white. Lower leaves ſubhirſute, glaucous, reſembling thoſe of Sopewort, but thicker; upper ones narrower and ſmooth, like thoſe of Cucubalus Behen. Thoſe at the baſe of the peduncles and pedicels very narrow, and the uppermoſt capillaceous. Capſule obtuſely four-cornered, four-valved[t].

Native of Spain and the Levant. Flowering in july and auguſt.—Cultivated in the Eltham garden in 1732.

β. Native of Spain.

10. Root annual, ſlender, ſmall. Stalk diffuſed, a ſpan in length, weak, and therefore ſeldom upright. Leaves very narrow, connate, often turned to one ſide, an inch and half long, from half a line to a line in breadth, bright green. The flowers come out at the diviſions of the ſtalk ſingly, on ſetaceous peduncles, one at the end. Petals ſerrate or emarginate, pale roſe-colour, marked with darker lines, having a long greeniſh claw. Anthers whitiſh. Stigmas whitiſh, blunt[u].—It reſembles *G. ſaxifraga,* but has not the calycine ſcales[x].

Native of Lapland, Sweden, Germany, Switzerland, France, Siberia.—It flowers with us from june to october.

In its wild ſtate it is rather an autumnal plant, common in the ſtubble of cultivated fields; alſo by road ſides, on walls, and in marſhy boggy places. I found it flowering in october 1778, in the ſtubbles about Vandouvre in the territory of Geneva.

It was introduced in 1773, by the Rev. John Lightfoot, M.A. and is biennial[y].

11. From a very fibrous root ſpring numerous little ſtems, not more than a ſpan high, jointed, branched. Flowers pale red[z]. Native of the South of France and Siberia.

12. Root perennial, woody, branched. Stalks in tufts, procumbent, a long ſpan, or about nine inches in length, very much branched, bent, and changing their direction at each joint. Leaves on the younger ſtems crowded, very narrow. Flowers on long peduncles, on the extreme ſubdiviſions, which are almoſt naked. At the baſe of the calyx are two pairs of broad ſcales, ending in long awns. Calyx itſelf ſhort, five-cornered, with white wings. Petals emarginate, white, with roſe-coloured lines[a]. According to Linneus, the ſtalk is only three or four inches high, upright, filiform, dichotomous; leaves ſharp; petals pale fleſh-colour, with three obſcure, purple ſtreaks at the baſe. Scopoli obſerves, that the flowers have only eight ſtamens, or even fewer; that the capſule is four-valved, and the ſeeds compreſſed and black.—Native of France, Switzerland, Auſtria, Carniola. It flowers in july and auguſt.—Introduced in 1774, by Monſ. Richard[b].]

PROPAGATION AND CULTURE.

Theſe plants having no great beauty, are rarely cultivated but in botanic gardens. They are propagated by ſeeds, ſown in a bed of light earth, and when the plants are fit to remove, they may be tranſplanted into the places where they are deſigned to remain, and will require no other culture but to keep them clean from weeds; for the roots of moſt ſorts will continue ſeveral years, and annually produce flowers and ſeeds.

[Gypſophila aggregata. See Arenaria tetraquetra β.

H.

HACUB. See *Gundelia.*]

HÆMANTHUS. (*From* Αιμα, *blood, and* Ανθος, *a flower.*)

Lin. gen. n. 400. *Reich.* 432. *Schreb.* 546. *Tournef. t.* 433. *Gærtn. t.* 11. *Juſſ.* 55. Dracunculoides. *Boerh.* 2. 266.

Claſſ. 6. 1. Hexandria Monogynia.

Nat. order of *Spathaceæ. Narciſſi,* Juſſ.

GENERIC CHARACTER.

Cal. *Involucre* ſix-leaved, very large, bearing an umbellule: *leaflets* erect, oblong, permanent.

Cor. monopetalous, erect, ſix-parted: *parts* erect, linear: *tube* very ſhort, angular.

Stam. *Filaments* ſix, ſubulate, inſerted into the tube, and longer than the corolla. *Anthers* incumbent, oblong.

Pist. *Germ* inferior. *Style* ſimple, length of the ſtamens. *Stigma* ſimple.

Per. *Berry* roundiſh, three-celled.

Seeds ſolitary, three-cornered.

ESSENTIAL CHARACTER.

Invol. ſix-leaved, many-flowered. *Cor.* ſix-parted ſuperior. *Berry* three-celled.

SPECIES.

1. Hæmanthus coccineus. *Scarlet Hæmanthus* or *Blood-flower.*

Lin. ſpec. 412. *Reich.* 2. 14. *Comm. hort.* 2. 127. *t.* 64. *Ferr. cult.* 137. *Hern. mex.* 885. *t.* 899.

Leaves tongue-ſhaped flat ſmooth and even, preſſed cloſe to the ground, in two rows, umbel contracted faſtigiate ſhorter than the involucre, border patulous.

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[k] Jacquin.

[l] Linn. ſpec.

[m] Hort. kew.

[n] Linn. ſyſt. & D'Aſſo.

[o] Hort. kew.

[p] Krocker.

[q] Linn. ſpec. & ſuec.

[r] Krocker.

[s] Hort. kew.

[t] Dillenius.

[u] Krocker.

[x] Linn. ſpec.

[y] Hort. kew.

[z] Dalechamp.

[a] Haller.

[b] Hort. kew.

2. Hæmanthus puniceus. *Waved-leaved Hæmanthus* or *Blood-flower.*
Lin. ſpec. 413. *Reich.* 2. 14. *hort. cliff.* 127. *upſ.* 88. *Ait. hort. kew.* 1. 404. *Dill. elth..* 167. *t.* 140. *f.* 167. *Trew. Ehret.* 44. *Gærtn. fruct.* 31.
Leaves oblong elliptic acute retuſe waved, umbel contracted faſtigiate, border and ſtamens erect.

[3. Hæmanthus pubeſcens. *Downy-leaved Hæmanthus.*
Lin. ſyſt. 316. *ſuppl.* 193. *Ait. hort. kew.* 404.
Leaves oblong-lanceolate hirſute on every ſide, umbel faſtigiate-rounded, border and ſtamens erect.

4. Hæmanthus ciliaris. *Fringed Hæmanthus.*
Lin. ſpec. 413. *Reich.* 2. 14. *Ait. hort. kew.* 404.
Amaryllis ciliaris. *Lin. ſyſt.* 320. *ſuppl.* 195.
Lilium afric. ſphæricum, &c. *Herm. lugdb.* 375.
Bulbus oblongus, &c. *Breyn. cent. t.* 39.
Leaves lanceolate ſmooth ciliate, involucre broad ſhorter than the rounded umbel, border reflex.

5. Hæmanthus toxicarius. *Fan-leaved Hæmanthus.*
Ait. hort. kew. 405.
Amaryllis diſticha. *Lin. ſyſt.* 320. *ſuppl.* 195.
Leaves in two rows oblong flattiſh ſmooth, peduncles longer than the ſpathe and flower.

6. Hæmanthus ſpiralis. *Spiral-ſtalked Hæmanthus.*
Ait. hort. kew. 405.
Amaryllis ſpiralis. *L'Herit. ſert. angl.* 10. *t.* 13.
Leaves briſtle-ſhaped, ſcape filiform, at the baſe ſpiral and flexuoſe, involucres ſubulate ſhorter than the umbel, which bears from one to four flowers.]

7. Hæmanthus carinatus.
Lin. ſpec. 413. *Reich.* 2. 15.
Leaves linear keeled.

8. Hæmanthus multiflorus. *Many-flowered Hæmanthus* or *Bloodflower.*
Nodder monogr. Vallet. hort. t. 33. *De Bry floril. t.* 44. *Swert. floril. t.* 62. *f.* 3. *Moriſ. hiſt. ſ.* 12. *t.* 12. *f.* 11. *Rudb. elyſ.* 2. *t.* 210. *f.* 3. *Seba theſ.* 1. *t.* 12. *f.* 1, 2, 3.
Leaves three together, ovate-lanceolate, acuminate, keeled, waved, upright; umbel cloſe, globular; petals ſpreading.

DESCRIPTIONS, *&c.*

1. Root large, bulbous, from which in autumn come out two broad flat leaves, of a fleſhy conſiſtence, ſhaped like a tongue, which turn backward on each ſide, and ſpreading flat on the ground, have a ſingular appearance all the winter; but in the ſpring they decay. The flowers are produced in autumn, juſt before the new leaves come out; they are of a bright red, in a large cluſter, two or three inches from the bulb.

[It is a native of the Cape of Good Hope; and was cultivated by Mr. Miller in 1731 [a].]

2. Roots compoſed of many thick fleſhy tubers, forming a head, out of which ariſes a fleſhy ſpotted ſtalk, ſpreading at top into ſeveral ſpear-ſhaped leaves, which are waved on their edges. Stalks a foot high; leaves ſix or eight inches long, and two broad in the middle. From the ſide of the ſtalk near the ground breaks out a ſtrong fleſhy ſcape, ſix or eight inches long with a large cluſter of yellowiſh red flowers at top. [Berry obovate, fleſhy, ſcarlet: fleſh ſoft, thin: partitions membranaceous: cells generally unequal, one larger and fertile, the others ſmaller and barren, or even quite obliterated. Seed ovate, narrowing downwards, obſcurely three-cornered, pale, upright when ripe, but before that time horizontal [b].

This is a native of Africa; it was received from Holland, and cultivated in 1722 at Eltham, by James Sherard, M. D.[c]

3. Found at the Cape of Good Hope by Thunberg and Maſſon.—It flowers in auguſt; and was introduced in 1774 [d].

4. Bulb large. Leaves like thoſe of the firſt ſpecies, but ciliate, as in *Amaryllis guttata*, which however has much narrower leaves, more like thoſe of Narciſſus. The cilias in this are brown, whereas in the Amaryllis they are pale [e].—It is a native of the Cape of Good Hope; and was introduced in 1774, by Mr. Francis Maſſon [f].

5. This alſo is a native of the Cape, where it was found both by Thunberg and Maſſon. The flowers are fleſh-coloured. It was introduced in 1774 [g].

6. A native of the Cape, and flowers with us in ſeptember. It was introduced in 1774, by Maſſon [h].

See Amaryllis ſpiralis, which is the ſame plant.]

7. This has a large bulbous root ſending out three or four leaves, a foot long or more, not flat but hollowed like the keel of a boat, and more erect than thoſe of the firſt ſort, but not quite ſo broad: the flowers are of a paler red.

Native of the Cape. Mr. Miller received the roots from Dr. Adrian van Royen, profeſſor of botany at Leyden.

[8. Bulb from one to three inches in diameter, the upper part tinged of a red colour, and ſpeckled like the ſtalk. Scape from eight to eighteen inches in height, ſpeckled with dark red almoſt to the top, round or flatted, ſometimes fluted on one ſide. Umbel of flowers from three to nine inches in diameter, containing from twelve to forty, fifty or ſixty flowers. Involucre or ſpathe not always of ſix leaves, but varying from three to ſeven; the leaves are oblong, bent back to the ſtalk, and permanent. Peduncles one inch long, with a white bracte like a thread at the baſe of each. Corolla of a clear ſhining blood-red colour, divided to the bottom into ſix narrow parts, which are pointed and ſpread out wide. Filaments upright, curved a little upwards, divaricating. Anthers of a fine bright gold colour, with a ſmall black ſpeck. Style the length of the ſtamens; both longer than the corolla. Seed-veſſel a roundiſh berry. The leaves are on a ſeparate ſtalk by the ſide of the ſcape, of a fine light-green colour, from ſix to twelve inches in length or more, in breadth from two to four inches. The regular number ſeems to be three, but ſome plants have only two, and others four, five or ſix. The leaf-ſtalk is ſpeckled like the ſcape, and emerges from a cup or large ſcale of a duſky red colour on the outſide, about the time when the ſpathes or involucres open to ſhow the flower. The leaves ſtand in ſome plants nearly as high as the bottom of the flowers; in others, as high as the top or even higher; and do not diſplay themſelves entirely till after the flowers are paſſed.

Native of Sierra Leone in Africa. It was ſent to the Paris garden by the younger Robin from Guinea in 1603. He found it abundantly in the iſlands on the coaſt, called Bugigos, in woods near the ſhore; ſince that it has been loſt in Europe till about the year 1794. Vallet's figure is erroneous, yet it is implicitly copied by De Bry, Swertius, Moriſon and Rudbeck. Seba's is different, and much better.]

PROPAGATION AND CULTURE.

The firſt and ſeventh ſorts are with difficulty propagated in Europe, for their roots put out offsets but ſparingly, the gardens in Holland therefore are ſupplied with them from the Cape of Good Hope, where they naturally grow, and produce ſeeds; the plants are too tender to thrive in this country in winter in the open air, therefore the roots muſt be planted in pots filled with light loamy earth, and, in the winter, placed in a dry glaſs-caſe, where, during that ſeaſon, the leaves will be in full vigour, and make a pretty appearance, when intermixed with other plants in the ſtove; though they ſeldom flower here, yet are they worthy of a place in every garden where there is conveniency of keeping them. The roots may be taken up when their leaves are decayed, and kept out of the ground till auguſt, when they ſhould be new potted, and may remain abroad till the end of ſeptember, at which time they may be removed into the glaſs-caſe; and during the time they are growing, will require to have frequent waterings, but it muſt not be given to them in large quantities.

If a border is made either againſt the front of the green-houſe or ſtoves, which may be contrived ſo as to be covered with glaſſes in winter, in which theſe roots, with the African Gladiolus's, Ixia's, Perſian Cyclamens, &c. are planted in the full ground, they will flower more conſtantly, and the foot-ſtalks will riſe much higher than thoſe kept in pots.

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[a] Hort. kew.
[b] Gærtner.
[c] Dillenius.
[d] Hort. kew.
[e] Linn. ſpec.
[f] Hort. kew.
[g] Linn. ſuppl. and Hort. kew.
[h] Hort. kew.

The ſecond ſort is alſo a native of the Cape of Good Hope, from whence it was firſt brought to Holland, where it has been propagated and diſperſed over Europe; this may be propagated by parting the roots; the beſt time for this is in the ſpring, before the plants put out new ſtalks, which is alſo a right time to ſhift and new-pot them; but as the roots do not multiply very faſt in offsets, the beſt way is to propagate them from ſeeds, which they ripen plentifully in England; theſe ſhould be ſown ſoon after they are ripe, in pots filled with light earth, and kept in the ſtove all the winter; if theſe pots are plunged into the tan-bed in the bark-ſtove, in the vacancies between the plants, the earth will be kept warm, and will not dry ſo faſt, as when they are placed in a dry ſtove, ſo the ſeeds will be ſooner prepared to vegetate; in the ſpring the pots may be taken out of the ſtove, and plunged into a hot-bed, which will bring up the plants; theſe muſt have air admitted to them every day in mild weather, to prevent their drawing up weak; and when they are fit to remove, they may be each planted in a ſeparate ſmall pot filled with light earth, and plunged into the hot-bed again, to promote their taking new root; then they muſt be gradually hardened, and afterwards may be removed into the dry ſtove, where they ſhould conſtantly remain, otherwiſe the plants will not thrive and flower in this country. In the winter ſeaſon they muſt not have too much wet, for as their roots are fleſhy and ſucculent, they are apt to rot with moiſture. In the ſummer they muſt have a large ſhare of air in warm weather, and require to be frequently watered, eſpecially during the time of their flowering.

HÆMATOXYLUM. (*From* Αιμα, *blood, and* ξυλον, *wood.*)

Lin. gen. n. 525. *Reich.* 567. *Schreb.* 708. *Rottboell coll. hafn.* 2. 254. *Juſſ.* 348.

Claſſ. 10. 1. Decandria Monogynia.

Nat. order of *Lomentaceæ.—Leguminoſæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, coloured: *tube* very ſhort, pitcher-ſhaped, fleſhy, permanent: *border* five-parted, ſpreading, deciduous: *parts* oblong, blunt; the four upper ones equal, the loweſt a little longer than the reſt.

COR. *Petals* five, lanceolate, broadeſt at top, blunt, veined, ſpreading, nearly equal, inſerted into the calyx, and larger than its diviſions.

STAM. *Filaments* ten, ſubulate, hairy at bottom on the inſide, upright, unequal, ſcarcely longer than the corolla, inſerted into the calyx. *Anthers* oval, ſmall.

PIST. *Germ* oblong-ſabre-ſhaped, compreſſed. *Style* capillary, bent at the tip, longer than the ſtamens. *Stigma* funnel-ſhaped.

PER. *Legume* lanceolate, flat, blunt, one-celled, edged on each ſide with a thickiſh ſuture that does not open, opening by the burſting of the valves in the middle longitudinally, and dividing into two unequal boat-ſhaped parts.

SEEDS few, oblong, compreſſed, furrowed, fixed to one of the ſutures.

ESSENTIAL CHARACTER.

Cal. five-parted. *Pet.* five. *Legume* lanceolate, valves boat-ſhaped.

SPECIES.

1. Hæmatoxylum campechianum. *Logwood. Bloodwood. Campeche-wood.*

Lin. ſpec. 549. *Reich.* 2. 267. *hort. cliff.* 160. *mat. med.* 114. *Plenck, ic. t.* 329. *Woodv. med. bot.* 48. *t.* 17. *Jacqu. obſ.* 1. 20. *Swartz obſ.* 170. *Brown. jam.* 221. *Sloan. jam.* 2. 183. *Cateſby car.* 3. *t.* 66. *Raii hiſt.* 3. *dendr.* 132. (Lignum campechianum).

DESCRIPTION, *&c.*

This tree grows naturally in the bay of Campeche, at Honduras, and other parts of the Spaniſh Weſt Indies, where it riſes from ſixteen to twenty-four feet high. The ſtem is generally crooked, and ſeldom thicker than a man's thigh. [The inner bark is red, and the wood is hard. Branches ſubdivided, flexuoſe, prickly, round, aſh-coloured. Leaves pinnate: petioles alternate, patulous, round, ſmooth; leaflets four pairs, on very ſhort petiolules, generally obcordate, entire, ſmall, veined, very ſmooth and ſhining, ſpreading in the day time, but at night upright, converging. Prickles ſtrong, middling in ſize, above the petioles. Racemes axillary, ſimple, upright, the length of the leaves, ſolitary, many-flowered. Flowers peduncled, numerous, ſmall, pale yellow; on ſhort, ſcattered, ſimple, coloured peduncles. Calyx bell-ſhaped at the baſe and very ſmall, the parts lanceolate, convex, reflex, purple; the bottom nectareous. Petals ovate, blunt, equal, with ſhort claws. Anthers incumbent, revolute. Germ lanceolate, on a ſhort pedicel. Stigma dilated, perforated.—It flowers in march and april, and ripens its ſeeds in july [a].

It was cultivated here by Mr. Miller in 1739 [b].

Logwood was firſt propagated in Jamaica in 1715, from ſeeds brought from the bay of Campeche. In the neighbourhood of Savannah la Mar ſuch quantities of it now grow wild as to incommode the landholders extremely; occupying that diſtrict, as the Opoponax and Caſhew have the ſouthern parts of Middleſex county. It was firſt introduced to prevent the neceſſity of forming ſettlements upon the Spaniſh Main, but the event did not fully anſwer the benevolent intentions of thoſe who firſt cultivated it. It makes an impenetrable and beautiful fence. The ſmaller ſtems are made into hoops [c].

Both the bark and gum are gentle ſubaſtringents; but the laſt excels, and adds a ſweetneſs to its virtue, which makes it more agreeable to the palate [d].]

PROPAGATION AND CULTURE.

The ſeeds are frequently brought from America, which, if freſh, readily grow when ſown upon a good hot-bed; and if the plants are kept in a moderate hot-bed, they will grow to be upwards of a foot high the ſame year, and, while the plants are young, they are generally well furniſhed with leaves; but afterwards they make but little progreſs, and are frequently but thinly clothed with leaves. Theſe plants are very tender, ſo ſhould be conſtantly kept in the bark-ſtove, where, if they are duly watered, and the ſtove kept in a good degree of heat, the plants may be preſerved very well.

[In the Weſt Indies it thrives beſt in low ſwampy lands, or ſhallow waters, where the bottom is rich and moderately firm [e].

HAIR-GRASS. See *Aira.*

HALBERT-WEED. See *Calea.*

HALECUS. See *Croton.*]

HALESIA. (*So named by Ellis, in honour of the learned and venerable Stephen Hales, D.D. F.R.S. author of Vegetable Staticks*, 1727.)

Lin. gen. n. 596. *Reich.* 651. *Schreb.* 814. *Gærtn. t.* 32. *Juſſ.* 156.

Claſſ. 11. 1. Dodecandria Monogynia.

Nat. order of *Bicornes.—Guajacanæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, very ſmall, ſuperior, four-toothed, permanent.

COR. monopetalous, bell-ſhaped, ventricoſe; *mouth* four-lobed, blunt, patulous.

STAM. *Filaments* twelve (ſeldom ſixteen), ſubulate, upright, a little ſhorter than the corolla. *Anthers* oblong, blunt, upright.

PIST. *Germ* oblong, inferior. *Style* filiform, longer than the corolla. *Stigma* ſimple.

PER. *Nut* corticate, oblong, narrowing to both ends, four-cornered, the corners membranaceous, two-celled. (Drupe four-celled, *G.*)

SEEDS ſolitary.

ESSENTIAL CHARACTER.

Cal. four-toothed, ſuperior. *Cor.* four-cleft. *Nut* quadrangular, with two ſeeds.

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[a] Swartz obſ.

[b] Hort. kew.

[c] Long's Jamaica, 754.

[d] Browne.

[e] Ibid.

SPECIES.

1. Haleſia tetraptera. *Four-winged Haleſia*, or *Snow-drop Tree.*
   Lin. ſpec. 636. *Reich.* 2. 417. *Ellis in philoſ. tranſ. vol.* 51. *p.* 931. *t.* 22. *f.* A. *Gærtn. fruct.* 160. *Cateſb. car.* 1. *t.* 64.
   Leaves lanceolate-ovate, petioles glandular.
2. Haleſia diptera. *Two-winged Haleſia.*
   Lin. ſpec. 636. *Reich.* 2. 417. *Ellis in philoſ. tranſ. t.* 22. *f.* B.
   Leaves ovate, petioles ſmooth and even.

DESCRIPTIONS, *&c.*

1. This frequently comes up with two or three ſtems, from fifteen to twenty feet high, ſending out branches towards their tops. Leaves ſerrate, [ſharp-pointed, with the middle depreſſed, growing alternately on ſhort foot-ſtalks. The flowers hang in ſmall bunches all along the branches, each gem producing from four to eight or nine; they are of a pure ſnowy whitenеſs; and as they blow early in the ſpring, before the leaves appear, and continue for two or three weeks, they make a moſt elegant appearance. They are followed by pretty large four-winged fruit, hanging likewiſe in bunches, and very agreeable to the taſte [f].

The fruit is a juiceleſs drupe, of an oblong obovate ſhape, four-ſided, finiſhing at top in the ſtyle, at bottom in a very long peduncle: bark thin, fungous and membranaceous, drawn out into four ſtiff lateral wings: ſhell bony, obovate, ſharp-pointed at each end, within empty or having a ſcurfy fungous ſubſtance in the middle, and four cells with a ſeed in each, incloſed all round in the periphery. The ſeeds are fixed to the bottom of the cells, and are oblong, a little bent, and of a pale colour [g].

Native of South Carolina, growing commonly along the banks of Santee river, and ſometimes more ſoutherly. The wood is hard and veined; and the bark of a darkiſh colour, with many irregular ſhallow fiſſures [h].

It flowers in april and may. Introduced in 1756, by John Ellis, Eſq.[i] from ſeeds ſent over by Dr. Alexander Garden, phyſician at Charleſtown [k].

2. The leaves of this are ſix times the ſize of the foregoing, nor are they at all tomentoſe underneath. Fruit mucronate, with two large wings oppoſite to each other, and two minute ones [l].

Received by John Ellis, Eſq. from Governor Ellis of Georgia, and ſent to him by Mr. De Brahme, from Auguſta in Georgia, three hundred miles up the river Savannah [m].]

PROPAGATION AND CULTURE.

Theſe plants are propagated by ſeeds, when they can be procured freſh from the places of their natural growth. Theſe ſhould be ſown in pots as ſoon as the ſeeds arrive, plunging the pots into the ground, in a ſituation where they may have only the morning ſun. The ſeeds often remain a year in the ground, therefore the earth in the pots ſhould not be diſturbed, until there is no probability of the ſeed growing. When the plants appear they ſhould be ſcreened from the ſun, and frequently, but not too plentifully watered; for while the plants are young, much moiſture will rot their ſhanks. The following autumn, the pots ſhould be placed in a common frame, where the plants may enjoy the free air in mild weather, and be ſcreened from froſt. The ſpring following, before the plants begin to ſhoot, they ſhould be each put into a ſeparate ſmall pot, plunging them in a frame, where they ſhould be ſhaded from ſun; and in the ſummer placed in a ſhady ſituation, ſcreening them in winter; and the ſpring following they may be turned out of the pots, and planted in the full ground where they are deſigned to remain.

HALESIA. See *Guettarda* and *Trichilia.*

HALICACABUM. See *Cardioſpermum* and *Phyſalis.*

HALIMUM. See *Seſuvium.*

HALIMUS. See *Atriplex* and *Portulaca halimoides.*

HALLERIA. (*So named by Linneus, from the famous Albert Haller, author of* Stirpes Helveticæ, *and other conſiderable works in botany, &c.*)

Lin. gen. n. 761. *Reich.* 819. *Schreb.* 1020. *Juſſ.* 118.

Claſſ. 14. 2. Didynamia Angioſpermia.

Nat. order of *Perſonatæ.—Scrophulariæ,* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, trifid, flat, ſpreading, very obtuſe, permanent: the upper cleft twice as broad as the reſt.

COR. monopetalous, ringent: *tube* roundiſh at the baſe, bent in with a ſwelling throat: *border* oblique, upright, four-cleft; the upper cleft a little longer than the others, blunt, emarginate; the ſide ones ſhorter, broader, ſharper; the loweſt very ſhort, very ſlender, and very ſharp.

STAM. *Filaments* four, briſtle-ſhaped, ſtraight, inſerted into the tube, longer than the corolla. *Anthers* roundiſh, twin.

PIST. *Germ* inferior, ovate, ending in a ſtyle longer than the ſtamens. *Stigma* ſimple.

PER. *Berry* roundiſh, two-celled.

SEEDS ſmall, flat, roundiſh, winged.

ESSENTIAL CHARACTER.

Cal. trifid. *Cor.* quadrifid. *Filam.* longer than the corolla. *Berry* inferior, two-celled.

SPECIES.

1. Halleria lucida. *African Fly-Honeyſuckle.*
   Lin. ſpec. 872. *Reich.* 3. 161. *hort. cliff.* 323. *Burm. afr.* 244. *t.* 89. *f.* 3. (Lonicera). *Amm. herb.* 591. (Solanum).
   [β. H. fol. lanceolatis ovatis ſuperne ſerratis. *Roy. lugdb.* 289. *Burm. afr.* 243. *t.* 89. *f.* 1.]

DESCRIPTION, *&c.*

This plant grows to the height of ſix or eight feet, with a woody ſtem well furniſhed with branches. Leaves ovate, ſerrate, oppoſite, and continuing green through the year; the flowers come out ſingly, and are of a red colour, but being intermixed with the leaves, and growing ſcatteringly on the branches, are not eaſily diſcerned. They come out in june, and the ſeeds ripen in ſeptember. The leaves continuing green all the winter, this plant makes a good variety in the greenhouſe during that ſeaſon.

[It is a native of the Cape of Good Hope; flowers from june to auguſt, and was cultivated by Mr. Miller in 1752 [a].]

PROPAGATION AND CULTURE.

It may be propagated by cuttings, which if planted in pots filled with light earth in june, will ſoon take root. The plants may be expoſed in ſummer, and will require plenty of water at that ſeaſon: in winter they muſt be houſed with Myrtles, and other hardy exotic plants, which require much air in mild weather.

[HALM. See *Arundo.*

HALORAGIS. (*From* αλς, αλος, *the ſea, and* ϱαγις *acinus or grape-ſtone; becauſe it grows on the ſea coaſt, and the ſeeds reſemble grape-ſtones.*)

Lin. gen. Schreb. n. 686. *Forſt. gen.* 31. *Jacqu. miſc.* 2. 333. Cercodia. *Murr. comm. gott.* 1780. *p.* 3. *Gærtn. t.* 32. *f.* 6. *Juſſ.* 318, 451.

Claſſ. 8. 4. Octandria Tetragynia.

Nat. order of *Calycanthemæ.—Onagræ,* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* quadrifid, ſuperior, faſtened about the germ, permanent.

COR. *Petals* four, oblong, blunt, concave, ſpreading, with narrow claws, inſerted into the calyx.

STAM. *Filaments* eight, filiform, upright, ſhorter than the corolla, inſerted into the calyx. *Anthers* oblong, four-furrowed, upright.

PIST. *Germ* inferior. *Styles* four, upright. *Stigmas* ſimple, blunt.

PER. *Drupe* dry, roundiſh, crowned with the permanent calyx.

SEED. *Nut* bony, four-celled, with one kernel in each cell.

ESSENTIAL CHARACTER.

Cal. four-cleft, ſuperior. *Petals* four. *Drupe* dry, incloſing a four-celled nut.

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[f] Garden in philoſ. tranſ. p. 930.
[g] Gærtner.
[h] Philoſ. tranſ.
[i] Hort. kew.
[k] Philoſ. tranſ.
[l] Linn. ſpec.
[m] Philoſ. tranſ. 51. 931.

[a] Hort. kew.

SPECIES.

1. Haloragis proſtrata.
Lin. ſyſt. 381. *ſuppl.* 229. *Forſt. gen.* 62. *t.* 31. *fl. auſt. n.* 179. *L'Herit. ſtirp. nov.* IV. 82.
Leaves oblong quite entire mucronate, fruits globular.

2. Haloragis Cercodia.
Medic. bot. beobacht. 1783. *p.* 73. *Ait. hort. kew.* 2. 37.
H. Tetragonia. *L'Herit. ſtirp. nov.* 82.
H. alata. *Jacqu. ic.* 1. *t.* 69. *miſc.* 2. 332. *icon. rar. t.* 26. *Forſt. fl. auſtr. n.* 180.
Cercodia erecta. *Murr. comm. gott.* 1780. *p.* 3. *t.* 1.
Tetragonia ivæfolia. *Lin. ſyſt.* 467. *ſuppl.* 257.
Leaves ſerrate, flowers in whorls.

DESCRIPTIONS, *&c.*

1. Branches four-cornered, ſmooth. Leaves oppoſite, ſeſſile, tapering at the baſe into the inſertion, waved, ſmooth. Fruits axillary, ſolitary, pedicelled. When the fruit is in a ſtate of maturity, this plant bears a great reſemblance to Ammannia latifolia[a].

Native of Botany iſland, near New Caledonia, ſeptember 30, 1774: in the iſle of Pines, &c. in the South ſeas.

2. This is an underſhrub, with much of the appearance of *Praſium majus.* It is about two feet high, branched, panicled, upright. Stalk quadrangular and red; the angles elevated, rounded, ſcabrous. Leaves oppoſite, petioled, horizontal, ovate-lanceolate, unequally ſerrate; with the ſerratures prickly; ſcabrous, flat, veined, an inch in length: petioles one-third of the length of the leaves, ſemicylindric, channelled. Flowers at the ends of the branches, axillary, in threes, peduncled, ſmall, reddiſh green. Peduncles ſhort, round, ſcabrous, reflected below the leaves after flowering-time. Petals lanceolate, wider in the middle, ſtanding out between the leaflets of the calyx, ſpreading very much, longer than the calyx, caducous[b]; pale purple. Pericarp white; nut black. When other circumſtances agree, the fruit being quadrangular-winged or without angles, is not ſufficient to conſtitute a generic difference[c].

Found abundantly in New Zealand by Sir Joſeph Banks, Bart. and others. The younger Linneus informs us that it flowered with him in november 1779; and that ſome of the flowers had petals, others none.—With us it flowers moſt part of the ſummer, and was introduced in 1772[d].]

HAMAMELIS. (*A name in Euſtathius from Pauſanias and Hippocrates,* Αμαμηλις: *ſo called becauſe it flowers with the apple.*)
Lin. gen. n. 169. *Reich.* 181. *Schreb.* 226. *Juſſ.* 288. Trilopus. *Mitch.* 22.
Claſſ. 4. 2. Tetrandria Digynia.
Nat. order of *Berberides,* Juſſ.

GENERIC CHARACTER.

CAL. *Involucre* three-leaved, three-flowered: the two inner leaflets roundiſh, ſmaller, blunt; the outmoſt larger, lanceolate.—*Perianth* double: the outer two-leaved, ſmaller, roundiſh; the inner four-leaved, upright, the leaflets oblong, blunt, equal.

COR. *Petals* four, linear, equal, very long, blunt, reflex. *Nectary* of four truncate leaflets, growing to the corolla.

STAM. *Filaments* four, linear, ſhorter than the calyx. *Anthers* two-horned, bent in.

PIST. *Germ* ovate, villoſe, ending in two *ſtyles,* which are of the ſame length with the ſtamens. *Stigmas* capitate.

PER. none.

SEED. *Nut* ovate, half covered with the calyx, blunt, furrowed on both ſides at the tip, having two little horns ſpreading horizontally, two-celled, two-valved.

ESSENTIAL CHARACTER.

Invol. three-leaved. *Perianth* four-leaved. *Pet.* four. *Nut* two-horned, two-celled.

SPECIES.

1. Hamamelis virginica. *Witch-Hazel.*
Lin. ſpec. 180. *ſyſt.* 167. *Reich.* 1. 351. *Gron. virg.* 139. *Cold. noveb.* 18. *Cateſb. car.* 3. *t.* 2. *Duham. arb.* 1. 287. *t.* 114. *Mill. illuſtr. ic.*

DESCRIPTIONS, *&c.*

This has a woody ſtem, from two to three feet high, ſending out many ſlender branches. Leaves oval, indented on their edges, having great reſemblance to thoſe of the Hazel, and placed alternately on the branches: theſe fall away in autumn, and then the flowers come out in cluſters from the joints: they are not followed by ſeeds in this country.

[It ſeems to be polygamous, for in Virginia it is dioecous, with axillary, peduncled, crowded, petaloid flowers: in Carolina it is monoecous, with terminating, many-ſtamened, apetalous flowers, in ſpikes. Whether theſe are diſtinct ſpecies or not, may be doubted; ſince they are ſo very much alike in the herb[e].

In New England, the germ endures the ſeverity of their winters, and the fruit does not ripen till the ſeptember ſucceeding, when ripe fruit and freſh bloſſoms will be found on the ſame tree.

The Indians conſider this tree as a valuable article in their materia medica. They apply the bark, which is ſedative and diſcutient, to painful tumours and external inflammations. A cataplaſm of the inner rind is found to be very efficacious in removing painful inflammations of the eyes[f].

It was introduced in 1736, by Peter Collinſon, Eſq.[g]]

PROPAGATION AND CULTURE.

This is propagated by laying down the young branches in autumn, which will take root in one year, provided they are duly watered in dry weather; but many of the plants which are in the gardens, have been produced from ſeeds which came from America; theſe ſeeds always remain a whole year in the ground, ſo they ſhould be ſown in pots, which may be plunged into the ground in a ſhady part of the garden, where they may remain all the ſummer, and require no other care but to keep the pots clean from weeds, and in very dry weather to water them now and then; in autumn the pots may be removed to a warmer ſituation, and plunged into the ground under a warm hedge; and if the winter ſhould prove very ſevere, they ſhould have ſome light covering thrown over the pots, which will ſecure the ſeeds from being deſtroyed. In the ſpring the plants will come up, therefore as the ſeaſon grows warm, the pots may be removed where they may have the morning ſun till eleven o'clock; and if they are duly watered in dry weather, the plants will have made good progreſs by autumn, when they ſhould be tranſplanted, either into ſmall pots, or in a nurſery-bed, where in one, or at moſt two years time, they will be ſtrong enough to plant where they are deſigned to remain; they love a moiſt ſoil, and a ſhady ſituation.

[HAMDAMANIAS. See *Grewia.*]

HAMELIA. (*So named from Jean Baptiſte du Hamel du Monceau, the celebrated author of ſeveral valuable books on Trees.*)
Lin. gen. n. 232. *Reich.* 249. *Schreb.* 205. *Jacqu. amer.* 71. *Juſſ.* 207.
Claſſ. 5. 1. Pentandria Monogynia.
Nat. order of *Rubiaceæ;* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-parted, acute, very ſmall, ſuperior, upright, permanent.

COR. monopetalous: *tube* five-cornered, very long: *border* five-parted, equal, ſmall, acute.

STAM. *Filaments* ſubulate, inſerted at the middle of the corolla. *Anthers* oblong, linear, the ſame length with the corolla.

PIST. *Germ* ovate, with a conical tip, inferior. *Style* filiform, the ſame length with the corolla. *Stigma* linear, blunt.

PER. *Berry* oval, furrowed, five-celled, crowned.

SEEDS very many, roundiſh, compreſſed, very ſmall.

ESSENTIAL CHARACTER.

Cor. five-cleft. *Berry* five-celled, inferior, many-ſeeded.

SPECIES.

1. Hamelia patens.
Lin. ſpec. 246. *ſyſt.* 215. *Reich.* 1. 480. *Swartz*

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[a] Linn. ſuppl.
[b] Ibid.
[c] Jacqu. miſc.
[d] Hort. kew.
[e] Linn. mant.
[f] Cutler amer. acad. mem. 1.
[g] Hort. kew.

obſ. 77. *Jacqu. amer.* 72. *t.* 50. *pict.* 39. *t.* 72. *Plum. ic.* 218. *f.* 2. (Periclymenum).

H. coccinea. *Swartz prodr.* 46.

Racemes terminating, coloured, leaves ternate, villoſe, pubeſcent.

[2. Hamelia grandiflora. *Great-flowered Hamelia.*

L'Herit. ſert. angl. 4. *t.* 7. *Ait. hort. kew.* 1. 229. *Brown. jam.* 166. 1. (Campanula). *Sloan. jam.* 2. 63. *t.* 183. *f.* 2. *Raii hiſt.* 3. 115. (Nerio affinis).

H. ventricoſa. *Swartz prodr.* 46.

Racemes terminating and axillary, leaves ternate, levigated, tube of the corolla bellying.

3. Hamelia axillaris.

Swartz prodr. 46.

Subherbaceous, racemes axillary; flowers moſtly directed one way, ſeſſile; leaves ovate-lanceolate.

4. Hamelia Chryſantha.

Swartz prodr. 46. *Brown. jam.* 166. 2. *t.* 14. *f.* 1. (Campanula). *Plum. ic.* 218. *f.* 1. (Periclymenum).

Racemes terminating, leaves oblong, wedge-ſhaped, acuminate, very ſmooth, flowers pedicelled.

DESCRIPTIONS, &c.

1. This is a ſhrub or ſmall tree] growing five or ſix feet high. [Branches diverging, ſpreading, round, ſmooth. Leaves uſually ternate (but ſometimes there are four or five leaflets on a petiole,) ovate, acuminate, entire, nerved, the upper ſurface pubeſcent, hoary on the back, villoſe, ſoft, coloured about the edge. Petioles coloured, the midrib red. Stipules in pairs, within the petioles, awl-ſhaped. Racemes ſpreading, red; the ſubdiviſions trichotomous: flowers directed one way, ſubſeſſile, diſtant, bright red or ſcarlet; there is one ſolitary flower ſeſſile at the ſubdiviſions. Calyx five-toothed, coloured. Berry black [a].

Native of Hiſpaniola, where Swartz has obſerved it, in hedges on the mountains. Mr. Miller cultivated it in 1768.] He ſays that the ſeeds were brought from Senegal by Adanſon, and that Houſtoun found it in America.

2. This grows to be a large and ſtately tree, affording very broad boards for tables or cabinets, of the ſoftneſs and grain of elm, whence the name of *Spaniſh Elm*, having many undulated light brown or gray lines in it. The cabinet-makers, who uſe it very much, call it *Prince-wood*. The bark is aſh-coloured, and very ſmooth. The ends of the branches are beſet with leaves two inches long, and one broad in the middle, from whence they decreaſe in breadth to both extremes; they are ſmooth, not ſerrate, of a freſh green colour, and ſet on foot-ſtalks three quarters of an inch long. The flowers ſtand ſeveral together; they are large, from a narrow baſe opening wider, almoſt like a bell-flower, of a ſulphureous colour, or like the yellow flowers of the Marvel of Peru. It is ſent to Europe in great quantities for the uſe of cabinet-makers, &c. and when young it makes good hoops [b].

It is native of Jamaica, Hiſpaniola, and other parts of the Weſt-Indies.—It flowers here from ſeptember to november; and was introduced in 1778, by Thomas Clark, M.D. [c]

3. Native of Jamaica and Hiſpaniola [d].

4. This is a native of Jamaica. According to Browne, the ſize and the different diſpoſitions of their leaves make the whole difference between this and the ſecond ſpecies. The height ſeldom exceeds four feet. The flowers are yellow, and the leaves entire.]

PROPAGATION AND CULTURE.

1. This plant is propagated by ſeeds, when they can be procured freſh from the countries where it grows naturally: theſe ſhould be ſown in ſmall pots, and plunged into a moderate hot-bed: the plants generally appear in about five or ſix weeks after, and ſhould then be treated in the ſame way as other plants from the ſame countries; giving them proper air in warm weather, and gently refreſhing them with water; and when they are fit to tranſplant, they ſhould be each planted in a ſmall pot, plunging them into the hot-bed again, where they ſhould be ſhaded from the ſun until they have taken new root, when they ſhould have air and moiſture according to the warmth of the ſeaſon. In the autumn the plants muſt be removed into the tan-ſtove, plunging the pots into the bed, where they ſhould be always continued: this flowers in july and auguſt, when it makes a pretty appearance.

As the ſeeds of this plant are ſeldom brought to England, ſo the plant may be propagated by cuttings, which if planted in ſmall pots, plunged into a moderate hot-bed, and cloſely covered with either bell or hand-glaſſes, will put out roots in about ſix weeks, and may then be treated in the ſame way as the ſeedling plants.

[Hapalanthus. See *Calliſia.*

Hard-beam Tree. See *Carpinus.*

Hard-grass. See *Dactylis.*

Hare-bells. See *Hyacinthus.*

Hare's-ear. See *Bupleurum.*

Hare's-foot Fern. See *Trichomanes.*

Hare's-tail Rush. See *Eriophorum vaginatum.*]

Harmala. See *Peganum.*

[Harmesias. See *Brownea.*

HARTOGIA. (*In memory of Hartog, a Dutch gardener, and a celebrated traveller to the Cape of Good Hope.*)

Lin. gen. Schreb. n. 197. *ſuppl.* 16. *Thunb. nov. gen.* 86. Schrebera *Juſſ.* 379.

Claſſ. 4. 1. Tetrandria Monogynia.

Nat. order of *Dumoſæ.—Rhamni,* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* five-cleft, ſmooth, permanent: *clefts* acute, very ſhort.

Cor. *Petals* four, ovate, obtuſe, ſpreading.

Stam. *Filaments* four, very ſhort, inſerted into the baſe of the germ. *Anthers* ovate, furrowed.

Pist. *Germ* ſuperior, ovate, ſmooth. *Style* ſimple, ſubulate. *Stigma* acute.

Per. *Drupe* juiceleſs, ovate, ſmooth, or a little roughiſh, (ſcarcely as big as a haſel nut.)

Seed. *Nut* with two ſeeds, ſomewhat fleſhy.

ESSENTIAL CHARACTER.

Cal. five-cleft. *Pet.* four, ſpreading. *Drupe* ovate, incloſing two ſeeds.

SPECIES.

1. Hartogia capenſis.

Lin. ſyſt. 165. *ſuppl.* 128.

DESCRIPTION, &c.

This is a tree, with oblong, ſerrate, blunt, ſmooth leaves. The flowers are axillary, minute, peduncled. Thunberg diſcovered it in the woods near the Cape of Good Hope [e].

Hartogia. See *Dioſma.*

Hart-root. See *Athamanta.*

Hart's-tongue. See *Aſplenium.*

Hart-wort. See *Tordylium.*

Hasel. See *Corylus.*

Hassagay-tree. See *Curtiſia.*]

HASSELQUISTIA. (*So named by Linneus, in memory of his pupil, Fridric Haſſelquiſt, M.D. who travelled into the Holy Land, &c. and died at Smyrna in* 1752. *His travels are publiſhed.*)

Lin. gen. n. 341. *Reich.* 360. *Schreb.* 462. *Gærtn. t.* 21. *Juſſ.* 224.

Claſſ. 5. 2. Pentandria Digynia.

Nat. order of *Umbellatæ* or *Umbelliferæ.*

GENERIC CHARACTER.

Cal. *Umbel* ſpreading. *Umbellules* ten, five of which are in the circumference.—The rudiment of the central umbellule is a mortified vitiated body, pedicelled, ſomewhat three-ſided, fleſhy, depreſſed, dark-coloured, hoary above, with white hairs.—*Involucre* very ſmall, five-leaved, ſubulate, reflex. *Involucels* halved: thoſe of the outer ones three-leaved, ſubulate, nodding, ſhorter than the umbellule.—Umbel when fruit-bearing converging.

Cor. *Flowers* radiate, even of the inner umbellules. *Floſcules of the ray* hermaphrodite: petals unequal, bowed in and bifid, the outmoſt petal two clefts, and the next ſingle one large, (ſo that in each corollule there are four clefts large, and ſix ſmall). *Floſcules of*

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[a] Swartz. [b] Sloane. [c] Hort. kew. [d] Swartz.

[a] Linn. ſuppl.

the inner diſk male: petals nearly equal, bowed in and bifid (all the clefts ſmall).

Stam. *Filaments* five to all the floſcules, longer than the ſmaller petals. *Anthers* roundiſh.

Pist. *Germ* inferior. *Styles* filiform, permanent. *Stigmas* obtuſe.

Per. none.

Seeds *outmoſt* double, oval, ſmooth, the edge thicker, crenulate. *Inner* ſolitary, hemiſpherical, drooping, pitcher-ſhaped, with the ſide hollow; theſe alſo are furniſhed with two ſtyles.

In the inner diſk none.

ESSENTIAL CHARACTER.

Cor. radiated, in the diſk male. *Seeds* in the circumference double, with a notched edge: in the diſk ſolitary, pitcher-ſhaped, hemiſphærical. (outer orbiculate, flat, inner bullate. *G.*)

SPECIES.

1. Haſſelquiſtia ægyptiaca. *Egyptian Haſſelquiſtia.*
Lin. ſpec. 355. *ſyſt.* 275. *Reich.* 1. 660. *amoen.* 4. 270. *mant.* 217. *ſuppl.* 179. *Jacqu. hort.* 1. 37. *t.* 87. *Gouan. illuſtr.* 11. *Gærtn. fruct.* 84.
Leaves pinnate, leaflets pinnatifid.

[2. Haſſelquiſtia cordata. *Heart-leaved Haſſelquiſtia.*
Lin. ſyſt. 275. *ſuppl.* 179. *Jacqu. hort.* 2. 91. *t.* 193. *Gærtn. fruct.* 85.
Leaves heart-ſhaped.

DESCRIPTIONS, &c.

1. Root fuſiform, ſmaller than the finger, white, annual. Stem a foot and half high, upright, round, white, with rough hairs, finally muricate-ſcabrous. Branches from the upper axils, ſimple. Leaves alternate, remote, petioled, toothed, blunt, ſcabrous underneath on the ribs. Petiole ſcabrous. Sheath bellying, woolly white at the baſe, and on the upper edge, purple on the lower edge. Umbels of flowers at the top of the ſtem, and at the ends of all the branches. Peduncle five-cornered, muricate. Corolla white. Anthers greeniſh. Stamens and ſtyles white[b].

The outer ſeeds are of a pale ſtraw-colour. The inner are naturally double as well as them, but one is conſtantly abortive, and adheres to the inner ſide of the other near the top, in form of a withered ſcale: the other as it grows, turns into a membranaceous bulla, opening on the inner ſide by a large fungous hole ſurrounded with a crenulate margin, and has only a ſingle embryo in it[c].

Native of Egypt.—Cultivated in 1768, by Mr. Miller. It flowers in july[d].

2. Annual. Stem upright, flexuoſe, a little ſtreaked, hairy at bottom. Lower leaves ternate: the ſide leaflets ſubſeſſile, ovate, crenate, that at the end petioled, cordate, crenate, obtuſe: upper leaves cordate, ſimple. Involucre of many reflex briſtles, ſhorter by half than the corolla: involucels briſtle-ſhaped, the length of the flowers. Umbel copious, flat, white, without the central body. Marginal petals of the umbellules two, larger, flat, obovate; the reſt nearly equal, ſmall, ovate, entire[e]. Seeds very like thoſe of the foregoing, but much ſmaller: thoſe in the ray membranaceous and compreſſed, ſurrounded with a ſmooth, narrow, white rim, and within that of a dirty ferruginous colour: thoſe in the centre ovate-bullate, ferruginous bay colour on the back, ſurrounded at the aperture with a thickened, ſmooth, white rim[f].

It varies with all the leaves ſimple and ternate[g]. Introduced in 1787, by Mr. Zier[h].]

PROPAGATION AND CULTURE.

Theſe plants are biennial, and being natives of warm countries, are with difficulty preſerved in England; for when the plants come up early in the ſpring, they do not perfect their ſeeds the ſame year; and thoſe plants which ariſe in the autumn, ſeldom live through the winter; the ſureſt method therefore to procure good ſeeds in this country, is to ſow the ſeeds in pots about the middle of auguſt, placing the pots where they may have the morning ſun only, being careful to water them duly, to weed and thin them. In october remove the pots into a common frame, where they may enjoy the free air in mild weather, but be ſcreened from froſt. The ſpring following, if the plants are carefully turned out of the pots, and planted in the full ground, they will flower in june, and the ſeeds will ripen in auguſt.

[Hastingia. See *Abroma.*
Hatchet-Vetch. See *Coronilla.*
Haver. See *Avena.*
Hawkweed. See *Hieracium.*]
Hawthorn. See *Cratægus.*
Hazel-nut-tree. See *Corylus.*
[Heart's-ease. See *Viola.*
Heart-seed. See *Cardioſpermum.*
Heath. See *Erica.*
——— Berried. See *Empetrum.*
——— Sea. See *Frankenia.*
Hebe Juſſieu. See *Veronica decuſſata.*

HEBENSTREITIA. (*So named by Linneus, in memory of Joh. Ernſt. Hebenſtreit, Prof. of Medicine at Leipſic; he travelled into Africa, and publiſhed Definitiones Plantarum* 1731.)
Lin. gen. n. 770. *Reich.* 831. *Schreb.* 1033. *Gærtn. t.* 51. *Juſſ.* 110.
Claſſ. 14. 2. Didynamia Angioſpermia.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, tubular, membranaceous, emarginate, gaping longitudinally underneath.

Cor. monopetalous, one-lipped: *tube* cylindric, longer than the calyx, gaping on the lower ſide half way; *border* aſcending, flattiſh, quadrifid, the clefts nearly equal.

Stam. *Filaments* four, of which the upper pair is inſerted into the edge of the corolla under the throat, and ſtands out, the lower anterior pair is bent back to the ſides. *Anthers* creſcent-ſhaped, compreſſed, truncate outwards.

Pist. *Germ* very ſmall. *Style* filiform, flexuoſe, bent back through the fiſſure of the corolla. *Stigma* ſimple.

Per. *Capſule* oblong, one-celled, two-valved.

Seeds two, oblong, convex on one ſide, three-furrowed, flat on the other.

ESSENTIAL CHARACTER.

Cal. emarginate, cleft underneath. *Cor.* one-lipped, lip aſcending, four-cleft. *Stam.* inſerted into the edge of the border of the corolla. *Capſ.* containing two ſeeds.

SPECIES.

1. Hebenſtreitia dentata. *Tooth-leaved Hebenſtreitia.*
Lin. ſpec. 878. *ſyſt.* 570. *Reich.* 3. 174. *hort. cliff.* 497. 326. *Gærtn. fruct.* 238. *Berg. cap.* 153. *Burm. afr.* 109. *t.* 41. *f.* 1. *Comm. hort.* 2. 247. *t.* 109. (Valerianella). *Raii ſuppl.* 245. (Valerianoides). *Burm. afr.* 114. *t.* 42. *f.* 2. (Pedicularis).
Leaves linear toothed, ſpikes ſmooth.

2. Hebenſtreitia ciliata.
Lin. ſyſt. Reich. 3. 157. *mant.* 420. *Berg. cap.* 154. *Burm. afr.* 109. *t.* 41. *f.* 1. (Rapunculus).
Leaves linear, toothed, calyxes three-valved, ciliate.

3. Hebenſtreitia integrifolia. *Entire-leaved Hebenſtreitia.*
Lin. ſpec. 878. *ſyſt.* 570. *Reich.* 3. 175. *hort. cliff.* 497.
Leaves linear, quite entire.

4. Hebenſtreitia cordata. *Heart-leaved Hebenſtreitia.*
Lin. ſyſt. 570. *Reich.* 3. 175. *mant.* 420.
Leaves ſomewhat fleſhy, cordate, ſeſſile.

5. Hebenſtreitia Erinoides.
Lin. ſyſt. 570. *ſuppl.* 286.
Leaves oblong, ſerrate, hairy, bractes entire, hiſpid.

6. Hebenſtreitia fruticoſa. *Shrubby Hebenſtreitia.*
Lin. ſyſt. 570. *ſuppl.* 287.
Leaves lanceolate, toothed, ſmooth, bractes entire, ſtem ſhrubby.

DESCRIPTIONS, &c.

1. Stalk upright, a foot high, with ſimple aſcending branches next the root, and under the ſpike. Leaves alternately ſcattered, ſomewhat hiſpid, upright, with

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[b] Linn. mant.
[c] Gærtner.
[d] Hort. kew.
[e] Linn. ſuppl.
[f] Gærtner.
[g] Linn. ſuppl.
[h] Hort. kew.

copious leaflets branching a little from each axil. Spike terminating, ſeſſile, oblong, barren at bottom; with ſmooth bractes, awl-ſhaped, imbricate in ten longitudinal rows, one to each flower; for the ſpike is conſtructed of five-flowered whorls, but alternate. Corolla white, with a red throat; ſingular in having the ſtamens placed on the very edge of the fiſſure [a]:—the lip widens outwards, and is three-lobed at the end, the middle lobe bifid, the ſide ones emarginate. Capſule ovate-acuminate, ending with the ſtyle, ſomewhat membranaceous, compreſſed like a lens. Seeds ſub-elliptic, acuminate at the tip, ſlightly emarginate at the baſe, pale ſtraw-colour, fixed to the bottom of the capſule without any receptacle [b].—The flowers in the morning are without ſcent, at noon they are ſtinking and nauſeous, in the evening ambroſiac, like the Oriental Hyacinth [c].

Native of the Cape of Good Hope. Biennial. Flowers here from february to november. Introduced in 1770, by Monſ. Richard [d].

2. 3. Both theſe bear a great reſemblance to the foregoing; and the third ſeems only to be a variety of the ſecond. They are both natives of the Cape.

4. An underſhrub. Stem upright, whitiſh, ſmooth and even, ſparingly branched only at top. Leaves alternate or oppoſite, ſeſſile, or ſomewhat ſtem-claſping, blunt, ſcarcely crenate, gibbous underneath. Spike terminating, ſeſſile. Corolla white, with a fleſh-coloured throat. Anthers compreſſed, yellow, as in H. dentata [e].—Native of the Cape, and introduced in 1774, by Maſſon [f].

5. 6. Found at the Cape by Thunberg.]

HEDERA. (Ab edendo, quod arbores exedit: *becauſe it waſtes and devours trees.—A very doubtful etymology; but better than another,* ab hærendo.)

Engl. *Ivy.* Fr. *Lierre.*

Lin. gen. n. 283. *Reich.* 304. *Schreb.* 395. *Tourn. t.* 384. *Gærtn. t.* 26. *Juſſ.* 214.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Hederaceæ.—Caprifolia,* Juſſ.

GENERIC CHARACTER.

Cal. *Involucre* of a ſimple umbel, very ſmall, many-toothed. *Perianth* very ſmall, five-toothed, ſurrounding the germ.

Cor. *Petals* five, oblong, ſpreading, with the tips bowed inwards.

Stam. *Filaments* five, ſubulate, upright, of the ſame length with the corolla. *Anthers* trifid at the baſe, incumbent.

Pist. *Germ* turbinate, ſurrounded by the receptacle. *Style* ſimple, very ſhort. *Stigma* ſimple.

Per. *Berry* globular, one-celled (five-celled. *G.*).

Seeds five, large, gibbous on one ſide, angular on the other.

ESSENTIAL CHARACTER.

Pet. five, oblong. *Berry* five-ſeeded, ſurrounded by the calyx.

SPECIES.

1. Hedera Helix. *Common Ivy.*
Lin. ſpec. 292. *Reich.* 1. 568. *fl. lapp. n.* 91. *ſuec. n.* 209. *hort. cliff.* 74. *mat. med.* 70. *Gærtn. fruct.* 130. *Hudſ. angl.* 100. *With.* 245. *Curt. lond.* 1. 16. *Hall. helv. n.* 826. *Scop. carn. n.* 271. *Pollich. pal. n.* 237. *Neck. gallob.* 127. *Krock. ſileſ. n.* 359. *Blackw. t.* 188. *Plenck, ic. t.* 150.
Hedera arborea. *Bauh. pin.* 305. *Park. theat.* 678. 1.
H. communis major & minor. *Bauh. hiſt.* 2. 111. 1. *Raii ſyn.* 459. *hiſt.* 1505.
H. corymboſa. *Ger.* 708. 1. *emac.* 857. 1.
β. H. poetica. *Bauh. pin.* 305. *Raii hiſt.* 1505.
Leaves ovate, undivided.
γ. H. major ſterilis. *Bauh. pin.* 305.
H. Helix. *Ger.* 708. 2. *emac.* 857. 2. *Park. theat.* 679. 4.
Leaves five-lobed.
δ. H. humi repens. *Bauh. pin.* 305.
Leaves lanceolate.
Leaves ovate and lobed.

[2. Hedera capitata. *Cluſter-flowered Ivy.*
Smith. icon. rar. 1. *t.* 4.
Aralia capitata. *Jacqu. amer.* 89. *t.* 61. *Swartz. prodr.* 55. *Ait. hort. kew.* 1. 382.
Leaves elliptical, entire; racemes compound, terminating; flowers ſeſſile, in little heads.]

3. Hedera quinquefolia. *Five-leaved Ivy.*
Lin. ſpec. 292. *ſyſt.* 243. *hort. cliff.* 74. *Gron. virg.* 24. *Corn. canad.* 99. *t.* 100. *Duham. arb.* 4. *Raii hiſt.* 1699. *Park. parad.* 612. 22. *t.* 609. *f.* 7.
Helix. *Mitch. gen.* 30.
Leaves quinate, ovate, ſerrate.

[4. Hedera pendula.
Swartz. prodr. 51.
Leaves ovate-lanceolate, entire, peduncles very long, pendulous,

5. Hedera nutans.
Swartz. prodr. 51.
Leaves elliptic, coriaceous, umbels nodding, hemiſpherical.

6. Hedera terebinthinacea.
Vahl ſymb. 3. 42. *Lin. zeyl. n.* 624. *Burm. zeyl.* 28. (Itta).
Leaves in ſevens, elliptic, quite entire.

DESCRIPTIONS, *&c.*

1. Common Ivy is a paraſitical ſhrub.] Where it meets with any ſupport, ſuch as walls, buildings or trees, the ſtem will adhere to them, and riſe to a very great height, inſinuating itſelf by a great abundance of fibres into the joints of walls, or the bark of trees. If no ſupport is near, the ſtalks trail upon the ground, taking root their whole length, ſo that they cover the ſurface cloſely, and are difficult to eradicate; for where any ſmall parts of the ſtalks are left, they will ſoon ſpread and multiply. Whilſt Ivy is fixed to any ſupport, or trails upon the ground, the ſtalks are ſlender and flexible; but when it has reached to the top of its ſupport, they ſhorten and become woody, forming themſelves into large buſhy heads; their leaves are larger, more of an oval ſhape, and not divided into lobes like the lower leaves: this difference occaſioned the old botaniſts to take them for different ſpecies. Whilſt the ſtalks trail, Ivy does not produce any flowers; and in this ſtate it is called *Barren* or *Creeping Ivy:* but when the branches get above their ſupport, they produce flowers at the end of every ſhoot; theſe are ſucceeded by berries, formed into round bunches called by the ancients *corymbi,* and turning black before they are ripe. [In this ſtate it is called *Climbing* or Berried Ivy.—The trunk in old trees is covered with an aſh-coloured chopped bark; in the young branches it is of a green or purple colour. Leaves alternate, evergreen, gloſſy, ſmooth, while the plant creeps, three-lobed or ſometimes five-lobed; but when it quits its ſupport, ovate: they are ſometimes tinctured with red, ſometimes painted with white veins, particularly in the young branches. The petioles are long, and dilated at the baſe. The flowers are yellowiſh, or greeniſh white, in a very cloſe, thick umbel, at the extremities of the twigs [a].—The berry is placed below the receptacle of the flower, and is crowned with the five-cornered, ſtreaked rudiment of it; at firſt it is ſucculent, with a purple juice; afterwards it becomes coriaceous, dry, and very obſcurely quinquangular. The five cells are inveſted by their proper ſilky-white membrane: the partitions are very thin, one or more frequently obliterated when the berry is in a ſtate of maturity. The ſeeds are wrinkled and yellowiſh [b].

It is found wild all over Europe; but Linneus ſays it is by no means common in Sweden. Kalm remarks, that he never ſaw the common Ivy in North America, except once, againſt a ſtone building, and this was apparently brought from Europe, and planted there [c]. Thunberg remarked it in Japan, and ſays that the leaves are commonly undivided there, and not lobed. It begins to flower with us in ſeptember. Being ſo late a blower, it is much reſorted to by bees and flies, when little other food is to be had. The berries increaſe during the winter, are full formed in february, and ripen in april; furniſhing food for wild pigeons, black-birds, thruſhes, &c. in the ſpring. Black-birds and ſeveral other birds build their neſts in the ſtump. Sheep are fond of Ivy; it is a warm and wholſome food for them in hard weather, the ſhepherds therefore in ſnowy ſeaſons cut down branches for their flocks to browze on. Cato directs that in a ſcarcity of hay, cattle ſhould be foddered with it. The ancients held Ivy in great eſteem. It formed the poetical garland

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[a] Linn. ſyſt. [b] Gærtner. [c] Linn. ſyſt.
[d] Hort. kew. [e] Linn. mant. [f] Hort. kew.

[a] Curtis, Juſſieu, Krocker. [b] Gærtner.
[c] Travels, 1. 141. Engl. edit.

> "Inter victrices *hederas* tibi ſerpere lauros."

Bacchus is repreſented crowned with it to prevent intoxication: and Homer deſcribes his heroes as drinking out of a cup made of the wood[d].

As a medicine it is ſcarcely admitted into modern practice. The leaves have a nauſeous taſte. Haller ſays they are given in Germany as a ſpecific in the atrophy of children. Common people apply them to iſſues and corns. The berries have a little acidity. They purge and vomit[e]. In Gallicia they give the ſeeds bruiſed in pleuriſies, to the qnantity of two teaſpoonfulls, every eight hours[f]. In warm climates a reſinous juice exſudes from the ſtalks[g]; or may be procured by wounding them. It is inſipid and inodorous, inflames in burning, with a pleaſant aromatic ſmell, and has then a ſlight aſtringency. It tinges ſpirit of wine of a reddiſh brown colour, and is ſaid to be aperient, reſolutive and balſamic: but it is not in uſe[h].

The wood is ſoft and porous, ſo as to tranſmit liquids, if turned of a ſufficient degree of thinneſs. The roots are uſed by leather-cutters to whet their knives upon. The branches, being very full of leaves, are as effectual as any thing to protect the tender bloſſoms of apricots, peaches and nectarines, againſt the cold winds and froſts of february and march[i].]

In the latter part of the laſt century, when it was the faſhion to fill gardens with all ſorts of ſheered ever-greens, many of theſe plants were trained into round heads, clipped into globes, cones, &c.; and being ſo hardy as not to be injured by weather, and growing in any ſoil, were then much eſteemed: ſince this taſte has been exploded, the Ivy is ſeldom admitted into gardens, unleſs to cover walls, or run over ruins, &c. for which purpoſes no plant is ſo well adapted.

[Mr. Curtis, however, obſerves that few people are acquainted with the beauty of Ivy when ſuffered to run up a ſtake, and at length to form itſelf into a ſtandard; the ſingular complication of its branches, and the vivid hue of its leaves, give it one of the firſt places amongſt ever-greens in a ſhrubbery. In woods, when ſuffered to grow large and rampant, this plant, by twining round the bodies of timber trees, does them great damage, and therefore ſhould be carefully deſtroyed, as it may eaſily be, by cutting any where through its trunk. But in ornamental outlets, where ever-greens do not abound, a few trees covered with Ivy have a very pleaſing effect; and induce birds of ſong to haunt thoſe thickets for the ſake of the berries and ſhelter. Ivy alſo produces very pictureſque effects in large maſſes of ruined buildings. Linneus affirms that it does no injury to buildings; but that can ſcarcely be admitted, when we conſider that it muſt harbour wet and filth, and that the branches will make their way into any fiſſure or defect in the wall, and inlarge it.

Beſides the varieties enumerated above, which ariſe merely from age and ſituation, there are two that may be found in the nurſeries:] one with ſilver-ſtriped leaves, and the other with yellowiſh leaves on the top of the branches.

2. Stem arboreſcent, eight feet high in the ſtove, erect, cylindrical, abruptly branched. Bark brown, a little cracked. Branches curved upwards, leafy, terminated by flowers. Leaves ſcattered, more crowded towards the tops of the branches, on foot-ſtalks, wide ſpreading, pointed, waved on the margin, very ſmooth, obſcurely three-nerved, veiny, bright green. Footſtalks various in length, nearly cylindrical, ſmooth, firmly fixed to the branch by an enlarged triangular baſe. Buds conſiſting of ſeveral large, roundiſh, ſmooth, yellowiſh ſcales, ſoon falling off, which are often tipped with the rudiments of a leaf, and appear like abortive leaves. Racemes erect, branches generally alternate, ending in little round heads of many ſeſſile flowers. Common foot-ſtalks obſoletely angular, pale green, ſprinkled with ruſty-coloured powder; partial ones cylindrical. Bractes ſolitary at the baſe of the latter, ſmall, concave, pointed, entire, powdery. Flowers numerous, white, ſo ſmall that the ſtructure is not readily to be underſtood; each ſtands on its proper involucre, reſembling a calyx of one leaf, in five diviſions, externally powdery, permanent. Calyx pale green, ſmooth, permanent. Petals on the margin of the calyx, ovate, ſomewhat pointed, white, deciduous. Filaments oppoſite to the teeth of the calyx, and alternate with the petals, ſpreading, white. Anthers roundiſh, two-lobed, yellow. Germen below the flower, crowned with the calyx, roundiſh, ſmooth. Styles ſhort erect, at firſt united into one body, then ſpontaneouſly ſplitting into ſeveral, varying in number from three to ten. Berry ſmooth, brown, with five or more cells, each probably containing one ſeed.

Jacquin, the firſt diſcoverer, long ago ſuſpected that this ſpecies belonged to the genus Hedera or Ivy; but later authors have kept it in that of Aralia.

This fine plant was diſcovered in the woods of Martinico, by Profeſſor Jacquin, and in Jamaica by Dr. William Wright and Mr. Francis Maſſon. (In the catalogue of the Royal garden at Kew, it is ſaid to have been introduced in 1778, by Mr. William Forſyth, but) it exiſted in the collection of the late Marquis of Rockingham long before the year 1777. It flowered for the firſt time in Europe in the ſtove of the Marchioneſs in 1787[k].

3. Racemes trifid, twice dichotomous, finally umbelled. Calyx very ſhort, bluntly toothed, red at the tip. Petals blunt, arched at the tip, green. Gland of the receptacle higher than the calyx, ſurrounding the germ with a few notches. Filaments filiform, a little longer than the corolla. Style of the ſame length with the filaments. Germ ſuperior, containing four ſeeds. The number varies in the flower, being either four or five[l].]

It grows naturally in all the northern parts of America, was firſt brought to Europe from Canada, and has been chiefly employed to cover walls or high buildings, which this plant will do in a ſhort time, for it will ſhoot almoſt twenty feet in one year; but as the leaves fall off in autumn, and are late before they come out in the ſpring, it is not much eſteemed, unleſs where better things will not thrive; not being injured by ſmoke, or cloſeneſs of air, it is proper to cover buildings in great towns. The ſtalks put out fibres, like the common Ivy, which inſinuate themſelves into the joints of walls.

[From Parkinſon it appears that it was cultivated here in 1629.

Juſſieu is of opinion that it ſhould be removed to the genus Vitis or Vine.

4. 5. Natives of Jamaica[m].

6. The whole is ſmooth. Branches round, ſubherbaceous, the thickneſs of a ſwan's quill. Leaflets petioled, umbelled, from three to four inches long, the ſide ones gradually leſs, ſomewhat veined, ſometimes ending in a ſhort point. Petioles a ſpan long, round, embracing with the widened baſe; the middle petiolules two inches long; the ſide ones ſhorter. Raceme terminating, on the ſide of the leafy branch, compound: general peduncle three inches long, the thickneſs of a ſwan's quill; the partial ones in fives, alternate, the two laſt conjugate, half a foot long, ſpreading. Calyx a very ſhort entire rim. Petals ſix, linear. Stamens ſix, the length of the corolla. Style the length of the filaments. Native of Ceylon[n].]

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[d] Curtis.
[e] Withering.
[f] Townſ. Spain, I. 371.
[g] Withering.
[h] Krocker.
[i] Withering.
[k] Smith, ic. rar.
[l] Schreber in Linn. ſyſt.
[m] Swartz.
[n] Vahl.

PROPAGATION AND CULTURE.

The different ſpecies are eaſily propagated by their trailing branches, which ſend forth roots their whole length; or by cuttings, planted on a ſhady border in autumn, which by the following autumn will be fit to plant where they are deſigned to remain; or by ſeeds ſown ſoon after they are ripe, which is in the beginning of april: if theſe be kept moiſt and ſhaded, they will grow the ſame ſpring, otherwiſe they will remain a year in the ground.

HEDERA TERRESTRIS. See *Glechoma.*
[HEDGE-HYSSOP. See *Gratiola.*
HEDGE-MUSTARD. See *Siſymbrium* & *Eryſimum.*
HEDGE-NETTLE. See *Galeopſis.*]

HEDGES. Hedges are either planted to make fences round incloſures, or to part off and divide the ſeveral parts of a garden: when they are deſigned as outward fences, they are planted either with Hawthorn, Crabs, or Black-thorn, which is the Sloe; but thoſe Hedges which are planted in gardens, either to ſurround wilderneſs quarters, or to ſcreen the other parts of a garden from ſight, are planted with various ſorts of plants, according to the fancy of the owner; ſome preferring ever-green Hedges, in which caſe the Holly is beſt, next the Yew, then Laurel, Lauruſtinus, Phillyrea, &c. others, who make choice of the deciduous plants, prefer the Beach and Hornbeam, Engliſh Elm, or the Alder, to any other; I ſhall firſt treat of thoſe Hedges which are planted for outſide fences, and afterwards briefly touch on the other.

Theſe Hedges are moſt commonly made of Quick, yet it will be proper, before planting, to conſider the nature of the land, and what ſorts of plants will thrive beſt in that ſoil, whether it be clay, gravel, ſand, &c. likewiſe what the ſoil is from whence the plants are to be taken; for if the land they are taken from is much better than that in which they are to be planted, it will be more difficult to get them to grow. As for the ſize, the ſets ought to be about the bigneſs of a gooſe quill, and cut within about four or five inches of the ground; they ſhould be freſh taken up, ſtraight, ſmooth, and well rooted. Thoſe plants which are raiſed in the nurſery, are to be preferred to all others, and if raiſed on a ſpot near the place, it will be beſt. The time for planting is february, march and april.

Secondly, if the Hedge has a ditch, it ſhould be made ſix feet wide at top, and one foot and a half at bottom, and three feet deep, that each ſide may have a proper ſlope; for when the banks are made too upright, they are very ſubject to fall down after every froſt or hard rain; beſides, if the ditches are made narrower, they are ſoon choked up in autumn by the falling leaves, and the growth of weeds, nor are they a ſufficient fence to the Hedge againſt cattle, where they are narrower.

Thirdly, if the bank be without a ditch, the ſets ſhould be ſet in two rows, almoſt perpendicular, at the diſtance of a foot from each other, in the quincunx order, ſo that in effect they will be but ſix inches aſunder.

Fourthly, The turf is to be laid with the Graſs ſide downwards, on that ſide of the ditch the bank is deſigned to be made, and ſome of the beſt mould ſhould be laid upon it, to bed the Quick; then the Quick is to be planted upon it a foot aſunder, ſo that the ends of the Quick may ſtand upright.

Fifthly, When the firſt row of Quick is planted, it muſt be covered with mould, and the turf laid upon it as before; ſo that when the bank is a foot high, you may plant another row of ſets againſt the ſpaces of the lower Quick, and cover them as the former was done; and the bank is to be topped with the bottom of the ditch, and a dry, or dead Hedge laid on the other ſide, to defend the under plantation from the cattle.

In making of theſe dead Hedges, there ſhould be ſtakes driven into the looſe earth, at about two feet and a half diſtance, ſo low as to reach the firm ground.

Oak ſtakes are accounted the beſt, and Black-Thorn and Sallow the next; then let the ſmall buſhes be laid at bottom, but not too thick, for that will cauſe the buſhes to rot; but the upper part of the Hedge ſhould be laid with long buſhes to bind the ſtakes in with, by interweaving them.

And, in order to render the Hedge yet ſtronger, you may edder it, as it is called, i. e. bind the top of the ſtakes in with ſome ſmall long poles, or ſticks on each ſide; and when the eddering is finiſhed, drive the ſtakes anew, becauſe the waving of the Hedge and eddering is apt to looſen the ſtakes.

The Quick muſt be conſtantly kept weeded, and ſecured from being cropped by the cattle, and in february it will be proper to cut it within an inch of the ground, if it was not done before; which will cauſe it to ſhoot ſtrong, and help it much in the growth.

When a Hedge is of about eight or nine years growth, it will be proper to plaſh it; the beſt time for this work is either in october or february.

When a Hedge is grown old, i. e. of about twenty or thirty years growth, and there are in it old ſtubs as well as new ſhoots, the old ſtubs ſhould be cut ſloping off within two or three inches of the ground, and the beſt and longeſt of the middle ſize ſhould be left to lay down; and ſome of the ſtrongeſt, at the height of five or ſix feet, according as you deſign the height of the Hedge to be, may be left to ſerve inſtead of ſtakes, and freſh ſtakes ſhould be put in thoſe places where they are wanting; the Hedge ſhould be then thinned, ſo as to leave on the ſtubs only ſuch ſhoots as are deſigned to be of uſe, that there may be room left to put a ſpade in between them; the ditch alſo ſhould be cleanſed, and each ſide of the ſlopes kept as in a new ditch; and where the earth is waſhed from the roots of the Quick, or is hollow, face it anew with ſo much of the firſt ſpit of earth that is dug out of the ditch, as there is occaſion for, and lay what is dug out at the ſecond ſpit, on the top of the bank; for if it be laid on the ſide, or face of the bank, it will ſlip into the ditch again when wet comes, and alſo take a great deal of the bank along with it.

In plaſhing Quicks, there are two extremes to be avoided; the firſt is, laying it too low and too thick; becauſe it makes the ſap run all into the ſhoots, and leaves the plaſhes without nouriſhment, which, with the thickneſs of the Hedge, kills them.

Secondly, It muſt not be laid too high, becauſe this draws all the ſap into the plaſhes, and ſo cauſes but ſmall ſhoots at the bottom, and makes the Hedge ſo thin, that it will neither hinder the cattle from going through, nor from cropping of it.

When the ſhoot that is deſigned to be plaſhed is bent, give it a ſmall cut with a bill, half through, ſloping a little downwards, and then weave it about the ſtakes; and when the whole is finiſhed, trim off the ſmall ſuperfluous branches that ſtraggle too far out on both ſides of the Hedge.

If the ſtubs are very old, cut them quite down, and ſecure them with good dead Hedges on both ſides, till the young ſhoots are got up tall enough to plaſh, and plant new ſets in the void ſpaces.

In making a Hedge, if it be ſet with Crab Stocks, it will be proper to leave one ſtanding uncut up at every thirty or forty feet, if the ground on both ſides of the Hedge be your own; which being done, they may be ſo ordered, by pruning or ſtaking, that one may lean into one ground, and the other into another, &c.

Theſe ſtocks ſhould be pruned up every year, till they are brought out of the reach of the cattle, and then they may be grafted with the Red Streak, Gennet-moil, or what other kind of cyder Apple you pleaſe.

If the ſtocks be of Apple kernels, they may ſtand ungrafted, for many of them will yield very good cyder fruit; but then ſuch ſtocks as are not grafted, will be longer before they bear; and alſo when you do graft, you may be certain of your kind; but if you find a very natural ſtock, which by leaf, ſhoot, and bud, appears likely, you may try it, and ſo you may have a new fine fruit; and if you do not like it, you may graft it when you pleaſe.

As for the reſt of the Hedge, when it has ſhot four or five years, you may lay it to make a fence; for the doing of which, take the following directions:

Firſt, At every laying to lay down ſome old plaſhes; or, if the Hedge be thin, young ones; but they muſt be ſo laid, as to point with their ends to the ditch ſide of the bank, the ends being kept low on the bank; by being ſo ordered, they will the better thicken the bottom of the Hedge, and keep up the earth of the bank.

Secondly, To heighten the bank every time you lay earth on it, ſo as to cover the layers, all but the ends, this earth will very much help the Quick; and by heightening the banks, and deepening the ditch, you will render the fence the better.

Thirdly, Not to cut the plaſhes too much, but juſt ſo as they may bend down well; not to lay them too upright, as ſome do, but to lay them near to a level; for by ſo doing, the ſap will the better break out at ſeveral places, and not run ſo much to the ends, as it will when they lie too much upon the ſlope.

If you have much wood to ſpare, you may cut up great part of thoſe that grow near the ditch, but then you ought to hang the bank with buſhes, to prevent cattle from cropping them the firſt year; theſe will ſhoot ſtrong, ſecure the Hedge, keep up the bank, and thicken the bottom of the Hedge.

Fourthly, Take care to lay the Hedge pretty thick, and turn the beard on the ditch ſide; but you muſt not let the beard hang uncut, though it makes a good ſhew at the firſt making, but you muſt cut off all the ſtraggling boughs within half a foot of the Hedge on both ſides, which will cauſe it to ſhoot ſtrong at theſe places, and make the Hedge much the thicker.

Fifthly, If the bank be high, make the Hedge ſo low, that it may juſt ſerve for a fence the firſt year, for it will ſoon grow higher; and the lower the Hedge is made, the faſter the Quick will grow, and alſo will be the thicker at the bottom; but care muſt be taken to preſerve it from cattle on the field ſide for the two firſt years that it is made.

Sixthly, If you would have a good Hedge, or fence, you ſhould new lay it once in fourteen or fifteen years, and conſtantly root out Elder, Traveller's Joy (which ſome call Bull-bine), Briony, &c. and do not leave too many high ſtandards, or pollards in it, though the Elm is one of the beſt; alſo no dead wood is to be left in the bottom of the Hedges, for that will choke the Quick; but if there be a gap, the dead Hedge ſhould be made at a diſtance.

The Crab is alſo frequently planted for Hedges, and if the plants are raiſed from the kernels of the ſmall wild Crab, they are much to be preferred to thoſe which are raiſed from kernels of all ſorts of Apples without diſtinction; becauſe the plants of the true ſmall Crab never ſhoot ſo ſtrong as thoſe of the Apples, ſo may be better kept within the proper compaſs of a Hedge; and as they have generally more thorns upon them, they are better guarded againſt cattle, &c. than the other; beſides, the plants of the Crab will grow more equal than thoſe which are raiſed from the kernels of various kinds of Apples, for theſe always produce a variety of plants, which differ from each other in their manner of growth, as much as in the ſize and flavour of their fruits; ſo that Hedges made of theſe will not appear ſo well, nor can be ſo well managed as the other.

Some perſons intermix Crab with the White Thorn in their Hedges, but this is not a good method; for the plants of the Crab will grow much ſtronger than thoſe of the White Thorn, ſo that the Hedge will not be of equal growth; which is not near ſo beautiful or uſeful, as when the plants of a Hedge keep pace in their growth.

The Black Thorn, or Sloe, is alſo frequently planted for Hedges, and is a ſtrong durable plant for that purpoſe, eſpecially as it is ſo ſtrongly armed with thorns, that cattle ſeldom care to browze upon it; but where this is planted, the beſt way is to raiſe the plants from the ſtones of the fruit; for all thoſe which are taken from the roots of old trees, ſpawn, and put out ſuckers in ſuch plenty from their roots, as to ſpread over, and fill the neighbouring ground to a conſiderable diſtance on each ſide of the Hedge; and this plenty of ſuckers drawing away the nouriſhment from the old plants of the Hedge, they never grow ſo well as where there are few or no ſuckers produced, which thoſe plants which are propagated from the ſtones ſend not forth; or at leaſt but ſparingly, therefore may with little trouble be kept clear of them. The beſt method of raiſing theſe Hedges is, to ſow the ſtones in the place where the Hedge is intended, where it can be conveniently done, for then the plants will make a much greater progreſs than thoſe which are tranſplanted; but the objection to this method will ariſe from the difficulty of ſecuring the young plants from the cattle; but this can have little force, when it muſt be conſidered that if the Hedge is planted, it muſt be fenced for ſome years, to prevent the cattle from deſtroying it; therefore the ſame fence will do for it when ſown; nor will this require a fence much longer than the other. For the plants which ſtand unremoved, will make a better fence in ſeven years than that which is planted, though the plants ſhould be of three or four years growth when planted; which is what I have ſeen two or three times, where the experiment has been tried. The ſtones of this fruit ſhould be ſown early in january, if the weather will permit; but when they are kept out of the ground longer, it will be proper to mix them with ſand, and keep them in a cool place. The buſhes of the Black Thorn are by much the beſt of any for making of dead Hedges, being of longer duration, and having many thorns; neither the cattle nor the Hedge-breakers will care to meddle with them; theſe buſhes are alſo the beſt to be uſed for under ground drains, for the draining of land, for they will remain ſound a long time when the air is excluded from them.

The Holly is ſometimes planted for Hedges, and is a very durable ſtrong fence; but where it is expoſed, there will be great difficulty to prevent its being deſtroyed, otherwiſe it is by far the moſt beautiful plant, and being an Evergreen, will afford much better ſhelter to cattle in winter, than any other ſort of Hedge; and the leaves being armed with thorns, the cattle will not care to browze upon it. Another objection to this plant is the ſlow growth, ſo that Hedges planted with this plant, require to be fenced a much longer time than moſt others. This is a reaſon which muſt be admitted, to prevent this being generally practiſed; but in ſuch grounds as lie contiguous to, or in ſight of gentlemen's houſes, theſe ſort of Hedges will have an exceeding good effect, eſpecially when they are well kept, as they will appear beautiful at all ſeaſons of the year; and in the ſpring of the year, when the ſharp winds render it unpleaſant to walk abroad in expoſed places, theſe Hedges will afford good ſhelter, as they will effectually keep off the cold winds, if they are kept cloſe and thick. The ſureſt method of raiſing theſe Hedges is, by ſowing the berries in the place where they are to ſtand; but theſe berries ſhould be buried in the ground one year before they are ſown, by which method they will be prepared to grow the following ſpring. The way of doing this is, to gather the berries about Chriſtmas, which is the time they are uſually ripe, and put them into large flower-pots, mixing ſome ſand with them; then dig holes in the ground, into which the pots muſt be ſunk, covering them over with earth about ten inches thick; in this place they may remain till the following october, when they ſhould be taken up, and ſown in the place where the Hedge is intended. The ground for this Hedge ſhould be well trenched, and cleared from the roots of all bad weeds, buſhes, trees, &c. Then two drills ſhould be made at about a foot diſtance from each other, and about two inches deep, into which the ſeeds ſhould be ſcattered pretty cloſe, leſt ſome ſhould fail; for it is better to have too many plants come up, than to want. The reaſon of my adviſing two drills is, that the Hedge may be thick to the bottom, which in a ſingle row rarely happens, eſpecially if there is not great care taken of them in the beginning. When the plants come up, they muſt be carefully weeded; for if the weeds are permitted to grow among them, they will ſoon deſtroy them, or weaken them ſo much, that they will not recover their ſtrength in a long time. This ſhould be conſtantly obſerved by every perſon who is deſirous to have good Hedges of either ſort; for when the weeds are ſuffered to grow near the plants, they will not only rob them of a great part of their nouriſhment, but alſo prevent their putting out ſhoots near the ground, which will occaſion the bottom of the Hedge to be thin and naked.

When theſe Holly Hedges are deſigned to be kept very neat, they ſhould be ſheered twice a year, in may and auguſt; but if they are only deſigned as fences, they need not be ſheered oftener than once a year, which ſhould be about the latter end of june, or the beginning of july; and if this is well performed, the Hedges may be kept very beautiful.

The fences which are made to ſecure theſe Hedges from cattle while they are young, ſhould be contrived ſo as to admit as much free air as poſſible, which is abſolutely neceſſary for the growth of the plants; for when they are crowded on each ſide with dead Hedges, the plants ſeldom thrive well. The beſt ſort of fences for this purpoſe, are thoſe which are made with poſts and rails; or inſtead of rails, three ropes drawn from poſt to poſt, and holes made in the poſts to draw the ropes through; this is the cheapeſt fence of this kind, and will appear very handſome; but if ſheep are not admitted into the fields, there will be occaſion for two ropes only, which will be enough to keep off larger cattle; and if the ropes are painted over with a compoſition of melted pitch, brown Spaniſh colour, and oil, mixed well together, they will laſt ſound ſeveral years; and theſe ſort of fences never obſtruct the air, and the place, at the ſame time being open to view, the weeds will be better diſcovered than when the fences are cloſe. In the latter caſe, the Hedges are ſometimes ſuffered to be over-run with weeds, by their being excluded from the ſight, ſo are frequently forgotten, eſpecially in moiſt weather, when the weeds grow more luxuriant.

There are ſome perſons who intermix Holly with the White Thorn in making their Hedges, which if rightly managed, will have a good effect, eſpecially when young; but when this is practiſed, the Holly ſhould be planted ſo near, as that the Hedge may be entirely formed of it as it grows up, when the White Thorn ſhould be quite rooted out; for as theſe advance, they will not keep pace in their growth, ſo will not appear beautiful when intermixed.

When a Hedge of Holly is intended to be made by plants, the ground ſhould be well trenched, as was before adviſed for the ſeeds; and unleſs the ground be very wet, the plants ſhould be ſet in october; but in wet ground, march is preferable. The plants ſhould not be taken from a better ſoil than that in which they are to be planted; for when it ſo happens, the plants are much longer before they recover this change, than thoſe are which are taken from a leaner ſoil. If the plants have been before removed two or three times, they will have better roots, and will be in leſs danger of miſcarrying; beſides, they may be removed with balls of earth to their roots. When the froſt comes on, if mulch be laid upon the ground near the roots of the plants, it will prevent the tender fibres, which may then have been put out, from being deſtroyed by the cold. I would never adviſe the planting of Hedges with Holly plants, of above five or ſix years growth from the berries; for when the plants are older, if they take to grow, they are longer before they form a good Hedge, than plants which are much younger; and if the plants have been twice before tranſplanted, they will more certainly grow.

I ſhall next treat of Hedges for ornaments in gardens: theſe are ſometimes planted with Evergreens, eſpecially if they are not intended to grow very high; in which caſe, they are planted with deciduous trees. Evergreen Hedges are planted with Holly, Yew, Laurel, Lauruſtinus, Phillyrea, Alaternus, evergreen Oak, and ſome others of leſs note. The Holly is preferable to any other, for the reaſons before given. Next to this, moſt people prefer the Yew, on account of its growing very cloſe; for when theſe Hedges are well kept, they will be ſo thick as that a bird cannot get through them; but the dead colour of the Yew, renders theſe Hedges leſs agreeable. The Laurel is one of the moſt beautiful greens of any of the evergreen trees, but then it ſhoots ſo luxuriant, as to render it difficult to keep the Hedges which are planted with it, in tolerable ſhape; beſides, the leaves being very large, if the Hedge is clipped with ſheers, the leaves will be cut through, which gives them a bad appearance; therefore where there are Hedges of this kind, it will be the beſt way to prune them with a knife, cutting the ſhoots juſt down to a leaf. And although by this method the Hedge cannot be rendered ſo even as when cut with ſheers, yet it will have a much better appearance than that of moſt of the leaves being cut through and ſtubbed, in the manner they muſt be when ſheered.

The Lauruſtinus is alſo a very fine plant for this purpoſe, but the ſame objection is to be made to this as hath been to the Laurel; and as one of the great beauties of this plant is in its flowers, which are produced in the winter and ſpring, ſo when theſe are ſheered, the flowers are generally cut off, by which their beauty is loſt. Nor can this be avoided, where the Hedge is to be kept in cloſe order, therefore this plant is not ſo proper for the purpoſe; but in ſuch places where walls or other fences are deſigned to be hid, there is not any plant better adapted than this, provided it is rightly managed; for the branches of this plant are ſlender and pliable, ſo may be trained up cloſe to the fence, whereby it may be entirely covered; and if, inſtead of clipping theſe with ſheers, they are pruned with a knife, they may be ſo managed, as to have them full of flowers from the ground upward. This may be effected by pruning them in april, when the flowers are going off, cutting out thoſe ſhoots that have flowered, or project too far from the fence; always cutting cloſe to the leaf, that no ſtubs may be left: but thoſe new ſhoots of the ſame ſpring muſt by no means be ſhortened, becauſe the flowers are always produced at the extremity of the ſhoots of the ſame year; therefore when theſe are topped, as they muſt be by ſheering, there can be few or no flowers upon theſe plants, except toward the top, where the ſheers have not paſſed. By this method of knife pruning, the leaves will alſo be preſerved entire, and the Hedge may always be kept enough within compaſs; and ſo thick, as fully to anſwer the purpoſe of covering the fence; and by the ſhoots growing a little irregular, it will make a much better appearance than any ſhorn Hedge whatever.

The ſmall leaved and the rough leaved Lauruſtinus are the beſt ſorts for this purpoſe, becauſe their branches grow cloſer together than thoſe of the ſhining leaved; they are alſo more hardy, and flower much better than the other, when growing in the open air.

The true Phillyrea is the next beſt plant for Hedges; it is by the gardeners called the True Phillyrea, to diſtinguiſh it from the Alaternus, which they ſimply call the Phillyrea. The branches of this are ſtrong, the leaves pretty large, and of a ſtrong green colour. And as this is a plant of middling growth, the Hedges planted with this may be led up to the height of ten or twelve feet; and if theſe Hedges are kept narrow at the top, that there may not be too much width for the ſnow to lodge upon them, they may be rendered very cloſe and thick, and being a very good green, will make a fine appearance.

The Alaternus was formerly much more cultivated in the Engliſh gardens than at preſent. This was often planted to form Hedges, but the branches of this plant are too pliant for this purpoſe, being frequently diſplaced by ſtrong winds, which render theſe Hedges unſightly; they alſo ſhoot very irregular and thin, ſo that the middle of the Hedge is frequently open and wide, and only the ſides of them can be kept tolerably cloſe, and that muſt be by often clipping them. If we add to this, their being frequently laid or broken down by ſnow in the winter, it muſt be deemed an improper plant for this purpoſe.

The Ilex, or evergreen Oak, is alſo planted for Hedges, and where theſe are deſigned to grow pretty tall, it is a fit plant for the purpoſe; becauſe it is a plant of large growth, eſpecially the ſort which is moſt common in England; for there are two ſorts of them which grow in the ſouth of France and Italy, that are of much humbler growth, ſo are better adapted to this purpoſe, eſpecially where the Hedge is not intended to be high, but theſe are not at preſent common here. When theſe Hedges are planted very young, and kept cloſe trained from the beginning, they may be very cloſe from the ground to the height of twenty feet or more; but theſe muſt always be kept narrower at the top than below, that there may not too much ſnow lodge upon them in the winter, which is apt to break and diſplace the branches, whereby the Hedges will be rendered unſightly.

There are alſo ſome perſons who have planted the Pyracantha, or evergreen Thorn, Juniper, Box, Cedar of Virginia, Bay, &c. as alſo the Halimus, or Sea Purſlane, and the Furz, Roſemary, and ſeveral other plants for Hedges; but the five ſorts firſt mentioned having very pliant branches, which will require to be ſupported; and the three laſt being often deſtroyed by ſevere froſt, renders them unfit for this purpoſe; nor are there other ſorts of evergreen plants in the Engliſh gardens, which are ſo well adapted for Hedges, as thoſe before-mentioned.

The deciduous trees, which are uſually planted to form Hedges in gardens, are the following ſorts.

The Hornbeam is much eſteemed for this purpoſe, eſpecially in ſuch places where they are not required to be very high, or not wanted to grow very faſt; for this plant, while young, doth not make ſo great progreſs as many others; but as it is of ſlower growth, the Hedges may be kept neat with leſs trouble than moſt other plants will require; and the branches naturally growing very cloſe, they will make one of the cloſeſt Hedges of all the deciduous trees; but as the leaves of this tree continue upon the branches all the winter, and until the buds in the ſpring force them off, they have a bad appearance during the winter ſeaſon.

[In Weſtphalia and other parts of Germany the Hornbeam is in great repute for Hedges. The German huſbandman throws up a parapet of earth, with a ditch on each ſide, and plants his ſets, raiſed from layers, in ſuch a manner, as that every two plants interſect each other; there he ſcrapes off the bark, and binds them cloſe together with ſtraw. The plants conſolidate, and form a living paliſado, which being pruned annually with diſcretion, will in a few years make an impenetrable fence. It is not uncommon in Germany to ſee the ſides of high roads thus guarded for many miles together. The Hornbeam is not delicate in point of ſoil; will put out ſtrong lateral ſhoots within three inches of the ground; and is of quick growth *.]

The Beech is alſo a very proper tree for this purpoſe, having the ſame good qualities as the Hornbeam; but the leaves of this continue late in winter upon the branches, when they will have a bad appearance; beſides, the litter which is occaſioned by their leaves gradually falling moſt part of the winter, prevents the garden from being made clean a great while longer than if there are none of theſe trees planted.

The ſmall-leaved Engliſh Elm, is alſo a proper tree for tall Hedges; if theſe are planted young, and kept cloſely clipped from their firſt ſetting out, the Hedges may be trained up to the height of thirty or forty feet, and be very cloſe and thick the whole height. But when theſe trees are planted for this purpoſe, they ſhould not be crowded ſo cloſe together as they uſually are by moſt people; by which method, when the trees have ſtood ſome years, if they have thriven well, their ſtems will approach ſo near each other, as that few branches can be maintained below, whereby the bottom of the Hedge will be naked; therefore they ſhould not be planted cloſer together than ſeven or eight feet, or if they are ten feet it will be ſtill better. And although at this diſtance they will not form a cloſe Hedge ſo ſoon as when the trees are planted cloſer together, yet they will in a few years recompenſe for that, by their growing much cloſer and better from the ground upward.

The Dutch Elm was formerly in great eſteem for Hedges, being quick of growth, and thriving in ſuch ſoils as the Engliſh Elm would not grow; but the wretched appearance which theſe Hedges made, after they had been growing a few years, very juſtly occaſioned their being almoſt univerſally rooted out of gardens, for a more abominable plant was never introduced into gardens than this.

The Lime-tree hath alſo been recommended for Hedges, and in ſome of the old gardens there were many planted with this tree, which, for a few years after planting, made a tolerable appearance, eſpecially when they grow upon a moiſt ſoil; but after they had ſtood ſome years, they grew very thin at bottom, and by being ſheered at the top, they were rendered very ſtubby and unſightly, their leaves growing very thinly upon the branches, and theſe frequently turning of a black diſagreeable colour, and falling off very ſoon in the autumn, and ſometimes in the ſummer in dry ſeaſons, has brought theſe trees ſo much into diſrepute, as that few perſons make uſe of them at preſent for this purpoſe: nor ſhould any of the very ſtrong ſhooting trees be applied to this uſe; for the more they are cut, the ſtronger they will ſhoot, and of courſe will appear very unſightly; beſides, the often cutting of theſe Hedges occaſions great trouble and expenſe, and frequent litters in gardens.

The Alder is frequently planted for Hedges, and where the ſoil is moiſt, there is not any of the deciduous trees equal to it for this purpoſe; for the leaves are of a lively green, continuing freſh till late in the autumn; and when they decay, their litter is ſoon over, for they all drop in a ſhort time.

There are, beſides the trees before-mentioned, many of the flowering ſhrubs which have been planted to form Hedges; ſuch as Roſes, Honeyſuckles, Sweet-briar, &c. but theſe make a bad appearance, being more difficult to train; and if they are cut to keep them within compaſs, their flowers, which are their greateſt beauty, will be entirely deſtroyed. But as theſe are but of low growth, they are not proper to plant where the Hedges are to be of any height.

Although I have given theſe full directions for planting and ordering of theſe Hedges for the pleaſure-garden, yet I am far from recommending them as ornamental or uſeful. But as there are numbers of perſons who may differ from me in their opinion, and therefore might think it a deficiency in my book, had I not given theſe inſtructions; to avoid their reproach, I have inſerted as much as I think will be neceſſary for the obtaining theſe Hedges wherever they are deſired, and at a leſs expenſe than the late method of planting them hath been generally attended with; where it is not uncommon to ſee four times the number of trees planted in theſe Hedges as would have been neceſſary, or that can remain long cloſe together with any beauty. But moſt people who plant, are in too great a hurry to have their garden filled; and therefore frequently plant ſo cloſe, as that in three or four years (if their trees thrive) three-fourths of them will require to be taken away again, to make room for thoſe which are left to grow; and there are not wanting perſons, who are ready enough to encourage this practice, ſince their own intereſt is thereby promoted.

The taſte in gardening having been greatly altered of late years for the better, theſe clipped Hedges have been almoſt excluded; and it is to be hoped, that a little time will entirely baniſh them out of the Engliſh gardens, as it has already been done by the ſhorn Evergreens, which, a few years ſince, were eſteemed the greateſt beauties of gardens. The latter was introduced by the Dutch gardeners, and that of tall Hedges with treillage-work, was in imitation of the French gardens, in ſome of which, the expenſe of the iron treillage, to ſupport the trees which compoſe their cabinets, pavillions, bowers, porticoes, and other pieces of rural architecture, amounted to a very great ſum. I have been informed this work, in one garden, has coſt above twenty thouſand crowns; and this only to train up trees in the diſtorted ſhape of pilaſters, niches, cornices, pediments, &c. when at the

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* Hunter's Evelyn.

ſame time, theſe can no longer retain the forms intended, than they are kept cloſely ſhorn into them; for no ſooner do the trees begin to make freſh ſhoots, but the whole frame is altered; and inſtead of carrying the fine finiſhed appearance of a regular piece of architecture, it is grown into a rude unpoliſhed form. This expenſive ſort of work never has made much progreſs in England, but that part of the French taſte, in ſurrounding all the ſeveral diviſions of gardens with tall clipped Hedges, making great alleys, forming the walks into ſtars, and the like ſtiff performances, once too much obtained in England: and the taller theſe clipped Hedges were, the more they were admired; though many times they ſhut out from the view the ſight of ſome of the nobleſt Oaks, and other timber trees, growing in the quarters, which are infinitely more pleaſing to a perſon of true taſte, than all the ridiculous forms it is poſſible for trees to be framed in by art. Beſides, when the expenſe of keeping theſe Hedges, together with the great litter they occaſion when clipped, is conſidered, theſe, added to many other reaſons which might be given, are ſufficient to exclude them out of gardens; where they can never be eſteemed neceſſary, but to ſhut out from the view the ſight of worſe objects.

[HEDWIGIA. (*So named from Joh. Hedwig, M. D. the famous author of* Hiſtoria Naturalis Muſcorum Frondoſorum, 1782 qu. and 1787 fol.)

Lin. gen. Schreb. n. 1747. *p.* 800. *Swartz prodr.* 62.

Claſſ. 8. 1. Octandria Monogynia.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, cup-ſhaped, four-toothed: *teeth* minute, ovate, ſharp, upright.

Cor. monopetalous, tubulous: *tube* the length of the calyx, narrower at top: *border* quadrifid; the clefts ovate, ſharp, upright, converging.

Stam. *Filaments* eight, broad, inſerted into the baſe of the corolla, incumbent on the germ. *Anthers* minute, oblong, ſharp, converging above the ſtigma.

Pist. *Germ* conical, eight-ſtreaked, ſuperior. *Style* none. *Stigma* blunt.

Per. *Capſule* tricoccous (compoſed as it were of three ovate acuminate capſules) large, three-celled.

Seeds. *Nuts* ſolitary, ovate, acuminate, one ſide convex and very ſmooth, the other wrinkled and unequal. *Kernels* the ſhape of the nuts.

ESSENTIAL CHARACTER.

Cal. four-toothed. *Cor.* four-cleft. *Style* none. *Capſ.* tricoccous. *Seed* a nut.

SPECIES.

1. Hedwigia balſamifera.

Swartz prodr. 62.

Bois Cochon. *Nichols. hiſt. Doming.* 169.

DESCRIPTION, *&c.*

This is a lofty tree, growing to the height of more than ſixty feet, with a trunk four or five feet in circumference: outer bark gray and even; inner red, thick and gummy: wood ſolid, and reddiſh. Leaves oval, ending in a lengthened point at top, without any indentations, thin, ſhining, waved, yellowiſh green, five or ſix inches long, and three inches wide, ranged in pairs along a midrib, terminated by an odd one. The flowers grow in a raceme at the extremities of the branchlets, and are white. The fruit is the ſize of a ſmall nut, divided into two or three parts, covered with a green coriaceous rind, and containing a white, fleſhy, ſweet pulp, having an aromatic ſmell: each diviſion has in it a flatted woody ſhell, incloſing a bitter oily kernel.—Native of St. Domingo.

The wood is uſed as timber for various purpoſes. An aromatic oil is drawn from the kernels, which is much eſteemed in diſorders of the breaſt. The red gum that iſſues from the bark has a ſtrong aromatic ſmell, and is much uſed in the cure of wounds. It is a notion that the wild ſwine firſt diſcovered this uſe of it, and hence it has the name of Bois Cochon[a].

HEDYCARY̆A. (*From* ηδυς *ſweet, and* καρυα *a nut.*)

Lin. gen. Schreb. n. 1547. *ſuppl.* 67. *Forſt. gen.* 64. *Juſſ.* 401.

Claſſ. 22. 11. Dioecia Icoſandria.

Nat. order of *Scabridæ.—Urticæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, flat-wheel-ſhaped, eight or ten-cleft: *clefts* lanceolate, nearly equal. In the female permanent.

Cor. none.

Male.

Stam. *Filaments* none. *Anthers* very many (fifty) oblong, four-furrowed, bearded at the tip, diſtributed along the whole bottom of the calyx.

Female.

Pist. *Germs* numerous, flatted-globular, placed each on a cylindric pedicel in the middle of the calyx. *Styles* none. *Stigmas*, papillæ ſcattered over the germs.

Per. none.

Seeds. *Nuts* ſix or ten, pedicelled, globular, ſomewhat bony. *Kernels* ſolitary, globular.

Rec. in the middle of the calyx, woolly.

ESSENTIAL CHARACTER.

Cal. eight or ten-cleft. *Cor.* none.

Male. *Filam.* none. *Anthers* in the bottom of the calyx, four-furrowed, bearded at the tip.

Fem. *Germs* pedicelled. *Nuts* pedicelled, one-ſeeded.

SPECIES.

1. Hedycarya dentata.

Lin. ſyſt. 894. *ſuppl.* 431. *Forſt. gen. n.* 64. *fl. auſtral. n.* 379.

DESCRIPTION, *&c.*

A ſmooth ſhrub. Leaves alternate, oblong, ſerrate, on ſhort petioles, very ſmooth, veined; the veins almoſt tranſverſe. Racemes axillary. Calyxes hirſute. Nuts very ſweet[b].

Native of New Zealand[c].

HEDYCRĔA. (*From* ηδυς *ſweet, and* κρεας, *fleſh; the pulp of the fruit being ſweet.*)

Lin. gen. Schreb. n. 409. Licania. *Aublet.* 45.

Claſſ. 5. 1. Pentandria Monogynia.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, hemiſpherical, five-toothed: *teeth* ſharp, patulous.

Cor. none.

Stam. *Filaments* five, inſerted into a ring, ſurrounding the calyx within, below the teeth, oppoſite to and ſhorter than they. *Anthers* roundiſh.

Pist. *Germ* roundiſh, villoſe, ſuperior. *Style* longer than the calyx, briſtle-ſhaped, villoſe. *Stigma* blunt.

Per. *Drupe* oval, ſoft, fibrous within, one-celled.

Seed. *Nut* ovate, covered with fibres, one-celled: the ſhell hard.

ESSENTIAL CHARACTER.

Cal. one-leafed, hemiſpherical, five-toothed. *Cor.* none. *Drupe* oval, one-celled. *Nut* ovate, covered with fibres, one-celled; the ſhell hard.

SPECIES.

1. Hedycrea incana.

Gmel. ſyſt. 428.

Licania incana. *Aubl. guian.* 119. *t.* 45.

DESCRIPTION, *&c.*

This tree grows only to the height of three or four feet, with a trunk five or ſix inches in diameter. The bark is aſh-coloured, very thin, falling in large pieces, and renewing itſelf every year. The wood is hard, whitiſh, and when ſawed has the ſmell of rancid oil. The extremities of the branches and twigs have oval leaves, ending in a point, ſmooth and green on the upper ſurface, covered with a very white down underneath, and placed alternately; their petiole is ſhort, accompanied at the baſe by two oppoſite ſtipules. The flowers grow in a ſpike at the ends of the branches and twigs: they are white, cloſe and ſeſſile. The fruit is the ſize of a large olive, white dotted on the outſide with red; the pulp is white, melting, and of a ſweetiſh taſte; the ſhell or nut is bony, and ſeparates with difficulty from the fibres in the pulp: the kernel is two-lobed.

Native of Guiana, where it is called *Caligni* by the natives, who are very fond of the fruit, which is ripe in october and november[d].

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[a] Nicholſon.

[b] Linn. ſuppl.

[c] Forſter.

[d] Aublet.

HEDYOSMUM. (*Ηδυοσμος of Dioſcorides. From* ηδυς, *and* οσμη *ſmell.*)
Lin. gen. Schreb. n. 1453. *Swartz prodr.* 84.
Claſſ. 21. 7. Monoecia Polyandria.

GENERIC CHARACTER.

Male flowers.

Cal. *Ament* without ſcales, covered on every ſide with ſtamens. *Perianth* none.

Cor. none.

Stam. *Filaments* none. *Anthers* very many, imbricately heaped together, upright, oblong, acuminate at the tip, converging at the baſe into an oblong ament, and placed on a linear receptacle.

Females ſolitary on the ſame tree.

Cal. *Perianth* one-leafed, covering the germ, three-toothed at the tip: *teeth* minute, upright.

Cor. none.

Pist. *Germ* oblong, three-cornered. *Style* very ſhort, three-cornered. *Stigma* ſimple, obtuſe.

Per. *Berry* roundiſh, three-cornered, ſmall, ſuperior.

Seed ſingle, hard, three-ſided, ſhining.

ESSENTIAL CHARACTER.

Male. *Ament* covered with anthers—No perianth, corolla, or filaments.

Fem. *Cal.* three-toothed. *Cor.* none. *Style* one, three-cornered. *Berry* three-cornered, one-ſeeded.

SPECIES.

1. Hedyoſmum nutans.
Swartz prodr. 84.
Stem ſhrubby, branches looſe, leaves lanceolate acuminate.

2. Hedyoſmum arboreſcens.
Swartz prodr. 84.
Stem arboreſcent, branches ſtiff, upright, leaves ovate-lanceolate.
Natives of Jamaica.]

Hedyosmus. See *Cunila.*

HEDYOTIS. (*From* ηδυς *ſweet, and* ους, ωτος *an ear. Suppoſed to be a ſpecific in deafneſs.*)
Lin. gen. n. 118. *Reich.* 124. *Schreb.* 153. *Gærtn. t.* 30. *Juſſ.* 198.
Claſſ. 4. 1. Tetrandria Monogynia.
Nat. order of *Stellatæ.—Rubiaceæ,* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, four-parted, ſuperior, permanent: *parts* linear, ſharp.

Cor. monopetalous, funnel-ſhaped, a little longer than the calyx, half-four-cleft: *clefts* patulous, nearly equal.

Stam. *Filaments* four, ſubulate, inſerted at the ſinuſes of the corolla. *Anthers* roundiſh.

Pist. *Germ* roundiſh, inferior. *Style* filiform, the length of the ſtamens. *Stigmas* two, thickiſh.

Per. *Capſule* twin-globular, two-celled, gaping next the coronal calyx with a tranſverſe cleft.

Seeds few, angular (very numerous in H. herbacea, *G.*)

ESSENTIAL CHARACTER.

Cor. monopetalous, funnel-ſhaped. *Capſ.* two-celled, many-ſeeded, inferior.

SPECIES.

1. Hedyotis maritima.
Lin. ſyſt. 147. *ſuppl.* 119.
Leaves oval blunt, flowers oppoſite ſeſſile.

2. Hedyotis pumila.
Lin. ſyſt. 147. *ſuppl.* 119.
Leaves ovate ſharp, flowers alternate peduncled.

3. Hedyotis fruticoſa.
Lin. ſpec. 147. *Reich.* 1. 289. *fl. zeyl. n.* 63. *amæn.* 1. 392. *Retz. obſ.* 2. *n.* 5? *Burm. zeyl.* 227. *t.* 107. (Valerianella).
Leaves lanceolate petioled, corymbs terminating involucred.

4. Hedyotis Auricularia. *Earwort.*
Lin. ſpec. 147. *Reich.* 1. 289. *fl. zeyl. n.* 64. *mat. med.* 49. *amæn.* 1. 391. *Burm. zeyl.* 227. *t.* 108. *f.* 1. (Valerianella). *Rheed. mal.* 10. 63. *t.* 32. *Raii dendr.* 134. *Dale pharmac.* 160. (Auricularia).
Leaves lanceolate-ovate, flowers in whorls.

5. Hedyotis herbacea.
Lin. ſpec. 147. *Reich.* 1. 290. *fl. zeyl. n.* 65. *Gærtn. fruct.* 1. 148. *Loureiro fl. Cochinchin.* 1. 77. Oldenlandia tenuifolia. *Gmel. ſyſt.* 263.
Leaves linear-lanceolate, ſtem herbaceous dichotomous, peduncles in pairs.

6. Hedyotis graminifolia.
Lin. ſyſt. 147. *ſuppl.* 119. *Vahl ſymb.* 2. 27.
Oldenlandia ſtricta. *Lin. ſyſt.* 162.
Leaves linear, ſtem decumbent, panicle racemed with the flowers directed one way, peduncles following the ſun.

7. Hedyotis hiſpida.
Retz. obſ. 4. *n.* 67.
Leaves linear-lanceolate, flowers in whorls.

8. Hedyotis rupeſtris.
Swartz prodr. 29.
H. americana. *Jacqu. amer.* 20.
Thymelæa, &c. *Sloan. jam.* 2. 94. *t.* 202. *f.* 1.
Leaves four-faced awl-ſhaped channelled, flowers ſeſſile axillary, corollas villoſe with a crooked tube.

DESCRIPTIONS, *&c.*

1. Stems herbaceous, proſtrate, a hand in length, ſmooth and even. Leaves oppoſite, on ſhort petioles, ſpreading, ſomewhat fleſhy. Flowers lateral. Fruit the ſize of Coriander.—Native of the Eaſt Indies. Koenig.

2. This has the appearance of Anagallis arvenſis. Root annual. Stems little branched, a hand in length, ſmooth and even. Leaves like thoſe of Anagallis, ſharp at both ends, ſcarcely petioled, ſmooth and even. Peduncles lateral, ſolitary, capillary, upright, the length of the leaves. Capſule roundiſh, with a groove on each ſide, crowned with the four teeth of the calyx.—Native of Tranquebar. *Koenig*[a].

3. This has the appearance of Phyllitis. Stem four-cornered. Leaves oppoſite, ſmooth, nerved, quite entire. Stipules ovate-rhombed, broad, ſhort. Corymbs brachiate, or trifid. Calyx four-cleft. Filaments a little longer than the corolla: anthers oblong. Style bifid, blunt.—Native of Ceylon[b].

Retzius deſcribes a ſpecies which he received from China, under this name of *H. fruticoſa,* but as it differs in ſeveral reſpects from that which Linneus deſcribes as above in the Flora zeylanica, we cannot determine whether it be the ſame or not. His deſcription runs thus—

Branches four-cornered, ſmooth, cloathed with rhomb-ſhaped ſtipules embracing the ſtalk, from the ſinuſes of which proceed leaves in pairs, lanceolate, quite entire, ſcarcely petioled. Flowers in a brachiate thyrſe or panicle divided in the ſame manner as in the Galiums. Involucres none, but two ſubulate leaflets at the ramifications. Corolla tomentoſe within. Stamens in the middle of the tube; filaments very ſhort; anthers linear. Style longer than the corolla: ſtigma capitate. Capſule ovate, four-toothed with the calyx. Seeds ſolitary, oblong.

4. Stems ſmooth, long. Branches long, jointed, alternate. Leaves ſubſeſſile, ſmooth, nerved, quite entire, oppoſite, pendulous. Stipules toothed, joining the peduncles. Flowers many, in whorls, on very ſhort pedicels from each axil. It is accounted a ſpecific in deafneſs.—Native of Ceylon[c].

5. Stem eight inches high, ſlender, procumbent. Leaves ſeſſile, ſmooth, quite entire, oppoſite. Flowers axillary, in pairs, but often ſolitary: corolla white, ſubcampanulate. Stamens ſhort. Stigma oblong, bifid. Capſule twin, crowned with the four tips of the calyx[d]; ſmall, marked with two grooves, compreſſed at the tip; partition contrary to the cleft. Receptacle roundiſh, convex, excavated, the whole faſtened to the middle of the partition on both ſides. Seeds very numerous, ſmall, ſmooth, brown[e].—Native of Ceylon and Cochinchina.

6. Perennial. Stems filiform, weak as in Stellaria graminea, a foot long. Leaves remotely oppoſite. Corolla blue; the ſegments before noon expanding very wide, in the evening two upright, and two bent back. Anthers upright, nearly equal, blue. Germ retuſe: ſtyle the length of the corolla: ſtigma bifid, rolled back, villoſe. Capſule compreſſed, two-furrowed, two-valved, retuſe; partition contrary; gaping

[a] Linn. ſuppl. [b] Linn. zeyl. [c] Ibid. [d] Loureiro.
[e] Gærtner.

at the tip. Seeds very minute, numerous.—Native of the Eaſt Indies. *Koenig*[f]. It is repeated under the name of Oldenlandia ſtricta in ſyſt. veg. 162. 10. but it belongs rather to this genus[g].

7. Stems half a foot in length, decumbent, quadrangular, hiſpid, with a branch or two. Leaves petioled, acuminate, entire, hiſpid on both ſides. Petioles extremely hiſpid, united with the filiform-torn ſtipules ſo as to form a ſhort ſheath. Pedicels ſcarcely obſervable. Calyx hiſpid. Segments both of that and the corolla ſharp. Stamens the length of the corolla. Style longer, club-ſhaped. Capſule half-two-celled, the partition diſappearing in the middle, and not reaching to the tip. Seeds many.—Brought from Canton by Wennerberg[h].

8. This is a ſhrub, ſeldom exceeding three feet in height. Branches diffuſed, often procumbent at the baſe, otherwiſe erect. Leaves linear, acuminate, quite entire, fleſhy, thick, ſhining, grooved at the back, convex on the ſides, oppoſite, numerous. The petioles are united on each ſide by a membrane embracing the branch, and blunt with a point. Flowers yellow, without ſcent, ſeſſile, axillary, ſolitary; the germ and part of the corolla is concealed within the ſinus of the leaf. There is a ſingle ſtipule on each ſide of the germ, of the ſame length and form with a calycine leaflet.—Native of Havana, on rocks by the ſea coaſt[i]: alſo of Jamaica[k].

HEDYPNOIS. (Ἡδύπνοος, *breathing a pleaſant odour.*)
Lin. gen. Schreb. n. 1243. *Tournef. t.* 271. *Juſſ.* 169. *Gærtn. t.* 160. *Hudſ. angl.* 340.—Rhagadioloides. *Vaill. mem. acad.* 1721. 29, 30.
Claſſ. 19. 1. Syngeneſia Polygamia Æqualis.
Nat. order of *Compoſitæ Semifloſculoſæ.*—*Cichoraceæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Common* calycled, cylindrical, ten-leaved or thereabouts, permanent: *ſcales* linear, erect, acute, equal; calycled at the baſe with fewer, narrower ſcales, which are ſhort and cloſe.

Cor. *Compound* ſubimbricate, uniform: *corollules* hermaphrodite, many.—*Proper* monopetalous, ligulate, linear, truncate, five-toothed.

Stam. *Filaments* five, capillary, very ſhort. *Anther* cylindrical, tubulous.

Pist. *Germ* oblong. *Style* filiform, length of the ſtamens. *Stigmas* two, reflex.

Per. none. *Common calyx* hardened, converging, almoſt globular, covering the marginal ſeeds with its ſcales.

Seeds ſolitary, ſomewhat oblong, bowed in a little, ſtreaked, roughiſh, the length of the calyx.

The outer crowned with the *calycle* membranaceous, erectiſh, obſcurely five-cornered, toothletted. *Pappus* none.

The inner crowned with the *calycle* obſcure, many-briſtled, very ſhort, within which is a *pappus* of five erectiſh, awned *chaffs*.

Rec. naked.

ESSENTIAL CHARACTER.

Cal. calycled, with ſhort ſcales. *Seeds* crowned with the calycle: outer without down, covered up in the ſcales of the calyx; inner having a down of five erectiſh awned chaffs. *Recept.* naked, hollow-dotted. This genus embraces ſome ſpecies of Hyoſeris and of Crepis; and, according to Juſſieu, Lapſana Zacintha, *Linn.*—For Hudſon's ſpecies of Hedypnois ſee *Apargia.* See alſo *Leontodon* and *Tragopogon.*]

HEDYSĂRUM. (Ἡδύσαρον *of Theophraſtus and Dioſcorides. From* Ἡδύσμα, *ſweetneſs, and* ἄρὸν, *ointment.*)
Lin. gen. n. 887. *Reich.* 961. *Schreb.* 1204. *Tournef. t.* 225. *Juſſ.* 362. *Gærtn. t.* 155. Onobrychis. *Tourn.* 211. Alhagi. *Tourn.* 489.
Claſſ. 17. 4. Diadelphia Decandria.
Nat. order of *Papilionaceæ* or *Leguminoſæ.*

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, half-five-cleft: *clefts* ſubulate, upright, permanent.

Cor. Papilionaceous, ſtreaked.—*Banner* reflex-compreſſed, ovate-oblong, emarginate, long. *Wings* oblong, narrower than the other petals, ſtraight. *Keel* ſtraight, compreſſed, broader outwardly, tranſverſely blunt, from the baſe to the ſwelling part bifid.

Stam. *Filaments* diadelphous (ſimple and nine-cleft,) bent in at a right angle. *Anthers* roundiſh, compreſſed.

Pist. *Germ* ſlender, compreſſed, linear. *Style* ſubulate, bent in with the ſtamens. *Stigma* very ſimple.

Per. *Legume* with roundiſh, compreſſed joints, two-valved and containing one ſeed.

Seed kidney-ſhaped, ſolitary.

Obs. *The pericarp differing in this genus, has occaſioned its being unnaturally ſeparated into ſeveral genera.*
Onobrychis Tourn. *has a legume of one joint.*
Hedyſarum T. *has a legume of ſeveral joints united like the links of a chain.*
Alhagi T. *is diſtinguiſhed from* Hedyſarum T. *by alternate leaves.*

ESSENTIAL CHARACTER.

Cor. keel tranſverſely obtuſe. *Legume* jointed, with one ſeed in each joint.

SPECIES.

* *With ſimple leaves.*

1. Hedyſarum Alhagi. *Prickly Hedyſarum.*
Lin. ſpec. 1051. *Reich.* 3. 500. *Gron. orient.* 228. *Gmel. itin.* 2. *t.* 29. *Lerche nov. act. nat. cur.* 5. *app.* 167.
Geniſta-ſpartium ſpinoſum, fol. polygoni. *Bauh. pin.* 394.
G. ſpinoſa fl. rubro. *Wheeler's travels.*
Agul. *Rauw. itin. t.* 14.
Leaves lanceolate obtuſe, ſtem ſhrubby thorny.

[2. Hedyſarum bupleurifolium. *Hare's-ear-leaved Hedyſ.*
Lin. ſpec. 1051. *ſyſt.* 672. *Reich.* 3. 500. *Pet. gaz. t.* 11. *f.* 12. (Ornithopodium).
Leaves lanceolate acute, ſtem unarmed, ſtipules ſcarioſe.

3. Hedyſarum linifolium. *Flax-leaved Hedyſarum.*
Lin. ſyſt. 672. *ſuppl.* 331.
Indigofera linifolia. *Vahl ſymb.* 1. 55.
Leaves linear hoary, ſtem proſtrate, legumes globular.

4. Hedyſarum nummularifolium. *Money-wort-leaved H.*
Lin. ſpec. 1051. *Reich.* 3. 501. *fl. zeyl. n.* 288. *Burm. ind.* 64.
H. rotundifolium. *Vahl ſymb.* 2. 81. & 3. 89.
Leaves wedge-ſhaped.

5. Hedyſarum moniliferum. *Necklace Hedyſarum.*
Lin. ſyſt. 672. *Reich.* 3. 501. *mant.* 102. *Burm. ind. t.* 52. *f.* 3. *Petiv. gaz. t.* 26. *f.* 4. (Onobrychis).
Leaves orbiculate, legumes necklace-ſhaped globular-jointed.

6. Hedyſarum ſtyracifolium. *Storax-leaved Hedyſarum.*
Lin. ſpec. 1052. *Reich.* 3. 501.
Leaves cordate-orbiculate retuſe ſmooth on the upper ſurface, tomentoſe underneath.

7. Hedyſarum reniforme. *Kidney-leaved Hedyſarum.*
Lin. ſpec. 1051. *ſyſt.* 672. *Reich.* 3. 501. *Burm. ind. t.* 52. *f.* 1. *Loureiro fl. cochinch.* 447.
Leaves kidney-ſhaped, ſtem columnar.

8. Hedyſarum ſororium.
Lin. ſyſt. 672. *Reich.* 3. 501. *mant.* 270. *Pet. gaz. t.* 33. *f.* 1. (Lens).
Glycine monophyllos. *Burm. ind.* 161. *t.* 50. *f.* 2.
Leaves kidney-ſhaped emarginate, ſtem three-ſided.

9. Hedyſarum veſpertilionis. *Bat-winged Hedyſarum.*
Lin. ſyſt. 672. *ſuppl.* 331. *Loureiro fl. Cochinch.* 447. *Jacqu. ic. vol.* 2. *collect.* 2. 329.
Leaves ſimple and ternate, middle leaflets two-lobed, lobes lanceolate divaricate, legumes plaited.]

10. Hedyſarum gangeticum. *Oval-leaved Hedyſarum.*
Lin. ſpec. 1052. *ſyſt.* 672. *Reich.* 3. 502. *Burm. zeyl.* 113. *t.* 49. *f.* 2. *Pluk. alm. t.* 50. *f.* 3. (Onobrychis). *Loureiro fl. cochinch.* 448.
Phaſeolus montanus. *Rumph. amb.* 6. 146. *t.* 66. *Burm. ind.* 164.
Leaves ovate acute ſtipuled.

11. Hedyſarum maculatum. *Spotted Hedyſarum.*
Lin. ſpec. 1051. *Reich.* 3. 502. *hort. cliff.* 449. *upſ.* 233. *fl. zeyl. n.* 290. *Dill. elth.* 170. *t.* 141. *f.* 168.
Leaves ovate obtuſe.

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[f] Linn. ſuppl. [g] Swartz obſ. [h] Retzius. [i] Jacquin. [k] Sloane.

[12. Hedyſarum latebroſum.
Lin. ſyſt. 672. *Reich.* 3. 502. *mant.* 270. *Pet. gaz. t.* 30. *f.* 11.
Leaves ovate ſerrulate, legumes hid by a vaulted ſupine ſcarioſe bracte.

13. Hedyſarum vaginale. *Sheathed Hedyſarum.*
Lin ſpec. 1052. *ſyſt.* 673. *Reich.* 3. 503. *fl. zeyl. n.* 287. *Burm. zeyl.* 104. *t.* 49. *f.* 1. (Geniſta).
Leaves cordate-lanceolate, petioles ſimple, ſtipules ſheathing.

14. Hedyſarum glumaceum.
Gmel. ſyſt. 1121.
Hedyſarum violaceum.
Vahl ſymb. 1. 54. *Forſk. deſcr.* 136.
Leaves ſimple lanceolate, ſtipules and calyxes ſcarioſe, legumes wrinkled.

15. Hedyſarum imbricatum. *Imbricate-leaved Hedyſarum.*
Lin. ſyſt. 673. *ſuppl.* 330.
Leaves cordate ſeſſile ſtipuled, the upper ones imbricate flower-bearing.]

16. Hedyſarum triquetrum. *Triangular-branched Hedyſ.*
Lin. ſpec. 1052. *ſyſt.* 673. *Reich.* 3. 503. *fl. zeyl. n.* 286. *Loureiro fl. cochinch.* 448. *Burm. ind. t.* 52. *f.* 2. *Burm. zeyl.* 176. *t.* 81. (Onobrychis).
Phaſeolatus montanus 7. *Rumph. amb.* 6. 146.
Leaves oblong, petioles winged, branches three-ſided.

[17. Hedyſarum ſtrobiliferum. *Strobile bearing Hedyſ.*
Lin. ſpec. 1053. *Reich.* 3. 503. *fl. zeyl. n.* 289. *Burm. ind.* 165. (Onobrychis).
Bractes of the ſtrobiles inflated cordate obtuſe.

18. Hedyſarum gramineum. *Graſs-leaved Hedyſarum.*
Retz. obſ. 5. *n.* 70.
Leaves linear-lanceolate, ſtipules ſcarioſe, racemes naked, pedicels two-flowered, teeth of the calyx bearded.]

** *With conjugate leaves.*

19. Hedyſarum diphyllum. *Two-leaved Hedyſarum.*
Lin. ſpec. 1053. *ſyſt.* 673. *Reich.* 3. 504. *fl. zeyl. n.* 291. *Swartz obſ.* 285. *Brown. jam.* 301. 10. *Sloan. jam.* 1. 185. *Raii ſuppl.* 458. *Pluk. alm. t.* 246. *f.* 6. & *t.* 102. *f.* 1. (Onobrychis). *Rheed. mal.* 9. 161. *t.* 82. (Nelam-mari). *Raii ſuppl.* 404.
β. H. bifolium, &c. *Burm. zeyl.* 114. *t.* 50. *f.* 1. *Loureiro fl. cochinch.* 449.
Leaves binate petioled, bractes in pairs ovate acute ſeſſile.

*** *With ternate leaves.*

[20. Hedyſarum adſcendens.
Swartz prodr. 106.
Leaves roundiſh pubeſcent underneath, ſtem columnar, branches declined aſcending hairy, racemes ſimple erect axillary.

21. Hedyſarum pulchellum.
Lin. ſpec. 1053. *ſyſt.* 673. *Reich.* 3. 504. *fl. zeyl. n.* 292. *Loureiro fl. cochinch.* 449. *Burm. ind.* 165. *Burm. zeyl.* 116. *t.* 52. *Pluk. amalth. t.* 433. *f.* 7. (Onobrychis).
Bractes in pairs conjugate orbiculate marked with lines.

22. Hedyſarum elegans.
Loureiro fl. cochinch. 450.
Leaves obtuſe tomentoſe on both ſides, bractes conjugate ovate, legumes bowed.

23. Hedyſarum ſpartium.
Lin. ſyſt. 673. *Reich.* 3. 504. *mant.* 271. *Burm. ind.* 166. *t.* 51. *f.* 2.
Leaves ternate and ſimple ſomewhat tomentoſe, ſtem dichotomous, flowers in pairs, legumes jointed hiſpid.

24. Hedyſarum lineatum.
Lin. ſpec. 1054. *ſyſt.* 673. *Reich.* 3. 505. *Burm. ind. t.* 53. *f.* 1.
Leaves oblong marked with lines, racemes axillary pendulous.

25. Hedyſarum ſupinum.
Swartz prodr. 106. *Sloan. jam.* 2. 185. *t.* 118. *f.* 2.
Leaves ovate bluntiſh hoary-villoſe underneath, ſtem branched procumbent, racemes ſimple erect terminating.]

26. Hedyſarum canum.
Gmel. ſyſt. 1124.
H. incanum. *Swartz prodr.* 107. *Plum. ic. t.* 149. *f.* 1.
H. caneſcens. *Mill. dict.*
Leaves ovate acuminate hoary underneath, ſtem columnar branched erect, racemes terminating erect, legumes declined rough with hairs.

[27. Hedyſarum retroflexum.
Lin. ſyſt. 673. *Reich.* 3. 505. *mant.* 103.
Racemes erect, legumes pendulous many-jointed.]

28. Hedyſarum trigonum.
Swartz prodr. 107. *Brown. jam.* 301. 7.
H. intortum. *Mill. dict.*
Leaves ovate acute rough with hairs, ſtem climbing three-ſided, racemes very long axillary, legumes writhed bent in.

[29. Hedyſarum umbellatum.
Lin. ſpec. 1053. *ſyſt.* 673. *Reich.* 3. 505. *fl. zeyl. n.* 293. *Burm. zeyl.* 115. *t.* 51.
Folium crocodili. *Rumph. amb.* 4. 112. *t.* 52.
Peduncles umbelliferous, ſtem ſhrubby.

30. Hedyſarum biarticulatum.
Lin. ſpec. 1054. *Reich.* 3. 505. *fl. zeyl. n.* 296. *Burm. zeyl.* 114. *t.* 50. *f.* 2. *Raii ſuppl.* 457. 30. (Onobrychis).
Stem underſhrubby, legumes two-jointed.

31. Hedyſarum lappaceum.
Vahl ſymb. 1. 54. *Forſk. deſcr.* 136.
Leaves ternate obcordate, flowers axillary ſubſolitary, legumes two-jointed with hooked briſtles.

32. Hedyſarum heterocarpon.
Lin. ſpec. 1054. *Reich.* 3. 506. *fl. zeyl. n.* 294. *Burm. zeyl.* 117. *t.* 53. *f.* 1. *Thunb. jap.* 287.
Flowers panicle-ſpiked, legumes jointed, the loweſt one-ſeeded, ſtipules briſtle-ſhaped.

33. Hedyſarum viſcidum.
Lin. ſpec. 1054. *Reich.* 3. 506. *fl. zeyl. n.* 295. *Burm. ind.* 167. *Burm. zeyl.* 187. *t.* 84. *f.* 1. (Phaſeolus).
Legumes membranaceous even entire, ſtem and branches hiſpid.

34. Hedyſarum ſcorpiurus.
Swartz prodr. 107. *Brown. jam.* 301. 9.
Leaves oblong hirſute underneath, ſtems procumbent three-cornered, racemes axillary, legumes roundiſh, upright.]

35. Hedyſarum canadenſe. *Canadian Hedyſarum.*
Lin. ſpec. 1054. *ſyſt.* 673. *Reich.* 3. 506. *hort. upſ.* 232. *cliff.* 365. *Corn. canad.* 44. *t.* 45. *Mor. hiſt.* 2. 130. *ſ.* 2. *t.* 11. *f.* 9. (Onobrychis). *Park. theat.* 1090. *f.* 10.
Leaves ſimple and ternate, ſtem even, flowers racemed.

[36. Hedyſarum gyrans. *Senſitive Hedyſarum.*
Lin. ſyſt. 675. *ſuppl.* 332. *Ait. hort. kew.* 3. 64. *Shaw. nat. miſc. t.* 70. *Swartz obſ.* 289. *Jacqu. ic. vol.* 2. *collect.* 3. 181.
Leaves oval-lanceolate obtuſe, the lateral ones minute.

37. Hedyſarum caneſcens. *Rough-leaved Hedyſarm.*
Lin. ſpec. 1054. *ſyſt.* 674. *Reich.* 3. 506. *mant.* 447. *hort. upſ.* 232. *cliff.* 365. *Gron. virg.* 108. *Pluk. alm. t.* 308. *f.* 5.
Leaves ſcabrous underneath, ſtem hiſpid, flowers racemed conjugate.

38. Hedyſarum repandum.
Vahl ſymb. 2. 82.
Leaves ternate repand-crenate, racemes terminating elongated.

39. Hedyſarum adhærens.
Vahl ſymb. 2. 82.
Leaves ternate oblong, racemes axillary, legumes cylindric jointed villoſe.

40. Hedyſarum marilandicum. *Maryland Hedyſarum.*
Lin. ſpec. 1055. *Reich.* 3. 507. *Gron. virg.* 109. *Dill. elth.* 174. *t.* 144. *f.* 171. *Raii ſuppl.* 455. 3.
Leaves roundiſh, ſtem frutescent branched very much, legumes jointed even.]

41. Hedyſarum tortuoſum. *Twiſted-podded Hedyſarum.*
Swartz prodr. 107. *Ait. hort. kew.* 3. 64. *Sloan. jam.* 1. 184. *t.* 116. *f.* 2. *Brown. jam.* 301. 8. *Vahl ſymb.* 2. 82.
H. purpureum. *Mill. dict. n.* 6.
Leaves oval-oblong obtuſe ſmoothiſh, racemes erect axillary, legumes twiſted compreſſed pubeſcent.

42. Hedyſarum ſpirale. *Spiral-podded Hedyſarum.*
Swartz prodr. 107.
H. procumbens. *Mill. dict. n.* 10.
Leaves ovate obtuſe ſmooth, ſtem very much branched, with diffuſed branches, racemes looſe divaricate, legumes ſpirally twiſted.

43. Hedyſarum fruteſcens.

Lin. ſpec. 1055. *Reich.* 3. 507. *Jacqu. hort.* 3. *t.* 89. *Gron. virg.* 109.

Leaves ſubovate villoſe underneath, ſtem fruteſcent.

[44. Hedyſarum axillare.

Swartz prodr. 107. *Brown. jam.* 301. 6.

Leaves rhombed-roundiſh, ſtem creeping rooting, petioles upright, ſcapes axillary longer than the leaves.

45. Hedyſarum viridiflorum. *Green-flowered Hedyſarum.*

Lin. ſpec. 1055. *Reich.* 3. 507. *Gron. virg.* 109. *Pluk. alm. t.* 308. *f.* 5. (Onobrychis).

Leaves ſharpiſh, ſtem upright; racemes very long upright.

46. Hedyſarum hirtum.

Lin. ſpec. 1055. *ſyſt.* 674. *Reich.* 3. 508. *Gron. virg.* 2. 108. & edit. 173. (Trifolium).

Leaves oval, ſtem ſhrubby, ſpikes oblong, calyxes and fruits hirſute one-ſeeded.

47. Hedyſarum junceum. *Slender-branched Hedyſarum.*

Lin. ſyſt. 674. *Reich.* 3. 508. *dec.* 1. *t.* 4. *Amm. ruth.* 154. & 281. (Cytiſus).

Leaves lanceolate, legumes one-jointed rhomb-ſhaped, peduncles ſubumbelled lateral.

48. Hedyſarum violaceum. *Violet-flowered Hedyſarum.*

Lin. ſpec. 1055. *Reich.* 3. 508. *Gron. virg.* 2. 108. & 1. 87.

Leaves ovate, flowers in pairs, legumes naked veined jointed rhomb-ſhaped.

49. Hedyſarum paniculatum. *Panicled Hedyſarum.*

Lin. ſpec. 1056. *ſyſt.* 674. *Reich.* 3. 508. *Gron. virg.* 2. 108. *Pluk. mant. t.* 432. *f.* 6.

Leaves linear-lanceolate, flowers panicled, legumes rhomb-ſhaped.

50. Hedyſarum nudiflorum. *Naked-flowered Hedyſarum.*

Lin. ſpec. 1056. *ſyſt.* 674. *Reich.* 3. 509. *Gron. virg.* 2. 107. & *edit.* 1. 86.

Flowering ſtem naked, leafy ſtem angular.]

51. Hedyſarum repens. *Creeping Hedyſarum.*

Lin. ſpec. 1056. *ſyſt.* 674. *Reich.* 3. 509. *Gron. virg. ed.* 1. 86. & 2. 108.

Leaves obcordate, ſtems procumbent, racemes lateral.

[52. Hedyſarum hamatum. *Hook-podded Hedyſarum.*

Lin. ſpec. 1056. *Reich.* 509. *amæn.* 5. 403. *Brown. jam.* 298. 1. (Trifolium). *Sloan. jam.* 1. 187. *t.* 119. *f.* 2. (Anonis).

Styloſanthes procumbens. *Swartz prodr.* 108 *obſ.* 286.

β. Trifolium 2. *Brown. jam.* 299. *Sloan. jam.* 1. 186. *t.* 119. *f.* 1. *Burm. zeyl.* 226. *t.* 106. *f.* 2.

Styloſanthes viſcoſa. *Swartz prodr.* 108.

Leaves nerved naked; ſpikes ſeſſile; legumes two-ſeeded, covered, having a hooked point.

53. Hedyſarum triflorum.

Lin. ſpec. 1057. *Reich.* 3. 509. *fl. zeyl. n.* 297. *Burm. zeyl.* 119. *t.* 54. *f.* 2. *Loureiro fl. cochinch.* 450. *Swartz obſ.* 288.

β. *Burm. zeyl.* 118. *t.* 54. *f.* 1. *Retz. obſ.* 4. *n.* 95.

Leaves obcordate, ſtems procumbent, peduncles one-flowered ſeldom three together.

54. Hedyſarum barbatum. *Bearded Hedyſarum.*

Lin. ſpec. 1055. *Reich.* 3. 510. *amæn.* 5. 403. *Swartz obſ.* 287.

Racemes oblong ſomewhat branched, legumes bent in, calyxes hairy.

55. Hedyſarum lagopodioides.

Lin. ſpec. 1057. *ſyſt.* 674. *Reich.* 3. 510. *Burm. ind.* 68. *t.* 53. *f.* 2. *Loureiro fl. cochinch.* 450.

Racemes oblong, legumes bent in, calyxes hirſute.

56. Hedyſarum microphyllum.

Lin. ſyſt. 675. *Thunb. jap.* 284.

Leaves ovate villoſe, ſtem fruteſcent upright ſmooth, flowers terminating panicled.

57. Hedyſarum racemoſum.

Lin. ſyſt. 675. *Thunb. jap.* 285.

Leaves oblong ſtipuled ſmooth, ſtem fruteſcent, upright, racemes axillary upright very long, legumes ſmooth.

58. Hedyſarum caudatum.

Lin. ſyſt. 675. *Thunb. jap.* 286.

Leaves oblong ſmooth, ſtem herbaceous, panicle terminating, legumes tomentoſe.

59. Hedyſarum tomentoſum.

Lin. ſyſt. 675. *Thunb. jap.* 286.

Leaves tomentoſe underneath, ſtem angular tomentoſe, racemes axillary.

60. Hedyſarum ſericeum.

Lin. ſyſt. 675. *Thunb. jap.* 287.

Leaves emarginate villoſe, ſtem fruteſcent upright, flowers axillary ſolitary.

61. Hedyſarum virgatum.

Lin. ſyſt. 675. *Thunb. jap.* 288.

Leaves obtuſe with a point, ſtem angular, hairy, peduncles capillary three-flowered.

62. Hedyſarum piloſum.

Lin. ſyſt. 675. *Thunb. jap.* 288.

Leaves ovate acuminate, ſtem decumbent rough with hairs, racemes axillary.

63. Hedyſarum ſtriatum.

Lin. ſyſt. 675. *Thunb. jap.* 289.

Leaves oblong ſtipuled, ſtem herbaceous, flowers axillary ſolitary.

64. Hedyſarum volubile. *Twining Hedyſarum.*

Lin. ſpec. 1057. *Reich.* 3. 510. *hort. cliff.* 499. *Dill. elth.* 173. *t.* 143. *f.* 170.

H. ſcandens. *Mill. dict. n.* 13? See n. 89.

Leaves ovate-oblong, ſtem twining.

65. Hedyſarum triangulare.

Retz. obſ. 3. *n.* 83.

Leaves ovate acute marked with lines, umbels axillary, branches three-ſided flexuoſe.

**** *With pinnate leaves.*

66. Hedyſarum argentatum. *Silvery Hedyſarum.*

Lin. ſyſt. 675. *Reich.* 3. 511. *ſuppl.* 333.

H. grandiflorum. *Pallas itin.* 2. 743. *t.* y.

Aſtragalus grandiflorus. *Lin. ſpec.* 1071. *Gmel. ſib.* 4. 61. *n.* 78. *t.* 31. *Amm. ruth.* 168.

Leaflets ſilky underneath and ſhining, legumes jointed, ſtem leafleſs.

67. Hedyſarum alpinum. *Alpine Hedyſarum.*

Lin. ſpec. 1057. *ſyſt.* 676. *Reich.* 3. 511. *hort. upſ.* 232. *Gærtn. fruct.* 347. *Loureiro fl. cochinch.* 451. *Gmel. ſib.* 4. 26. *n.* 35. *t.* 10. *Amm. ruth.* 116. *n.* 152. 153.

Legumes jointed ſmooth pendulous, ſtem upright.

68. Hedyſarum obſcurum. *Creeping-rooted Hedyſarum.*

Lin. ſpec. 1057. *ſyſt.* 676. *Reich.* 3. 511. *mant.* 447. *Jacqu. auſtr.* 2. *t.* 168. *Gmel. ſib.* 4. 29. *t.* 12. *Hall. helv. n.* 395. *t.* 12. *D'Aſſo aragon. n.* 707. *Curt. magaz.* 282.

H. alpinum. *Jacqu. vind.* 266.

Stipules ſheathing, ſtem upright flexuoſe, flowers pendulous.]

69. Hedyſarum coronarium. *Common Hedyſ. or French Honeyſuckle.*

Lin. ſpec. 1058. *Reich.* 3. 512. *hort. cliff.* 365. *upſ.* 231. *Gærtn. fruct.* 346. *Beſl. eyſt. æſt.* 13. *t.* 2. *f.* 1. *Rivin. tetr. t.* 98. *Fl. ruſt. t.* 115.

H. clypeatum. *Ger. emac.* 1235. *Raii hiſt.* 929. *Park. parad.* 339. *t.* 337. *f.* 10.—vulgare. *theat.* 1087. *f.* 1.

Onobrychis ſemine clypeato aſpero major. *Bauh. pin.* 350.

O. altera. *Dod. pempt.* 549. *Mor. hiſt.* 2. 129. *n.* 7. *f.* 2. *t.* 11. *f.* 7.

Legumes jointed prickly naked ſtraight, ſtem diffuſed.

70. Hedyſarum flexuoſum. *Waved-podded Hedyſarum.*

Lin. ſpec. 1058. *Reich.* 3. 512. *Rivin. tetr. t.* 213. *Mor. hiſt.* 2. 130. *n.* 8. *Raii hiſt.* 929. 3. (Onobrychis).

Legumes jointed prickly flexuoſe, ſtem diffuſed.

[71. Hedyſarum humile. *Dwarf Hedyſarum.*

Lin. ſpec. 1058. *ſyſt.* 676. *Reich.* 3. 512. *mant.* 447. *Gouan illuſt.* 48. *Raii hiſt.* 929. 2. *Park. theat.* 1082. *n.* 7.

Onobrychis ſem. clypeato aſpero minor. *Bauh. pin.* 350. *prodr.* 149.

Polygalo Geſneri affine Caput gallinaceum. *Bauh. hiſt.* 2. 336.

Legumes jointed rough, wings of the corolla obſolete, ſpikes hirſute, ſtems depreſſed.]

72. Hedyſarum ſpinoſiſſimum. *Prickly Hedyſarum.*

Lin. ſpec. 1058. *ſyſt.* 676. *Reich.* 3. 513. *hort. upſ.* 231. *Pluk. phyt. t.* 50. *f.* 2.

Legumes jointed prickly tomentoſe, ſtem diffuſed.

[73. Hedyſarum virginicum.
Lin. ſpec. 1058. *Reich.* 3. 513. *Gron. virg.* 174. *Loureiro cochinch.* 451.
Stem ſhrubby, legumes jointed ſmooth peduncled upright.

74. Hedyſarum fruticoſum.
Lin. ſyſt. 676. *ſuppl.* 333. *Pallas itin.* 3. 753. *t.* F.
Leaflets alternate oblong ſoft, ſtipules ſubulate, racemes axillary, joints of the legumes netted.]

75. Hedyſarum pumilum.
Lin. ſpec. 1059. *ſyſt.* 676. *Reich.* 3. 513. *mant.* 448.
Stem underſhrubby, wings ſhorter than the banner and banner ſhorter than the keel, legumes one-ſeeded.

76. Hedyſarum argenteum.
H. ſericeum. *Vahl ſymb.* 2. 83. *t.* 41.
Onobrychis orientalis argentea, fructu echinato minimo. *Tournef. cor.* 26. *Shaw itin. n.* 431.
Ebenus pinnata. *Ait. hort. kew.* 3. 27.
Leaves pinnate, legumes one-ſeeded wrinkled, ſpikes ovate very hairy, ſtems erect hairy.

77. Hedyſarum Onobrychis. *Cultivated Hedyſ. Saintfoin* or *Cock's-head.*
Lin. ſpec. 1059. *Reich.* 3. 514. *hort. cliff.* 365. *upſ.* 231. *Hudſ. angl.* 322. *With.* 785. *Sowerby Engl. Bot. t.* 96. *Fl. ruſt. t.* 47. *Pollich pal. n.* 694. *Jacqu. auſtr. t.* 352. *Crantz. auſtr.* 424. *Gmel. ſib.* 4. 31. *n.* 48. *Krock. ſileſ. n.* 1190. *Ruſſ. alepp. t.* 11. *f.* 2. *Villars dauph.* 3. 392.
Onobrychis. *Rivin. tetr. t.* 2. *Dod. pempt.* 548. 2. *Gouan illuſtr.* 48. *Hall. helv. n.* 396.—vulgaris. *Park. theat.* 1082. 1.—ſ. caput gallinaceum. *Lob. ic.* 2. 81. 1. *Ger.* 1062. 1. *emac.* 1243. 1. *Raii hiſt.* 914. 1. *ſyn.* 327. *Mor. hiſt.* 2. 131. *n.* 10. *ſ.* 2. *t.* 11. *f.* 10. *Mill. dict. edit.* 7. *n.* 1.
O. viciæfolia. *Scop. carn.* 2. *n.* 918.
O. fol. viciæ, fructu echinato, major. *Bauh. pin.* 350.
Polygalon Geſneri. *Bauh. hiſt.* 2. 335. 2.
β. O. incana, fol. longioribus. *Bauh. pin.* 350.
γ. O. fol. viciæ, fr. echinato minimo. *Bauh. pin.* 350.
Legumes one-ſeeded prickly, wings of the corolla equal in length to the calyx, ſtem elongated.

78. Hedyſarum ſaxatile. *Rocky Hedyſarum.*
Lin. ſpec. 1059. *ſyſt.* 676. *Reich.* 3. 514. *Pallas itin.* 2. 107. *Ger. prov.* 504. 2. *Allion. pedem. n.* 1191. *t.* 19. *f.* 1. *Villars dauph.* 3. 393.
Legumes one-ſeeded, furrowed, without prickles; wings of the corolla very ſhort, ſcapes ſubradicate.

79. Hedyſarum Caput galli. *Cock's-head Hedyſarum.*
Lin. ſpec. 1059. *Reich.* 3. 515. *Ger. prov.* 504. 4.
Onobrychis Criſta galli. *Gærtn. fruct.* 2. 318.
O. fructu echinato, minor. *Bauh. pin.* 350. *prodr.* 149. *Mill. dict. ed.* 7. *n.* 3. *Raii hiſt.* 914. 2.
Legumes one-ſeeded, teeth of the creſt ſubulate, wings very ſhort, ſtem diffuſed.

80. Hedyſarum Criſta galli. *Cock's-comb Hedyſarum.*
Lin. ſyſt. 676. *Reich.* 3. 515. *Triumf. obſ.* 65. *Ruſſ. alepp. t.* 12.
Legumes one ſeeded prickly, diviſions of the creſt lanceolate toothletted.

81. Hedyſarum crinitum. *Crooked-podded Hedyſarum.*
Lin. ſyſt. 677. *Reich.* 3. 515. *mant.* 102. *Burm. ind.* 169. *t.* 56. *Loureiro cochinch.* 451.
Racemes long, legumes bent in, ſtem ſhrubby.

82. Hedyſarum comoſum.
Vahl ſymb. 2. 84.
H. pictum. *Jacqu. ic.* 3. 567. *collect.* 2. 262.
Leaves pinnate lanceolate, racemes elongated cylindric, ſtem ſhrubby.

83. Hedyſarum cornutum. *Horned Hedyſarum.*
Lin. ſpec. 1060. *ſyſt.* 677. *Reich.* 3. 515. *Pallas itin.* 1. 442. *Tournef. cor.* 26. *itin.* 2. *t.* 108. (Onobrychis).
Leaflets linear, legumes one-ſeeded even, ſtem ſhrubby, peduncles permanent-thorny.

84. Hedyſarum incanum. *Hoary-leaved Hedyſarum.*
Lin. ſyſt. 677. *Thunb. jap.* 289.
Leaves without ſtipules hoary underneath, ſtem erect, flowers in racemes drooping.

85. Hedyſarum lineare. *Linear-leaved Hedyſarum.*
Loureiro cochinch. 452.
Leaflets lanceolate-linear, ſpikes terminating, legumes ſtraight ſmooth and even, ſtem diffuſed.]

86. Hedyſarum ſericeum.
Mill. dict. n. 8.
Leaves ternate, leaflets ovate ſilky underneath, flowers in ſpikes axillary and terminating.

87. Hedyſarum villoſum.
Mill. dict. n. 9.
Leaves ternate, ſtem diffuſed villoſe, flowers in terminating ſpikes, calyxes very villoſe.

88. Hedyſarum glabrum.
Mill. dict. n. 12.
Leaves ternate, leaflets obcordate, ſtem panicled, legumes ſmooth, one-ſeeded.

89. Hedyſarum ſcandens.
Mill. dict. n. 13.
Leaves ternate, leaflets obovate, ſtem twining, ſpike very long, bent back.

90. Hedyſarum pedunculatum.
Mill. dict. n. 17.
Leaves ternate, the middle leaflet on a longer petiole, racemes axillary, upright very long.

DESCRIPTIONS, &c.

[The numerous ſpecies of this genus are moſtly herbaceous, ſome few however (1. 6. 12. 16. 17. 18. 27. 29. 30. 40. 43. 46. 56. 57. 60. 73. 74. 75. 81. 83.) are ſhrubby, at leaſt at bottom. The leaves are ſimple, ternate, or unequally pinnate; in one caſe only binate: hence the ſubordinate diviſion of the genus into four parts. The ſtipules are diſtinct from the petiole. The petiolules of the ternate leaves are jointed into the petiole, and are frequently ſubſtipulated with a filiform ſtipule. The flowers are axillary with one or many-flowered peduncles; or they frequently terminate the ſtem in ſpikes or panicles. The bractes are ſometimes large, varying in their conſtruction; ſometimes ſmall or even almoſt evaneſcent. The legume varies in form, being in ſome ſpecies ſubcylindric with truncate joints; in others compreſſed, and frequently contracted at the joints either on one ſide or both. In ſome ſorts the legume conſiſts of one joint only, containing one ſeed. Some few have both ſimple and ternate leaves. Of the pinnate-leaved ſorts, ſome have a creſted legume, and are diſtinguiſhed by the name of *Onobrychis*. The motion of the leaves in *H. gyrans* (36) is very remarkable[a].

Only one ſpecies (77) of this vaſt genus, namely the *Saint-foin* is native of Great Britain: and only ten are natives of Europe. Far the greater part are perennial.]

1. Stems ſhrubby, about three feet high, branching out on every ſide. Leaves ſhaped like thoſe of broad-leaved Knot-graſs, very ſmooth, of a pale green colour, on ſhort foot-ſtalks. Under theſe come out thorns, near an inch long, of a reddiſh brown colour. The flowers come out from the ſide of the branches in ſmall cluſters; they are purple in the middle, and reddiſh about the rims. Legumes ſickle-ſhaped. [The leaves are ſcarcely ſtipulaceous; the ſpines are axillary, ſometimes branched and floriferous: the legumes are coriaceous, ſubcylindric, and ſcarcely jointed[b].

Native of the Levant.

It is on this ſhrub that Manna (Trungebeen) is found in Meſopotamia[c]; and other Eaſtern countries.] It is chiefly gathered about Tauris, where the ſhrub grows plentifully. Sir George Wheeler found it growing in Tinos; Tournefort alſo found it in many plains of Armenia and Georgia, and made a diſtinct genus of it under the name of Alhagi, [from the Arabic *Aghul* or *Al-gul*.

It was cultivated in 1714, by the Dutcheſs of Beaufort[d].

2. Stipules the length of the petioles. Legumes even, jointed, equal, upright. It varies with lanceolate and cordate-oblong leaves.

Native of India[e].

3. Annual. Stems wand-like, hoary. Leaves alternate, petioled, acute. Racemes very ſhort, axillary. Legumes ſmall, ſnow-white, with a permanent ſtyle, one-jointed.

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[a] Juſſieu. [b] Ibid. [c] Ruſſ. Alepp. [d] Hort. kew.
[e] Linn. ſpec. and zeyl.

Native of India. *Kœnig*[f]: who ſent it under the name of *Indigofera linifolia*, which Vahl has adopted. The habit is different from that of the Hedyſarums, and the keel has a ſpur on each ſide as in the genus Indigofera.

4. Stems long, angular, diffuſed. Leaves alternate, ſimple, obverſely ovate or wedge-ſhaped, blunt with a ſhort point, ſmooth, on a very ſhort petiole. Stipules awl-ſhaped, longer than the petiole, patulous, very ſmall, clothing the ſtem. Spikes ſolitary from the axils, on a long peduncle. Flowers very ſmall. Legumes declined, creſcent-ſhaped, hiſpid on the back, containing one ſeed[g].

Native of India.—Introduced in 1777, by Daniel Charles Solander, L. L. D. It is annual, and flowers here from july to ſeptember[h].

5. Stems a ſpan long, proſtrate. Stipules two-parted, ſtreaked, ſharp, ſcarioſe. Leaves ſmall, petioled, even, blunt. Heads of flowers axillary. Legumes ſubfaſcicled, peduncled, ſtraight, with globular joints often five in number, pubeſcent (the hairs when magnified appearing hooked), and rather large.

Native of India. Perennial[i].

6. Stem ſhrubby: that and the whole plant villoſe. Stipules lanceolate[k].—Native of China.

7. Stems annual, a foot and half high, branched, ſlender, ſmooth, procumbent. Leaves few, quite entire, ſmooth, ſcattered, ſolitary, the upper ones ternate, on long filiform petioles: (the form of Aſarum leaves, but ſmall, often retuſe, naked). Stipules minute. Flowers violet-coloured, in terminating ſpikes (or racemes) conſiſting of few flowers (two only; or a ſingle flower or two in the uppermoſt axils). Calyx hairy, converging. Banner of the corolla broad and very blunt. Legume ſlender, of ſix joints, bent back, ſmooth[l].

Native of India, and the ſuburbs of Canton in China.

8. Stem herbaceous, ſarmentoſe, ſmooth, a foot high. Leaves petioled, ſmooth, ſpotted. Petiole almoſt the length of the leaf. Stipules two, oval, ſmall, petioled, at the baſe of the petioles, ſo that the leaves might in ſtrictneſs be looked upon as ternate. Racemes lateral, axillary, capillary, longer than the leaf: pedicels in pairs. Legumes elliptic, ſmooth, ſharp, having two joints, the lower keel having a ſinus or two.—It reſembles the foregoing ſpecies, but is diſtinguiſhed by its three-ſided, ſarmentoſe ſtem, its ſpotted leaves, and its two-jointed legumes.

Native of India[m].

9. Annual. Stem four feet high, upright, very ſtraight, almoſt ſimple, round but four-cornered at the top, furrowed, hiſpid with very fine hairs, frequently having one or two ſhort upright branchlets. Leaves ſomewhat creſcent-ſhaped, four lines long, two inches broad, bent like a bow, retuſe, three-nerved, veins like a net, ſmooth, variegated yellow red and green: petioles long, ſtraight, ſlender, alternately by threes: ſtipules in pairs, ſharp, minute. Flowers in a ſimple, long, upright, terminating ſpike (or raceme). Calyx hairy, the three lower ſegments ſomewhat longer, all acuminate, and keeled at the back. Corolla white: banner broad-cordate, converging, a little longer than the calyx: wings bent in, ſhorter than the banner: keel of an intermediate length. Legume linear, ſmooth, ſlender; the joints ſomewhat lens-ſhaped, connected by the dorſal thread, as they ripen plaited different ways, drawn within the inflated calyx, converging at the tip. Seeds ſomewhat kidney-ſhaped, flatted, ſhort, brown, ſmooth.—There are frequently ſmaller leaves at the top of the ſtem, unequally and obtuſely three-cornered, and there ſometimes ternate.—In Cochinchina, but originally from Siam. It is cultivated for its beauty, and in a gentle breeze, the leaves as they move reſemble ſo many variegated butterflies[n].

Father Loureiro ſent this plant into Sweden and England in 1774.—According to the catalogue of the Royal garden at Kew, it was introduced in 1780, by Sir Joſeph Banks, Bart.; flowers in july and auguſt, and is biennial.]

10. This is an annual plant, about three feet high, having a ſlender ſtalk, inclining to be ſhrubby. Leaves on very ſhort foot-ſtalks. Some of the plants ſend out one or two ſlender branches from the main ſtalk, on the lower part of which are leaves of the ſame form with thoſe of the principal ſtalk, but ſmaller. On the upper part of the principal ſtalk and branches are flowers for near a foot in length, of a worn out purple colour, ſtanding ſingle at each joint. They are ſucceeded by jointed pods an inch and half long, containing three or four ſeeds.

[Allied to *H. ſtyracifolium*, but larger[o]. Stem diffuſed, ſtipuled, round, hairy. Leaves oblong-ovate, or ovate-lanceolate, quite entire, hairy on both ſides, alternate. Flowers minute, in long, terminating ſpikes: banner and keel of the corolla yellow; wings violet-coloured. Legume bowed, at each joint emarginate on the convex ſide[p].

Native of India, and the ſuburbs of Canton.—Cultivated in 1768, by Mr. Miller: and flowering here in july and auguſt[q].

11. Perennial (annual, *Mill. & hort. kew.*), low, ſeſſile, but neither procumbent nor creeping. Stems ſeveral, from a hand to a long ſpan and a foot in height, either upright or reclining, round, ſlender, roughiſh, with ſlender hairs preſſed cloſe. Leaves alternate, reſembling thoſe of the Caper and almoſt as large, thickiſh, ſmooth, green with paler ſpots, having a pair of ſharp ſtipules both at the baſe of the petioles and of the leaves themſelves. Flowers on the upper part of the ſtalk in pairs one above another, or ſometimes three together, on very ſlender peduncles, forming a long thin ſpike, in which each pair of flowers is placed in a contrary ſituation to the next. One ſegment of the calyx next the banner of the corolla is broader than the reſt, which are very ſlender. Corolla pale violet, (reddiſh yellow, *Miller*) the banner large in compariſon with the other petals; the wings are white at the baſe, and pale blue towards the end, but the keel is all over white. Legumes brown when ripe, roughiſh, compreſſed, in front divided by ſemicircular portions, but with an even line along the back, each portion when ripe ſeparates, and contains one kidney-ſhaped ſeed, ſlightly compreſſed[r].

Native of India.—Cultivated in Mr. Sherard's garden at Eltham in 1732. It flowers in july or auguſt.

12. Stem ſomewhat ſhrubby, naked; with few, wand-like, divaricate, round branches. Leaves alternate, petioled, remote, with ſcarcely apparent ſerratures ending in ſpines, ſmooth, the ſame ſize with thoſe of *Vaccinium Myrtillus*. Flowers axillary: peduncle very ſhort, two-flowered, with a leafy bracte, reſembling a dry wrinkled leaf, and defending the legume from the birds: this is inclining to rhomb-ſhape, is mucronate, and contains one ſeed.—Native of India[s].

13. This is allied to H. bupleurifolium. It is herbaceous and procumbent. The lower leaves are obverſely ovate, emarginate at the baſe; the upper ones more oblong, cordate-lanceolate, and more acute; all are ſmooth, veined, and the petioles are roundiſh. Stipules acuminate. Spikes towards the ends of the ſtems, long and narrow. Branches few. Legumes cylindric, ſmooth, jointed, ſtraight, dividing by joints, though they are ſcarcely apparent on the outſide, and there are no diviſions within.—It varies with lanceolate leaves[t].

Native of India. Annual.

14. Perennial. Stems woody, procumbent, wand-like, round, ſmooth, a foot high. Branches ſhorter than the ſtem. Leaves on ſhort petioles, ſpreading, acuminate, ſmooth, an inch long. Stipules lanceolate-ovate, the length of the petiole. Raceme terminating, when in flower two inches long, when in fruit elongated. Flowers uſually in pairs, ſeldom ſolitary. Calyx five-parted, ſcarioſe, ſtriated, hairy at the tip and on the edge. Legume an inch long; joints from four

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[f] Linn. ſuppl.
[g] Linn. zeyl.
[h] Hort. kew.
[i] Linn. mant.
[k] Linn. ſpec.
[l] Loureiro and Linn. ſpec.
[m] Linn. mant. and ſyſt.
[n] Loureiro.
[o] Linn. ſyſt.
[p] Loureiro.
[q] Hort. kew.
[r] Dilenius.
[s] Linn. mant.
[t] Linn. ſyſt. and zeyl.

to ſix, compreſſed, roundiſh, wrinkled, terminated by the permanent ſtyle.

It differs from H. gramineum (18) in having the joints of the legumes broader, rounder, wrinkled; in other reſpects it reſembles that ſpecies much. It is allied to H. bupleurifolium (2) and vaginale (13); but their legumes are even and directed all the ſame way. The leaves in H. bupleurifolium, nummularifolium (4), moliniferum (5) and vaginale, differ very much on the ſame plant, and are better diſtinguiſhed by the legumes[u]. It is very different from violaceum (48), though Vahl has inadvertently given it the ſame name.

15. Stems herbaceous, filiform, diffuſed, branched. Leaves quite entire, ſharp, even; the upper ones larger, but very like the others, and ſtipuled as they are. Stipules ſemicordate, ſcarioſe, patulous. Flowers among the upper leaves, ſolitary, ſeſſile, ſhorter, hid by the leaves. It differs from *H. ſtrobiliferum* in having ſtrobiles or ſcales of a form different from the leaves, in the peduncles and all other parts they agree.

Found by Thunberg at the Cape of Good Hope[x]. Doubtful whether it may not be the ſame with Glycine monophyllum.

16. Stems many, perennial, ſhrubby, procumbent, three feet long; with three-ſided branches. Leaves alternate, ſharp, with the ſides right-lined and almoſt parallel. Flowers purple, in ſpikes (or racemes) moſtly terminating. Banner roundiſh. Legume compreſſed, ſtraight, linear, jointed, (not ſerrate) hairy. In the Cochinchineſe plant, the leaves have not rounded margins, nor refracted petioles, as the plant of Ceylon has; but they have both lanceolate ſtipules, and the ſtem inclining to red at the end[y].

Native of India, China and Cochinchina.—In Chineſe Kaſong-ſo.

17. This is a tree, with oblong-ovate, alternate leaves, quite entire and petioled: ſtipules ſubulate; branches round. There are ſtrobiles from the axils of the leaves, as in the Hornbeam, on a ſimple flexuoſe peduncle, conſiſting of cordate, ſubſeſſile, obtuſe, numerous, imbricate bractes, like the involucre of the Commelina, large, and the rudiment of a flower within each of them. Theſe ſtrobiles diſtinguiſh this ſpecies from all the others, eſpecially from *H. pulchellum*. n. 21.

Native of India[z].

18. A ſhrub determinately branched. Stems round, ſtiff, jointed. Leaves two inches long, a line and half broad, acuminate, veined, petioles ſhort, brown. Stipules lanceolate, acuminate; there is a ſecond pair at the joint of the ſtem, which in the more adult branches is reſolved into fibres. Racemes ſtiff, elongated, leafleſs. Peduncles in pairs, one-flowered, diſtant. Calyx angular, ſcarioſe. Corolla ſmall, purple. Legumes convex-ancipital, ſmooth, mucronate, joints three to five, perhaps more.

Native of India: ſent by Koenig[a].

19. Annual. Stems herbaceous, procumbent, filiform, round, ſmooth. Leaves alternate: petioles ſtiff, horizontal, diſtant, round, ſmooth: leaflets on very ſhort petioles, oblong, ſharp, entire, nerved, ſmooth; pubeſcent underneath. Stipules oppoſite, on the ſide of the petioles at the baſe, obliquely ovate, acuminate. Peduncles axillary, terminating, longer than the leaves, upright, ſtiff, many-flowered. Flowers alternate, on very ſhort pedicels, between two oppoſite bractes, acuminate at both ends. Corolla yellow or purple. Calyx unequal; the two hinder clefts converging, the two lateral ones ſmaller, rounded, the loweſt ſharp, longer. Banner of the corolla roundiſh, ſcarcely opening, veined, purpliſh; wings ſmaller than the banner; keel bowed in, acuminate. Legume a little longer than the bractes, upright: joints echinate, with one roundiſh, flatted ſeed in each[b].

Native of Jamaica, in the hot ſandy parts; South America; and the Eaſt Indies. Cultivated before 1733 by Mr. Miller, to whom Dr. Houſtoun ſent the ſeeds from Vera Cruz.

β. Root fuſiform, large. Stems herbaceous, round, ſlender, eight inches long, diffuſed. Leaves ovate, ſharp at the tip, ſmooth, ſmall; common petiole long; ſtipules in pairs, ſharp. Flowers yellow, axillary, ſolitary; calyx two-lipped, coloured, ciliate. Legume hiſpid, ſtraight; joints few, lens-ſhaped.—Found wild near Canton, and in Ceylon[c].

20. Native of Jamaica[d].

21. Stem ſhrubby, upright, three feet high, round, ſmooth; branches many, oblique, obtuſely angular. Stipules ovate, acuminate, cut, caducous. Leaflets broad-lanceolate, quite entire, ſmooth, on ſhort petioles, the middle one three times as large as the two others, and on a longer petiole. Spikes of flowers long, ſtraight, terminating. Bractes hiding each three flowers. Corolla yellow. Legume flat, ſtraight, acuminate, compoſed of two joints defended by the bractes. Native of India and China[e].

22. Stem ſomewhat ſhrubby, upright, three feet high, branched. Leaflets ovate, obliquely nerved. Spikes upright, moſtly terminating; flowers heaped, yellow, each with two hairy bractes, marked with lines. Legumes curved, hairy, erect, containing three ſeeds. At firſt ſight this ſeems to differ little from the foregoing ſpecies; it differs however in the leaves being blunt and hairy, the bractes ovate, the crooked form of the legume, and the greater number of flowers and ſeeds.—Native of China, near Canton[f].

23. This is a whitiſh plant, with ſhrubby ſtriated ſtems, very ſhort blunt ſtipules, and oblong leaves. Flowers ſcattered, ſubpedicelled, in pairs or ſolitary. Calyx very ſhort, five-toothed. Corolla yellow, with the claw the length of the calyx, and the border flat. Legumes orbicular-compreſſed, with red briſtles, and three joints.—Native of India[g].

24. Stem ſtraight. Racemes ſcarcely divided, the ſame length with the leaves, with the flowers hanging on looſe pedicels. Legumes rhomb-ſhaped, of one joint only, with one ſeed.—Native of Ceylon[h].

25. Root long, ſmall, woody. Stems a foot long, reddiſh, rough, round, woody. Leaves at unequal diſtances, on petioles half an inch in length; leaflets pale underneath, the middle one longeſt. Corolla purple. Legumes crooked, forming a ſemicircle, brown, the joints united by ſo ſmall an iſthmus, that when they adhere by their roughneſs to the clothes, they ſeparate, whence the Portugueze name of *Erva d'Amor*. Every joint contains one pale yellow ſeed.—It grows almoſt every where in the woods of Jamaica[i].]

26. Stem ſhrubby, about five feet high, dividing into ſeveral branches. The middle leaflet is much larger than the other two. The ſtalks are terminated by long ſpikes of ſmall purple flowers, which are ſucceeded by narrow pods, ſtraight on one ſide, but jointed on the other.

Native of Jamaica, whence Dr. Houſtoun ſent the ſeeds to Mr. Miller; [and alſo of Hiſpaniola.

Cultivated by Mr. Miller before 1733.—Swartz has adopted the name *incanum*, which Thunberg had given to another ſpecies.

27. A ſhrub; very much reſembling *H. lineatum* (n. 24.), but the legumes have ſeveral joints. Leaflets ovate, tomentoſe underneath, ſilky. Racemes lateral and terminating, with pendulous, filiform peduncles. Legumes compreſſed, with one edge repand, and from four to ſeven joints.—Native of India[k].

28. It is a climber, and raiſes itſelf generally to the top of the talleſt trees in the wood. The ſtem is every where beſet with ſmall hooked briſtles, or rough hairs. The leaves are much like thoſe of the kidney-bean; and all the branches terminate in a large and beautiful flower-ſpike[l].

Native of Jamaica: whence the ſeeds were ſent by Dr. Houſtoun to Mr. Miller, who muſt therefore have cultivated it before 1733.

29. A ſhrub with woody branches, the lower ones round and brown, the upper ones angular and villoſe. Leaves petioled; leaflets ovate, petioled, the middle ones twice the ſize of the others. Peduncles axillary,

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[u] Vahl. [x] Linn. ſuppl. [y] Loureiro. [z] Linn. zeyl. [a] Retzius. [b] Swartz.

[c] Loureiro. [d] Swartz. [e] Loureiro and Linn. zeyl. [f] Loureiro. [g] Burm. ind. [h] Linn. ſpec. [i] Sloane. [k] Linn. mant. [l] Browne.

ſolitary, ſhorter than the petioles. Flowers white. Legumes compreſſed, even, bowed back.—Native of India[m], Tanna, and New Caledonia.

30. Leaves like thoſe of Trefoil, with ovate-oblong, ſmooth leaflets, almoſt equal. Flowers in ſpikes. Legumes villoſe, uſually compoſed of two round joints. Native of India[n], and China.

31. Stems ſuffruticoſe, proſtrate, pubeſcent, round, the thickneſs of a pigeon's quill, very much branched. Leaves on very ſhort petioles: leaflets ſeſſile, thick, villoſe, ſmall, having a reflex point at the end; the lateral ones ſmaller. Stipules minute, awl-ſhaped. Flowers on ſhort peduncles, ſolitary, ſeldom two together. On each peduncle an awl-ſhaped bracte. Calyx villoſe, with awl-ſhaped ſegments. Banner and keel double the length of the calyx: wings linear, of the ſame length with the calyx. Germ villoſe. Legume half an inch long; joints orbicular, compreſſed, villoſe, with ſtiff briſtles, reflex and hooked at the end[o].

32. Stems round, hardiſh. Stipules acuminate, ending in a briſtle. Leaves petioled: leaflets ovate-oblongiſh, blunt, on petioles, the middle one more produced. Spikes of flowers narrow. Lower legumes of one joint only, the reſt of more, waved on one ſide. There is a variety which is more procumbent, with blunter leaflets: the loweſt legumes of this are not always one-jointed[p].

Stem herbaceous, ſtreaked, ſmooth, drooping, two feet high and more. Leaves ſmooth: leaflets oblong, blunt with a point, entire, nerved, pale underneath, ſpreading very much, an inch in length, the middle one larger and on a longer petiole. Flowers in racemes, fleſh-coloured. Racemes axillary, frequent, ſpreading and drooping[q].

Native of Ceylon, China, Japan, and the Society iſles.

33. Stem ſhrubby. Leaves on longiſh petioles: leaflets broad, from round inclined to rhomb-ſhape, the middle one twice as large as the others. The upper branches are hiſpid with ſpreading, viſcid hairs. Legumes oval-oblong, membranaceous, blunt at both ends, neither of the ſutures ſinuate, but both entire[r]. Native of India.

34. It grows in tufts, and ſeldom riſes above ſixteen or ſeventeen inches from the root.—Native of Jamaica and Hiſpaniola[s].

35. This is an upright plant, and moſtly ſmooth. Stem ſtreaked and angular. Leaflets lanceolate. Stipules awl-ſhaped[t]. Perennial.—Native of Virginia and Canada. Flowering in july and auguſt. Cultivated in 1640, according to Parkinſon[u].

36. Root branching, perennial (biennial, ***hort. kew.*** annual, *Swartz obſ.*). Stem ſhrubby, three feet high, wand-like, upright, very ſmooth, round, without knots. Leaves alternate, petioled, hanging down or ſpreading, often vertical, ſometimes ſimple but uſually ternate, eſpecially in adult plants: the middle leaflet lanceolate, long, flat, quite entire, very ſmooth, veined; the ſide ones very ſmall, and ſeeming rather to be appendicles than leaflets; they are on ſhort petioles, which are remarkable for a motion peculiar to them. The common petiole is ſpreading, half round, ſhorter than the leaf, and villoſe. Stipules lateral, upright, awl-ſhaped, ferruginous, deciduous[x].

Racemes terminating and axillary, rather ſimple, many-flowered, long, leafleſs, pubeſcent. Flowers nodding. Bractes ſolitary, membranaceous, cordate under the flowers, deciduous. Calyx erect, two-lipped; upper lip trifid, lower with two ſmaller contiguous teeth. Banner of the corolla largiſh, roundiſh, entire, brown with duſky ſtreaks; wings connected with the keel by their upper edge, brown; keel longer than the wings, bifid at the baſe and tip, compreſſed, ferruginous. Legume on a ſhort pedicel, compreſſed, channelled at the back, crenate in front, gaping, containing five or ſix, kidney-form, oblong ſeeds[y].

The leaves are of a bright green, with the middle part of a more glaucous appearance than the reſt. Flowers pale red, ſlightly tinged with blueiſh, and ſometimes yellowiſh[z].

The ſingular motion with which the lateral leaflets or appendicles of this plant are endued is thus deſcribed in Linneus's ſupplement.

"This is a wonderful plant on account of its voluntary motion, which is not occaſioned by any touch, irritation, or movement in the air, as in Mimoſa, Oxalis and Dionæa; nor is it ſo evaneſcent as in Amorpha. No ſooner had the plants raiſed from ſeed acquired their ternate leaves, than they began to be in motion this way and that; this movement did not ceaſe during the whole courſe of their vegetation, nor were they obſervant of any time, order or direction; one leaflet frequently revolved, whilſt the other on the ſame petiole was quieſcent; ſometimes a few leaflets only were in motion, then almoſt all of them would be in movement at once: the whole plant was very ſeldom agitated, and that only during the firſt year. It continued to move in the ſtove during the ſecond year of its growth, and was not at reſt even in winter."

Swartz obſerves that the motion is irregular, and that it ſometimes ceaſes entirely; that in a very hot day it is immovable, being agitated only in the evening, and that ſlowly.

In our climate the leaves in general only make a faint and feeble attempt towards the middle of the day at exerting their extraordinary faculty[a].

We are at a loſs to account for this motion, which does not depend upon any external cauſe that we can trace, and which we are not able to excite by any art that we poſſeſs. It is not the action of the ſun's rays, for this plant is fond of ſhade, and the leaves revolve well on rainy days, and during the night: expoſed to too much wind or ſun, it is quiet. Perhaps, ſays Linneus, there may be ſome part in vegetables, as in animals, where the cauſe of motion reſides[b].

It is a native of Bengal near the Ganges: and is called there *Buram Chadali* or *Burram Chandali.* It grows luxuriantly, and flowers, in the gardens at Jamaica. It was introduced here in 1775, by Patrick Ruſſell, M.D. and flowers in july and auguſt[c]. Forſter ſent the ſeeds to Linneus in 1778.

37. This reſembles *H. canadenſe* very much. It is an upright, hairy plant. The leaflets are ovate. Stipules awl-ſhaped, ſubcordate. Flowers white.

Native of Virginia[d].

38. Stem woody, round, purpliſh, pubeſcent at top. Leaflets on a ſhort petiole, ovate, unequal; the lateral ones ſmaller, oblique on one ſide; the end one ſomewhat rhomb-ſhaped, an inch and half long, almoſt double the ſize of the others, all repand-crenate from the middle upwards, blunt, mucronate, paler underneath, villoſe on the veins. Petioles two inches long, pubeſcent, jointed and thicker at the baſe, with two briſtle-ſhaped ſcales between the leaflets. Stipules lanceolate, ciliate. Peduncle terminating, erect, half a foot long. Flowers very remote, purple, before they open drooping. Pedicels two or three at each joint, capillary, pubeſcent, an inch long, ſomewhat clammy. Calyx pubeſcent. Wings lanceolate, ſhorter than the keel. Legume linear.

Native of Arabia.

39. Stems weak, ſimple, three-ſided, ſomewhat hairy. Leaflets petioled, an inch long, the ſide ones ſmaller, having long hairs thinly ſcattered over both ſurfaces, and preſſed cloſe to them. Petioles an inch and half long, hairy. Stipules ſemicordate, nerved, ciliate, acuminate. Racemes two or three inches long. Pedicels alternate, remote. Bractes lanceolate, nerved, ending in a dagger-point that is ſcarcely pungent. Legumes an inch long, erect, a little incurved; joints oblong, covered with hooked hairs. It may be doubted whether it be different from H. trigonum (28).

Native of the Weſt Indies[e].

40. Root perennial. Stems ſeveral, as thick as a ſmall quill, eighteen inches or two feet and upwards

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[m] Linn. zeyl.
[n] Ibid.
[o] Vahl.
[p] Lin. zeyl.
[q] Thunberg.
[r] Linn. zeyl.
[s] Browne and Swartz.
[t] Linn. ſyſt.
[u] Hort. kew.
[x] Linn. ſuppl.
[y] Swartz.
[z] Shaw.
[a] Ibid.
[b] Linn. ſuppl.
[c] Hort. kew.
[d] Linn. mant.
[e] Vahl.

in height, round, ſmooth, ſtiff, upright, with alternate leaves from top to bottom, like thoſe of *Trifolium bituminoſum*, but blunter, pale underneath and covered with ſoft hairs, eſpecially on the upper and young leaves, which are hoary with a ſilky down: the middle leaflet is larger and broader than the others, inclining to rhomb-ſhaped: petioles ſlender and ſhort, with a pair of ſtipules at their baſe and on the middle pedicel. Flower-ſtems ſquariſh and roughiſh, with ſmall flowers diſtant from each other in two long rows on ſhort ſlender peduncles. Corolla purple fading to blue: banner broadiſh, firſt concave then ſpreading, having a greeniſh ſpot at the baſe; wings applied to the keel, of a purple colour; keel compreſſed, whitiſh towards the baſe. Calyx divided into four ſhort ſegments. Legumes ſhort, compreſſed, not rough, but ſlightly hirſute, with ſome oblique veins.

Native of Virginia, Carolina, Maryland. Cultivated in Dr. Sherard's garden at Eltham in Kent, in 1725; it flowered there the beginning of october, 1729[f].

41. It grows erect, and riſes generally to the height of two feet and a half or more. The leaves are moderately large, and the ſtipules are roundiſh and broad. Flowers in ſpikes thinly placed, on pedicels half an inch long; corolla of a pale purple colour. Legumes ſlender, rough, variouſly turned and diſtorted.

Frequent in the more remote hills, and inland parts of Jamaica[g], and Santa Cruz, alſo in Vera Cruz; whence it was ſent by Dr. Houſtoun. It flowers here in july and auguſt; and was cultivated by Mr. Miller in 1731[h].

Vahl, who deſcribes this, has another ſpecies ſent by Pflug from the ſame iſland of Santa Cruz, which he calls H. molle. It reſembles the tortuoſum, but has a ſtronger ſtem, with larger leaves, ſoftly villoſe underneath, the younger ones on both ſides, not at all ſpotted: pedicels aggregate, often four or five: the legumes are double the ſize, with the laſt joint very large in compariſon with the reſt[i].]

42. Stems woody, trailing, a foot and half long, ſending out ſeveral branches on each ſide. Leaflets ſmall, pale green. Flowers ſmall, of a pale purpliſh colour. Legumes narrow; each joint four-cornered, containing a ſingle, ſmall, compreſſed ſeed. Annual. Native of Jamaica.

43. Root perennial. Stems two or three ſhrubby, hairy, near two feet high, branching on every ſide near the top. Leaves ovate-lanceolate, hairy underneath, on ſhort foot-ſtalks. Flowers at the ends of the branches in ſhort ſpikes, purpliſh-yellow and ſmall. It was ſent by Dr. Dale from South Carolina.

[Jacquin thus deſcribes his H. fruteſcens, which is probably a different plant. Stems ſeveral, round, ſhrubby, perennial, wand-like, ſeveral feet in length, branched; the younger ones villoſe, procumbent or ſupporting themſelves. Leaves alternate, on villoſe petioles; leaflets ſuboval, blunt, quite entire, villoſe underneath, almoſt ſmooth above; at the bottom of the ſtem often rounded. Stipules to the leaf lanceolate-acuminate; to the leaflets briſtle-ſhaped and caducous. Racemes terminating, looſe, half a foot long and more. Pedicels in pairs, ſpreading, each one-flowered. Flowers purple, ſmall, without ſcent. Calyx villoſe; upper lip ſemibifid, lower trifid, the ſegments acuminate, erect. Banner very widely ovate; wings and keel oblong. Legume an inch long, very much compreſſed, brown, rough, five-jointed.

44. This runs many feet from the main roots, commonly caſting a few fibres from all the joints that touch the ground, which greatly forwards its luxuriant growth. The leaves are marked with ſome prominent veins on the under ſide, and are ſeldom leſs than an inch and half in length.—Common in the ſhady hills of Jamaica[k], and Domingo.

45. Native of North America. Introduced in 1787, by Thomas Walter, Eſq. Perennial[l].

46. Spikes oblong. Legumes of one joint, ovate, acute. In gardens, the firſt year it bears mutilated flowers, and yet is fruitful. The ſecond year the corollas are white.—Native of Virginia[m].

47. *Root* perennial. *Stem* herbaceous, two feet high, ruſhy, wand-like, round, ſomewhat furrowed, ſmooth, ſomewhat pubeſcent towards the end; branches of the ſame length and ſtructure with the ſtem, alternate, few. *Leaves* alternate, petioled, reflex: leaflets petioled, ſmooth, quite entire, bluntiſh with a point, the two lower on ſhorter petioles; theſe are the length of the leaflets: ſemicylindric and ſmooth. *Stipules* permanent, ſubulate, at firſt erect then ſpreading, very ſhort, purpliſh. *Racemes* axillary, few-flowered (at moſt eight), leafleſs, a little longer than the leaves, peduncled. *Peduncles* twice as long as the petioles, filiform, ſmooth. *Flowers* in pairs, erect, pedicelled. *Bractes* ſmall, ovate, ſcarcely viſible. *Calyx* ſegments ſharp, the three upper approximating, the two lower divaricating. *Corolla* white; banner broad, roundiſh, ſcarcely emarginate with blood-red ſtreaks at the baſe; wings ovate, rounded at the tip; keel bifid from the tip to the middle, the lobes rounded. *Legume* ovate, compreſſed, mucronate, one-ſeeded, ſcarcely larger than the compreſſed calyx. *Seed* yellowiſh, oblong, the ſize of the legume.—When the plant firſt grows up in the ſpring, the ſtems are more pubeſcent, in greater number, more ſimple, purple and almoſt blood-red; in the ſummer they are green; the lower leaves are ſimple not ternate, and purpliſh.

Native of India[n].—Linneus received the ſeeds from David van Royen in 1761. It was introduced here in 1776, by Monſ. Thouin: and flowers in july and auguſt[o].

48. Flowers violet-coloured, in pairs, uſually connected by their proper pedicels, in ſome glomerate from the axils of the leaves, in others fixed here and there on filiform peduncles. Legumes three times as long as the calyx, ſharp, ſmooth, netted, containing one ſeed[p].

Native of North America.—Introduced in 1787, by Thomas Walter, Eſq.[q]

49. Flowers purple[r].—Native of Virginia. Introduced in 1781, by Monſ. Thouin[s].

50. Flowers purple[t].—Native of Virginia.

51. Clayton deſcribes the American plant to have procumbent woody ſtems; ſmooth leaves; flowers variegated red and white, or ſometimes white only, on long upright axillary peduncles, diſpoſed in a ſmall ſpike; legumes ſhort, acuminate, ſmooth, compreſſed, containing one very ſmall ovate ſeed[u].—Dillenius thus deſcribes the Ceyloneſe plant, which is probably different from the Virginian.

Annual. Stems many, ſlender, from a long ſpan to a foot and a foot and half in length, round, red, hairy. Leaves at firſt ſingle, afterwards moſtly ternate, roundiſh, like thoſe of Strawberry-Trefoil, ſometimes obcordate, ſometimes not, thickiſh, frequent, ſmooth above, ſomewhat hoary underneath, on ſlender hairy petioles; at their baſe a pair of broadiſh ſtipules, and another pair at the baſe of the leaves, which are ſlender. The flowers come out towards the end of the ſtalks, ſometimes ſingle, ſometimes two, three or four together, on extremely ſlender pedicels; they are ſmall and purpliſh; the calyx is divided into five narrow, hairy ſegments. Legumes ſhort, brown, with ſlender tranſverſe wrinkles, rather ſmooth however than rough, with ſome fine hairs about the edge. Seeds ſmooth, greeniſh aſh-colour with black dots[x].

Native both of the Eaſt and Weſt Indies.—Dillenius ſays, that it grew in the Eltham garden from Ceylon ſeeds, ſent by Commelin.—Miller received the ſeeds by Dr. Houſtoun from the Havannah. They cultivated it therefore about the ſame time. It flowers in july, and ſometimes perfects ſeeds in auguſt or ſeptember.

52. Root long, deep. Stems many, round, hairy, from ſeven or eight inches to a foot in length, creeping, branched. Leaflets ſmall, ſmooth, ſhining, ciliate, having many beautiful white nerves on the under ſur-

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[f] Dillenius. [g] Browne and Sloane. [h] Hort. kew.
[i] Symb. 2. 83. [k] Browne. [l] Hort. kew.

[m] Linn. ſpec. and ſyſt. [n] Linn. dec. [o] Hort. kew.
[p] Linn. ſpec. [q] Hort. kew. [r] Linn. ſyſt.
[s] Hort. kew. [t] Linn. ſyſt. [u] Gron. fl. virg.
[x] Hort. elth. 172.

ſace.

face. The flowers come out towards the top; they are of an orange colour, with a little purple in the middle. Legume ſmall, rough, ſeldom exceeding two lines in length, never containing above one ſeed, which is reddiſh.—Native of Jamaica[y], Hiſpaniola, and Ceylon.

Swartz makes this ſpecies to be of a genus totally diſtinct, and even very different from all the others of this claſs; becauſe it has a corolliferous calyx, and an inferior germ, in the ſame manner almoſt as *Oenothera.*

β. Stems from one to two feet in length, ſhrubby, gray, branched into many twigs, which are green and hoary. Leaflets purple on the edge, having purple ſpots on their backs, and a down of the ſame colour; petioles half an inch long. Flowers on the tops of the twigs, yellow, ſeveral opening ſucceſſively. Legume very ſhort, thin, ſhaped like a ſcymitar, having ſeveral lines or nerves on it, containing one ſeed, which is ſhining, brown, with a point on one ſide and defect on the other[z].

Native of Jamaica, and Ceylon, for this ſeems to be Burman's plant.—Swartz makes this a diſtinct ſpecies, under the name of *Styloſanthes viſcoſa.*

53. Roots ſimple, long. Stems filiform, crowded, when magnified appearing three-cornered, ſubdivided, pubeſcent. Leaves alternate. Petioles ſhort. Stipules oppoſite, acuminate, membranaceous, at the baſe of the petioles. Leaflets roundiſh, obcordate or ſlightly emarginate, ſmall, nerved, netted, ſmooth above, glaucous underneath. Peduncles oppoſite to the petioles, ſimple, ſolitary, two or at moſt three together, the length of the petioles; filiform, one-flowered. Flowers minute, ſcarlet. Calyx two-lipped; the three hinder ſegments linear, contiguous, ſharper, the two in front diſtant, lanceolate. Banner of the corolla roundiſh-cordate, ſpreading, reflex, pale; wings and keel ſhorter than the banner, approximating, ſcarlet. Legume ſmall, peduncled, crenate in front, containing three or four ſeeds, which are roundiſh and minute.—It wakes at ten o'clock in the morning, and ſleeps at four in the afternoon[a].

Stem annual, round, ſhort, in tufts. Leaves obcordate, ſmooth, ſmall, petioled. Flowers white, on one-flowered, heaped, axillary peduncles. Legumes bowed, containing ſeveral ſeeds[b].

Native of both Indies and China.—The Eaſtern cannot be diſtinguiſhed from the Weſt-Indian plant[c]. And yet the deſcriptions do not perfectly agree.

β. Stems ſcarcely half a foot long, hiſpid. Leaflets obcordate, both they and the petioles hiſpid and naked. Stipules ovate, ſharp, ſtreaked. Peduncles the length of the leaf, axillary, ſolitary, one-flowered, oppoſite to the leaves. Flowers ſmall. Calyxes hiſpid. Legumes ſometimes of one joint, ſometimes of ſeveral, with one edge entire[d].

Native of Ceylon and China.

54. Stem procumbent, from three to five inches in length, branched, round, ſomewhat ſhrubby at the baſe, even: branches procumbent, almoſt ſimple, ſhort, round, pubeſcent. Leaves petioled. Petioles alternate, thicker at the baſe, filiform, ſhort, round a little flatted, ſmooth. Leaflets obovate, petioled, the middle one double the ſize of the two others, entire, ſomewhat glaucous above, hoary on the back. At the tips of the leaves are very ſhort little briſtles. Stipules oppoſite, at the baſe of the petioles, ſeſſile, lanceolate, ſharp. Flowers terminating, in a ſort of ſpike, comoſe. Peduncles long, two, approximating, filiform; the flowers nodding, pale blue. Calyx ſubbilabiate; the two upper ſegments approximating, the tips linear, hirſute; the three lower ones diſtant, parted to the baſe, lanceolate, hirſute, whence there is a broad hirſute ſpike. Banner of the corolla ſpreading at top, roundiſh; wings lanceolate, blunt: keel ovate, bowed in, ſpreading. Legume lanceolate, bent variouſly, bowed in: joints roundiſh, ſmooth. Seeds roundiſh, compreſſed.—Native of Jamaica, in the dry ſandy parts[e].

55. Stem underſhrubby, upright, two feet high, round, hiſpid: with diffuſed branches. Leaves ternate, ſometimes quinate; leaflets ovate-lanceolate, ſmooth, (blunt, naked, terminating in a very ſmall briſtle; *Lin. ſpec.*). Stipules lanceolate, minute. Flowers dark purple, in oblong, denſe, very hirſute, terminating ſpikes. Bractes roundiſh, acuminate, two-flowered, deciduous. Peduncles one-flowered, long, bent in, hirſute. (Calyx very ſhort, the ſegments ending in three hirſute briſtles, *Lin.*), converging, and concealing the corolla with many long hairs. (Corolla ſmall, *Lin.*) Legume linear, coloured (even, having three or four joints, *Lin. ſyſt.*) which are drawn back and plaited. Seeds flatted, brown, even, ſmall[f].

Native of China, and New Caledonia.—Loureiro remarks that Burman's figure does not agree with his obſervation, in the number and form of the leaves.

56. Stem filiform, purple: branches alternate, frequent, upright, like the ſtem, ſubdivided: twigs capillary, ſhort, reflex, almoſt covered, as well as the branches, with ſtipules. Leaves petioled: leaflets acute, entire, nerved, the upper ſurface ſmooth, the lower villoſe and pale: the middle leaflet on a long petiole, the ſide ones on ſhorter. Petioles capillary, purple; ſmooth. Stipules ſeſſile, ovate, awl-ſhaped, membranaceous, frequent. Flowers on capillary pedicels, alternate, or ſubdichotomous, flexuoſe; purple, hiſpid. Calyx hirſute. Corolla purple. Legumes of three joints, villoſe-ſcabrous.—It differs from *H. ſtipulaceum* in its fruteſcent, upright ſtem; in its ovate, acute, villoſe leaves; in having the flowers growing in a kind of raceme:—from *H. marilandicum,* in its ſcabrous legumes:—from *H. fruteſcens,* in its ſmooth ſtem: and from *H. repens* in having the racemes terminating.—It flowers in auguſt and ſeptember.—This and the following ſpecies are natives of Japan.

57. Stem ſmooth: branches alternate, angular, ſmooth, purple, upright. Leaves alternate, petioled: leaflets petioled, the middle one on the longeſt, ovate-oblong, acute, entire, ſpreading, hoary underneath, the middle one twice as large as the two others: petiole filiform, ſmooth, an inch in length: ſtipules two, briſtle-ſhaped, half a line long, between the two ſide leaflets, and below the odd one. Racemes a hand or more in length, from upright-ſpreading, capillary, ſmooth, often ſeveral: pedicels ſolitary or in pairs, one-flowered, very ſhort, capillary. Calyx and corolla ſmooth. Legumes compreſſed, acuminate, even. It reſembles *H. viridiflorum*; but differs in having axillary, not terminating racemes; legumes ſharp and ſmooth, not blunt and rough; and briſtle-ſhaped ſtipules on the upper part of the common petiole.

58. Stem upright, ſmooth, ſimple, a foot or more in height. Leaves petioled, upright: leaflets acute, entire, nerved, the middle one larger and on a longer petiole than the two ſide ones: petioles ſemicylindric; channelled: ſtipules two, at the baſe of the petiole, between the ſide leaves, and below the odd one; they are briſtle-ſhaped. Calyx hirſute. Corolla purple. Legume almoſt linear, with a ferruginous down on it.—It reſembles *H. gangeticum,* but is diſtinguiſhed from it by the ternate leaves in this.

59. The whole plant, except the upper ſurface of the leaves, is tomentoſe. Stem herbaceous, angular, flexuoſe, upright, a foot or more in height. Leaves petioled: leaflets ovate-oblong, blunt with a point, entire, edged, marked with lines and nerves; the ſide ones on very ſhort petioles, only half the ſize of the middle one, which is an inch in length: petiole furrowed, upright, an inch long. Stipules two, at the baſe of the petiole, broad at the baſe, briſtle-ſhaped.

60. Stem many-ſtreaked, upright, villoſe at the corners, two feet high and more: branches alternate, very frequent, wand-like, upright, ſubdivided a little, reſembling the ſtem. Leaves very frequent, on ſhort petioles, ſilky-tomentoſe on both ſides: leaflets oblong, tapering at bottom, retuſe with a point, ſubſeſſile, upright, half an inch long, the middle one longeſt. Stipules briſtle-ſhaped. Flowers on very ſhort peduncles. Calyxes ſilky-tomentoſe.—It differs from *H. ſtriatum,* in having the ſtipules briſtle-ſhaped, not preſſed

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[y] Sloane and Browne.
[z] Sloane.
[a] Swartz.
[b] Loureiro.
[c] Swartz.
[d] Retzius.
[e] Swartz.

[f] Loureiro.

cloſe; the leaves longer, retuſe, ſilky, not ſtreaked; the ſtem upright and ſtiff, fruteſcent. It flowers in ſeptember and october.

61. Stem herbaceous, with hairy angles, upright, purpliſh: branches alternate, filiform, angular, hairy, from erect-ſpreading, wand-like. Leaves on very ſhort petioles: leaflets alſo on very ſhort petioles, ovate, entire with the edge reflex, marked with lines; the upper ſurface green and ſmooth, the lower pale and hairy; the middle one largeſt. Flowers axillary; peduncles hairy, three-flowered at the tip, from ſpreading reflex, an inch long.

62. Stem herbaceous, filiform, very hairy: branches few, alternate, ſhort, reſembling the ſtem. Leaves petioled, villoſe on both ſides: leaflets on ſhort petioles, blunt with a briſtle-ſhaped point, ſpreading; the odd one a little larger and on a longer petiole than the two ſide ones. Each raceme has about four flowers. Peduncle capillary, ſcarcely the length of the petiole. Corolla purple.—It flowers in ſeptember.

63. Stem angular, hairy, rather upright though weak, a foot high and upwards: branches alternate, wand-like, frequent, ſpreading, ſimple. Leaves on ſhort petioles: leaflets blunt, ſomewhat retuſe, acuminate with a ſmall briſtle, entire, with parallel ſtreaks, ſmooth except the dorſal rib, which is hairy, the middle one hardly larger. Stipules at the baſe of the petiole, ovate, membranaceous, ferruginous, preſſed cloſe. Flowers ſingle, on very ſhort peduncles from the axils of the leaves. Calyx hairy. Corolla purpliſh [g].

All theſe are natives of Japan.

64. Root perennial. Stems ramping, ſix feet high and more, ſlender, not thicker at bottom than at top, round, finely haired, twining from left to right, having joints diſtant from each other a hand or a ſpan; at every one of theſe is a trifoliate leaf, on long, ſlender, ſmooth petioles; leaflets blunt, veined, deep green and ſhining on the upper ſurface, paler and ſomewhat glaucous on the under, with a down ſcarcely viſible except in the young leaves: petiolules of the ſide leaflets very ſhort, of the middle one longer, with a pair of minute ſtipules under the leaflet. Spikes of flowers axillary, on very long, ſlender, ſmooth peduncles: flowers diſtant, two or three together, generally oppoſite: banner broadiſh, firſt concave, then flat and bent back, with a greeniſh ſpot at the baſe: wings of a middling length, applied to the keel, which is compreſſed and cuſpidate; the whole of a very lively purple, except the hinder part of the banner, which changes to an obſcure dun colour. Calyx divided into four ſegments, of which that next the banner is ſomewhat broader than the reſt [h].

Native of North America. Cultivated in Dr. Sherard's garden at Eltham at leaſt as early as 1727, probably ſome years ſooner, about 1724.

Perhaps H. ſcandens of Miller n. 13. (89.) which he received from La Vera Cruz by Dr. Houſtoun, may be the ſame with this.

65. This reſembles *H. lineatum* in many reſpects, but the leaves are more acute, ſilky-tomentoſe all over the back and on the edge of the upper ſurface, they are alſo darker. All the nerves underneath, with the midrib above are very tomentoſe. Flowers ſmall, ſeſſile, in a peduncled axillary umbel. Angles of the branches tomentoſe. Petioles ciliate. Stipules filiform.—Thunberg gathered it in Java [i].

66. Leaves radical, with leaflets from ſeven to nine, equal, ovate. Scapes the length of the leaves or higher, ſomewhat tomentoſe, white. Spike terminating. Calycine leaves near the length of the corolla, which is violet-coloured or white, with the wings ſhorter than the banner. The legume conſiſts of two or three lanuginous joints, enveloped in the dry flower.—Native of Siberia. Perennial [k].

67. Stem ſtraight. Stipules ſhort. Leaflets ſeventeen, ovate-lanceolate [l].—Stem ſomewhat ſhrubby, four feet high, round, ſimple, branched. Flowers yellow in ſmall, upright racemes. Legume linear, ſtraight, ſlender, long [m]: membranaceous, leafy-compreſſed; joints from two to four, ovate, ſmooth, netted, ſepaparating but not opening ſpontaneouſly. Seeds many, oblong kidney-ſhaped, ferruginous [n].—Native of Siberia and Cochinchina.

68. This plant commonly attains only the height of from two to ſix inches or a little more, ſeldom being found a foot high; hence differing materially from the H. alpinum of Linneus, which reaches the human ſtature. Root perennial, creeping. Stem annual, ſeldom branched, upright, terminated by a raceme. Root-leaves on the flowering plant none. Stem-leaves few, alternate: leaflets from three to eight on each ſide, with an odd one, ovate-oblong, blunt with a ſmall point, entire, oppoſite, on ſhort petioles, hirſute underneath when viewed with a magnifier, marked with lines by veins aſcending obliquely. Stipules lanceolate, membranaceous, claſping, ſubaxillary, brown, often cloven above the middle into awl-ſhaped ſegments; thoſe which are below the leaves are ſubimbricate and ſheathing. Flowers eight lines in length, imbricate, pendulous, on ſhort peduncles, varying in number, having no ſcent. Lower ſegments of the calyx gradually longer. Corolla violet-purple or red, ſeldom white: banner ſpotted with white above the claw; that and the wings nearly of the ſame length; the keel ſhorter. Germ commonly red. Legume oblong, compreſſed, ſmooth, browniſh, with from one to four roundiſh or oblong joints.

Native of the higher Alps, where it flowers in july [o].

Linneus named this ſpecies from the obſcurity attending it: that however has been well cleared up by Profeſſor Jacquin as above. Linneus, in mantiſſa, remarks, that the ſtem is flexuoſe. Stipules ſtem-claſping, an inch long. Leaflets exactly elliptic, mucronate, with a little briſtle.

Plant, according to Flora Aragoniæ, ſuffruticoſe. Leaflets ovate. Stipules ſheathing. Peduncles longer than the leaves. Flowers in racemes, purple, with a flatted keel, broader outwards.

Haller makes this the ſame plant with *H. alpinum*; but Linneus's ſpecimen from Switzerland is very well repreſented in Haller's figure, and it is certainly a ſpecies very diſtinct from the *H. alpinum* of Siberia.]

69. Root biennial. Stems from two to three feet high, hollow, ſmooth, branching. Leaves compoſed of five or ſix pairs of oval leaflets, terminated by an odd one; they are alternate, and from the angles which they form with the ſtem and branches, peduncles come out five or ſix inches in length, ſuſtaining ſpikes of beautiful red flowers, which open in june and july, and perfect ſeeds in ſeptember, after which the roots commonly decay; but if the plants be cut down before they ſeed, they will laſt longer.

[Legume oblong, a little flatted. Joints three or fewer, roundiſh, with a crenulate border; covered with a thin fungous bark, muricated on the outſide with ſhort little prickles. The proper laminas are of the conſiſtence of paper, ſmooth, ſcarcely opening ſpontaneouſly, but ſeparating by joints.—*H. flexuoſum* and *grandiflorum* have alſo their joints covered with a bark; in other ſpecies they are ſimple [p].—Native of Spain and Italy. Ray obſerved it in Sicily. In Calabria it grows wild in great luxuriance, near four feet high, affording excellent nouriſhment to horſes and mules, both green and made into hay: but it does not well bear the ſpring in the north of Italy: we may preſume, therefore, that it will ſcarcely bear our climate well enough to anſwer the purpoſes of huſbandry.

Oſbeck mentions, that he ſaw it brought into Cadiz in great bundles, as food for the cattle. In German, French, Italian and Spaniſh it has the name of *Sulla*; in German it is alſo called *Kronencklee*, *Schildklee* and *Spaniſche Klee*. In French *Sainfoin d' Eſpagne*, and *Sainfoin à bouquets*. In Dutch *Sierlyk haanekop*.

Parkinſon calls it *red Sattin-flower*, or *red-flowered Fitchling*, and obſerves that ſome fooliſhly call it, *red or French Honeyſuckle:* the fooliſh name, however, has obtained in Engliſh. He informs us (1629) that the variety with a white flower grew at Stubbers by North

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[g] Thunberg. [h] Dillenius. [i] Retzius. [k] Linn. ſuppl. [l] Linn. ſyſt. [m] Loureiro.

[n] Gærtner. [o] Jacquin. [p] Gærtner.

Okenden, in the garden of Maſter William Coys, a gentleman of good reſpect in Eſſex, a great and ancient lover and cheriſher of theſe delights, and of all other rare plants.

It was cultivated in 1596, by Gerarde [q].]

70. This has ſome reſemblance to the foregoing, but is much ſmaller. The ſtalks riſe near a foot high, and the leaves are compoſed of two or three pairs of ovate leaflets terminated by an odd one. The flowers come out in ſpikes at the top of the ſtalks, and are of a pale red, intermixed with a little blue. They appear in july, and are ſucceeded by jointed pods, which are waved on both ſides, forming an obtuſe angle at each joint; the ſeeds ripen in autumn. It is an annual plant, and grows naturally in the Levant.

Cultivated by Mr. Miller, in 1739 [r].—It grew in the Oxford garden (1671) from ſeed ſent from Aleppo, by Mr. Huntington [s].

71. Root perennial. Stems half a foot in length, uſually with one branch and leaf only. Leaflets obovate-oblong, villoſe underneath. Spike ovate. Calyx hirſute, ſhorter by half than the corolla, ending in briſtles. Corolla like that of *H. coronarium*, but ſmaller: banner of the ſame length with the keel; wings much ſmaller, not above one third of the length. Legumes of two joints uſually. Gerard will have it to be a variety of *H. pumilum*, but he is wrong [t].

Native of the South of France and Spain. Ray found it in Sicily, in a ſmall iſland near Capo Paſſaro.—It appears from Parkinſon, that it was cultivated here in 1640. It flowers in july and auguſt. Annual [u].]

72. This is an annual plant. Leaflets four or five pairs, with an odd one, narrow and oblong. Stem terminated by ſmall ſpikes of purple flowers, which are ſucceeded by ſmall rough legumes.

[The legume has generally two orbicular joints, equally prickly [x]. Native of Spain and Portugal. Cultivated in 1731, by Mr. Miller.

73. Stem upright, three feet high, with aſcending branches. Leaflets oblong, blunt, ſmall, many. Flowers violet-coloured, in terminating ſpikes. Legume ſlender, with roundiſh, flatted ſeeds [y]. Native of Virginia and Cochinchina.

74. Leaflets from nine to twelve, remote, petioled, hoary. Racemes few-flowered, ſhorter than the leaves. Corollas purple. Legumes flatted, with the joints wrinkled and netted.—It is a very handſome plant, grateful to horſes, and extremely uſeful in fixing driving ſand. Native of Siberia [z].

75. A ſmall ſhrub, only a hand in height. Leaves the length of the ſtem, with oval-oblong leaflets. Spike ſmooth. Banner only half the length of the keel, which is very large, broad and blunt. Calyx even, with very ſhort, awl-ſhaped teeth. Native of Spain [a].

76. This is an elegant plant, a foot in height, with a perennial root. Stems ſeveral, herbaceous, quite ſimple, the thickneſs of a pigeon's quill, ſtriated-angular, erect, very hairy; hairs white, long, ſoft, ſpreading very much. Root-leaves ſimple, petioled, elliptic; the next ternate; ſtem-leaves unequally pinnate, with three or four pairs of leaflets, which are an inch long, equal, oppoſite, lanceolate, mucronate, above very hairy, hoary green, beneath ſilky. Stipule ovate, membranaceous, purple, bifid, with lanceolate, acuminate ſegments. Spike ſilky, ſhining, many-flowered; ſeveral radical, ſeſſile, or on very ſhort peduncles, flowering firſt; thoſe on the ſtem have very long peduncles, nodding before the flowers open. Flowers crowded. Cauline peduncles axillary, elongated, higher than the ſtem, tomentoſe-hoary at top. Bractes ovate, acuminate, purple-aſh-coloured, green at the baſe, ſoftly hairy, eſpecially on the back and at the edge, concave, ſmooth within, twice as long as the calyx. Calycine ſegments briſtle-ſhaped, brown, three times as long as the baſe, upright, almoſt naked at top, but covered with long, cloſe, white hairs at bottom. Corolla purple, half the length of the calyx: banner orbiculate; wings minute; keel ſhorter than the banner. Germ orbiculate, very hairy at the baſe, villoſe-gray at top. Legume roundiſh, ſcarcely ſo big as a pepper-corn, wrinkled. Native of the Levant and Barbary [b]. See *Ebenus pinnata*, and n. 86.

Saint-foin.

77. *Root* perennial. *Stems* round, ſtriated, at firſt procumbent, in flower aſcending. *Stipules* in pairs, oval-lanceolate, terminated by a long point, with membranaceous edges, ſometimes fringed with a few hairs. *Peticles* furrowed above, ſlightly hairy. *Leaflets* eight to ten pairs, rather diſtant, and an odd one; lower elliptical, upper lanceolate or linear-lanceolate, all with a projecting point; young ones with the midrib beneath, and the margins fringed with hairs. *Peduncles* long, ſlightly hairy, bearing numerous flowers in a long *ſpike*, thickly imbricate upwards, each with an awl-ſhaped bracte, longer than the pedicle. *Calyx* ſhort, hairy, one fourth of the length of the flower, with five nearly equal awl-ſhaped teeth. *Corolla:* ſtandard oval, ſlightly emarginate, partly bent back, ſhorter than the keel, fleſh-coloured, ſtriated with red veins; wings not longer than the teeth of the calyx, hooked near the baſe, pale fleſh-colour; keel broad, bent with an obtuſe angle at the top, fleſh-coloured, with a deeper red beneath. *Legume* hemiſpherical, compreſſed, with wrinkled prominencies [c].

Native of England, France, Flanders, many parts of Germany, as the Palatinate, Bohemia, Sileſia; in Auſtria, Carniola, Switzerland, Savoy, Italy, Spain, Siberia; on hilly paſtures, and open downs, particularly in a calcareous ſoil. Flowering in june and july. With us, on Gogmagog hills, Newmarket heath, about Royſton, in Norfolk, on Saliſbury plain, &c. Cotſwold hills, and on all our calcareous hills in general.

It is much cultivated in ſeveral parts of Europe, in dry ſoils, for feeding cattle: with us in Cambridgeſhire, Hertfordſhire, on Epſom downs, Cotſwold hills, about Malton, &c. in Yorkſhire, and other hilly ſituations and calcareous ſoils. It yields great abundance of excellent fodder, but is ſuppoſed to be much ſooner damaged by rain, when cut, than any other ſort of plant, uſually mown for hay.

The old Engliſh names were *Medick Vetchling* or *Cock's-head*. The modern name of *Saint-foin* came from France, whence we originally had the ſeed.

In *German* it is Eſparzette, Eſper, Sparſette; der gemeine Suſsklee, Hahnenkopf, Hahnenkamm, Hahnenkammklee; groſſer Turkiſcher Klee, Turkiſcher Kleberklee, Schweizerklee, Wickenklee, Eſelſwicken, Heiligheu, Stachelheu, Stachelahre, Wiedhopfenkraut, Gurtriemen, Frauenſpiegel, rothe Ramſen, Sainfoin. In *Dutch* Haanekammetje's. In *Swediſh* and *Daniſh* Eſparſet & Sainfoin. In *French*, Sainfoin, Saintfoin, Eſparcette, Foin de Bourgogne. In *Italian* Cedrangola. In *Spaniſh* and *Portugueze* Pipirigallo.

Parkinſon ſays, (1640) it is known generally to be a ſingular food for cattle to cauſe them to give ſtore of milk.

Hartlib (1651) ſays we are to blame, that we have neglected Clover-graſs, Saint-Foine, Lucerne. He complains, that we want a place where we can find theſe ſeeds.

Walter Blith, in his Engliſh Improver Improved (1653), ſpeaks of it as a French graſs very little known, upon which he had not made a full experiment himſelf, having only ſown it that year, but as having been ſown in divers parts of England, as Cobham park in Kent, &c. upon chalky dry banks.

By a pamphlet printed in 1671 entitled "St. Foine improved," it appears, that divers places in this kingdom then already in part had received great benefit, and were likely to receive more, by the improvement of dry and barren ground, from ſowing of St. Foine.

Moriſon (1672) relates, that it may be cut three times in a year, that it is a food very grateful to cattle, that it delights principally in dry, ſandy and gravelly ſoils, and that its roots will penetrate among rocks, thriving and covering the ground where there is ſcarcely any earth; that it flowers in april on the Apennines, in may in Provence, in july in Brabant and Flanders, where it is frequently wild, and where many fields are ſown with it.

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[q] Hort. kew.
[r] Ibid.
[s] Moriſon.
[t] Linneus.
[u] Hort. kew.
[x] Linn. ſyſt.
[y] Loureiro.
[z] Linn. ſuppl.
[a] Linn. mant.

[b] Vahl.
[c] Woodw. Mſs.

Ray (hiſt. 1686) informs us, that it began not long ſince to be ſown among us for feeding cattle, to the very great advantage of many: that it furniſhes abundance of milk, whence it was deſervedly called *Polygalon* by Geſner; and that, as it delights in a dry, chalky ſoil, not favourable either to graſs or corn, it may be cultivated to great advantage.

From theſe paſſages we may infer that St. Foin was very little, if at all cultivated in 1651, that it probably crept in about that time, or ſoon after, and that in twenty years from this time it was pretty well eſtabliſhed, though by no means generally till towards the end of the laſt century: when Houghton, in his collection (p. 144. vol. 2.) ſays, that the cattle now (1697) live plentifully on the St. Foin growing on Epſom downs, which was formerly reckoned very barren ground. At the beginning of the preſent (1703) Liſle ſpeaks of it as commonly cultivated.

Mr. Marſhall, indeed, informs us, that it is ſaid (1789) to have been cultivated on the Cotſwold hills upwards of 150 years, which carries us back to 1639, a period ſomewhat earlier than I believe Saint-foin to have been cultivated in England, till I find better authority than mere tradition.

This important ſpecies, with ſeveral others of the genus, which in former editions ſtood under the name of *Onobrychis*, is wholly omitted in the eighth edition of Miller's Dictionary, wherein probably the author intended to have removed them to the article *Hedyſarum*.

78. Stems under ground woody, above ground ſcarcely any. The ſpike reſembles that of the foregoing ſpecies, but is whitiſh. Wings of the corolla ſcarcely longer than the calyx, or ſhorter than the ſtandard and keel. Leaflets linear[d], ſomewhat hoary and acute, twelve to fifteen pairs, the lower ones more diſtant; petioles ſtriated. Stipules lanceolate, ſharp, bifid, ſmooth, decaying. Peduncles longer than the leaves, naked, ſtriated. The lower flowers in the ſpike remote, the upper ones cloſe. Calyx equal, with long, briſtle-ſhaped ſegments[e].

Native of Provence, the county of Nice, and Siberia. Perennial.

79. Root perennial. Legume has equal, ſharp ſpines along the keel[f].—Native of France and Sicily. Cultivated in 1748, by Mr. Miller. It flowers in july and auguſt[g].

Root white, annual. Stems procumbent. Leaflets linear, acute: peduncles very long: flowers in ſpikes. Segments of the calyx briſtle-ſhaped, villoſe. Flower twice as long as the calyx; banner ovate, retuſe; keel ſhorter than the banner; wings very ſmall, ſcarcely the length of a line, one fourth of the length of the calyx. Legume larger than the flower, remarkably thorny, containing one or two ſeeds. It differs from the foregoing ſpecies, in its annual root, the minuteneſs of the wings in the corolla, and in the larger ſize of the legumes[h].

80. Root annual. Petioles equal in length. The ſpines along the keel of the legume are larger, lanceolate, ſerrate[i]. Native of the Levant.

81. The ſtructure of the fructification perfectly reſembles that of *H. lagopodioides* and *barbatum*; and it is ſingular, that after the flowering is over, each pedicel is bent back in an arch, the three larger hairy ſegments of the calyx being bent back, ſo that the ſmooth legume is hid, and wrapped up among the pedicels ſo as not to be viſible, perfectly as in the above-mentioned ſpecies. It differs, however, in having a lofty, upright, ſhrubby ſtem, almoſt arboreous; and pinnate leaves, with five, oblong leaflets[k].

Stem five feet high, round, tomentoſe, with diffuſed branches. Leaflets about three pairs, lanceolate, four inches long, quite entire, ſmooth, veined. Stipules lanceolate, very ſmall. Flower violet-coloured, in a cloſe, round, ſtraight, terminating ſpike, a foot long: bractes lanceolate, acuminate, ciliate, two-flowered. Peduncles long, hairy, bent in. Calyx very hairy, the five ſegments awl-ſhaped and ſpreading. Corolla: banner roundiſh, entire, converging; wings ſhorter, oblong; keel creſcent-ſhaped, of a length between the banner and wings. Legume long, ſlender, of about ſeven joints, which are roundiſh, connected by a dorſal thread, drawn back and plaited within the calyx; preſſed cloſe to the common peduncle, the proper pedicels being bent in archwiſe. This, though it differs in ſeveral circumſtances from *H. lagopodioides*, yet does not differ from it a great deal. It has almoſt always pinnate leaves, of two or three pairs of leaflets, and very rarely indeed ternate; whereas that has ternate and quinate leaves promiſcuouſly[l].—Native of India, China and Cochinchina.—Introduced in 1780, by Sir Joſeph Banks, Bart.[m]

82. Branches angular, villoſe. Leaflets three pairs, with an odd one, linear-lanceolate, a ſpan long and more, ſmooth on both ſides, almoſt equal, veined. Petiole the length of the leaf, villoſe. Petiolules very ſhort, hirſute. Stipules ovate, acuminate, nerved; with two others which are awl-ſhaped at each pair of leaves, longer than the petiolule. Raceme terminating, a ſpan long, upright, terminated by ſeveral lanceolate attenuated bractes four times as long as the flower, in form of a coma. Flowers crowded, on very ſhort pedicels. Loweſt bractes ovate, acuminate, permanent, nerved, villoſe; the upper ones deciduous, except that at the end. It ſeems to be diſtinct enough from H. crinitum, from which it differs in having narrower longer leaves, and a more ſlender raceme, terminated by bractes in form of a coma[n].

According to Jacquin, this very handſome plant has a perennial root; an upright, round ſtem, a foot and half high, leafy all over, cloſely hiſpid, with very minute white hairs; flowers at firſt red, but changing to blue, ſoon falling. Peduncle round, often as thick as a quill; pedicels in pairs, ſlender, ſpreading, three or four lines in length; both cloſely ſet with headed very acid hairs. Calyx hirſute and ciliate; tube bell-ſhaped; border reddiſh, ſpreading; ſegments lanceolate, acuminate, the two upper ones ſhorter. Banner roundiſh, quite entire, ſpreading; wings blunt, oppoſite to the banner; keel of the ſame form and in the ſame ſituation with the wings. Legume flexuoſe, with about five rounded, compreſſed, wrinkled joints lying on each other. Found in the Eaſt-Indies by Koenig, and in Guinea by Iſſert.

83. Stem low, hard. Stipules membranaceous, ſmall, acuminate. Leaflets ſeven or nine. Peduncles axillary, ſolitary, ſimple, mucronate, changing into round thorns, the length of the leaves, divaricating from the branch. Flowers three or four, alternate, pedicelled, placed below the tip of the peduncle. In figure it reſembles the ſecond Onobrychis of Cluſius, hiſt. 2. 239.[o] Native of the Levant.

84. Stem herbaceous, round, purpliſh, ſmooth. Leaflets about four pairs, on very ſhort petioles, oblong, acute, ending in a briſtle, entire, ſmooth, ſpreading, an inch in length, the upper ones a little larger. Flowers axillary, fleſh-coloured. Racemes a ſpan in length. It differs from *H. obſcurum* in being without any ſtipules.—Native of Japan[p].

85. Stem ſuffruticoſe, two feet high, branched. Leaflets ſmooth. Flowers dark violet-coloured, ſmall, in upright ſpikes. Legumes linear, acuminate, containing ſix ſeeds.—Native of Cochinchina.—The root is eſteemed to be deobſtruent, emmenagogue, and to create an appetite[q].]

86. Stem ſhrubby, ſix or ſeven feet high, dividing into ſeveral branches. Leaflets pale green above. Spikes ſeſſile, long and narrow. Flowers ſmall, bright purple. Legumes flat, ſmooth, jointed, about an inch long. [Thunberg and Vahl have given the ſame trivial name of ſericeum to other ſpecies. See n. 60. and 76.]

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[d] Linn. ſpec. & ſyſt.
[e] Ger. prov.
[f] Linn. ſpec.
[g] Hort. kew.
[h] Ger. prov.
[i] Linn.
[k] Linn. mant.
[l] Loureiro.
[m] Hort. kew.
[n] Vahl.
[o] Linn.
[p] Thunberg.
[q] Loureiro.

87. This is an annual plant, ſeldom riſing more than eight or nine inches high, ſending out ſeveral branches from the root, which are diffuſed and hairy. Leaflets ſmall, ovate, a little hoary. Spikes cloſe and ſhort. Corolla purple.

Theſe are both natives of La Vera Cruz, [and were cultivated by Mr. Miller in 1731.]

88. Stem about two feet high: the upper part branches into panicles of flowers, which are of a pale purple colour. Legumes lunulate, compreſſed, ſtanding oblique to the ſtem, one-ſeeded. Native of Campeachy.

89. Stem twining, and climbing to the height of ten or twelve feet. Leaves on pretty long footſtalks. Flowers dark purple, ſitting cloſe to the ſtalk. Native of La Vera Cruz.

Theſe were all ſent to Mr. Miller by Dr. Houſtoun, [and were cultivated by him in 1731, if not ſooner.]

90. Root perennial. Stem annual, erect, about two feet high. Leaflets long, rounded at the baſe where they are broadeſt, and narrowed all the way to a point; they are near three inches and a half long, and half an inch broad at the baſe, of a light green colour, and ſmooth: the two ſide ones ſit pretty cloſe to the ſtalk, but the middle one ſits upon a foot-ſtalk an inch long: the flowers are produced in long axillary ſpikes, growing erect; the lower part of the ſpike is but thinly ſet with flowers, but on the upper part they are diſpoſed very cloſe; they are ſmall, and of a bright yellow colour, ſeſſile, and ſucceeded by jointed pods, ſtraight on one ſide. Native of South Carolina, whence it was ſent to Mr. Miller by Dr. Dale.

PROPAGATION AND CULTURE.

1. This is propagated by ſeeds, which will frequently lie a year in the ground before they vegetate: ſow them therefore in pots filled with light earth, and plunge them into a moderate hot-bed: if the plants do not appear by the beginning of june, take the pots out of the bed, and place them where they may have only the morning ſun, and in the autumn plunge them into an old bed of tanner's bark under a frame; in ſpring plunge them into a freſh hot-bed, which will bring up the plants: when theſe are fit to remove, put them ſeparately into ſmall pots filled with light earth, and plunge them into a very moderate hot-bed, ſhading them from the ſun till they have taken new root; then gradually inure them to the open air, into which remove them in june, placing them in a ſheltered ſituation, where they may remain till the autumn; at which time plunge them into an old tan-bed under a frame, where they may be protected from froſt, and in mild weather enjoy the free air. In a warm border, by covering it in froſty weather, this plant will endure our winters, when they are not ſevere.

The other ſimple-leaved ſorts (2 to 18) and the two-leaved ſort, together with the greateſt part of the reſt, are too tender to thrive in the open air: for their native places of growth are the Eaſt or Weſt-Indies.

They are propagated by ſeeds, which muſt be ſown upon a hot-bed early in the ſpring. When the plants are fit to remove, they muſt be each planted in a ſeparate ſmall pot, filled with light earth; plunging them into a freſh hot-bed, where they ſhould be ſcreened from the ſun, till they have taken new root; after which they may be treated in the ſame manner as other tender plants: always keeping them in the bark ſtove or glaſs-caſe, otherwiſe they will not produce ſeeds, nor even always flower in England. They require as much air as poſſible in warm weather. Many of the ſorts ſeldom flower till the ſecond year.

35. The ſeeds may be ſown the beginning of april, in a bed of light freſh earth. When the plants are come up two inches high, they ſhould be tranſplanted where they are to remain for good; but if they are not too thick in the ſeed-bed, they may be ſuffered to remain there until the following autumn; at which time they ſhould be carefully taken up, and tranſplanted into the borders where they are deſigned to ſtand; for their roots generally run down very deep, ſo that it is not ſafe to remove them often. This plant produces its flowers about the ſame time of the year as the former, and if the ſeaſon proves favourable, perfects its ſeeds in autumn; and the roots will abide in the open air very well, reſiſting the ſevereſt cold, provided they are planted in a dry ſoil.

43. This may be raiſed in the manner directed for the ſimple-leaved ſorts: in ſummer the plants may be expoſed to the open air, but in autumn they muſt be placed under a frame to ſcreen them from froſt; the following ſpring ſome of theſe plants may be ſhaken out of the pots, and planted in a warm border, where, if the ſummer prove warm, they will flower, but theſe ſeldom perfect their ſeeds; therefore two or three plants ſhould be put into larger pots, and plunged into a moderate hot-bed, which will bring them early to flower, and if the glaſſes be kept over them in bad weather, theſe will ripen their ſeeds in autumn; and the roots will continue ſome years, if ſcreened from froſt in winter.

The 90th ſort may be treated in the ſame manner.

69. The common French Honeyſuckle, and other hardy ſorts, are propagated by ſowing their ſeeds in april, in a bed of light freſh earth; and when the plants come up, they ſhould be tranſplanted into other beds of the like earth, and in an open ſituation, at about ſix or eight inches diſtance from each other, leaving a path between every four rows, to go between them to hoe, and clear them from weeds. In theſe beds they may remain until michaelmas, then may be tranſplanted into the large borders of a parterre or pleaſure-garden, allowing them at leaſt three feet diſtance from other plants, amongſt which they ſhould be interſperſed, to continue the ſucceſſion of flowers; where they will make a fine appearance when blown, eſpecially the red ſort, which produces very beautiful flowers.

As theſe plants decay after they have perfected their ſeeds, ſo there ſhould annually be a freſh ſupply of plants raiſed, where they are deſired, for the old roots ſeldom continue longer. They are very proper ornaments for large borders, or to fill up vacancies among ſhrubs, but they grow too large for ſmall borders, unleſs their ſtalks are pruned off, leaving only two or three on each plant; which, if kept upright with ſticks, will prevent their hanging over other flowers.

They furniſh abundance of food agreeable to cattle, if not ſuffered to ſtand till the ſtalks are too hard and ſticky.

70, 71, 72. Should be ſown in april, where they are to remain, and require only to be thinned where they are too near, and to be kept clean from weeds.

77. *Saint-foin,*

If ſown upon a dry, gravelly or chalky ſoil, will continue eighteen or twenty years; but on a deep moiſt ſoil the roots will run down into the ground, and in the winter ſeaſon the moiſture will rot them, ſo that it ſeldom laſts above two years in ſuch places.

It is eſteemed one of the beſt ſorts of fodder for moſt cattle, and is a great improvement to chalky hills, upon which it ſucceeds better than in any other ſoil, and will continue many years, provided there be a ſurface of ſix or eight inches upon the chalk.

The beſt time for ſowing the ſeed is the beginning or middle of april, according to the ſeaſon, obſerving always to do it in dry weather, otherwiſe the ſeed will be apt to burſt, and never come up. The ſeed being large, the common allowance is four buſhels to an acre, but three is amply ſufficient. If it were ſown in rows, as directed for Lucerne, it would be a great improvement to the plants, for when theſe have room enough, they branch out on every ſide, and become very ſtrong; and by hoeing between them the natural graſs may be kept down, which, if permitted to grow, will rob the Saint-foin of its nouriſhment, and in time deſtroy it.

Saint-foin is frequently ſown with oats or barley, but this is a very bad method, for what is gained from the crop of corn, will be doubly loſt in the Saint-foin; and this generally holds true in moſt ſorts of Graſs ſeeds, for the corn growing over it ſo weakens the crop beneath, that it ſcarcely recovers its ſtrength in a year after.

The ground in which this ſeed is ſown ſhould be well ploughed, and made very fine. If it be ſown in drills, the drills ſhould be eighteen inches aſunder, and about an inch deep: if the plants come up too thick, they ſhould be hoed out to the diſtance of ſix or eight inches, when the ground is hoed to deſtroy the weeds.

The firſt year by no means feed the crop down, for the crown of the roots being then young and tender, cattle would eat it ſo low as entirely to deſtroy the roots; and if large cattle were let in upon it, they would trample it down ſo much as to prevent its ſhooting again: the firſt year therefore it ſhould be mowed, and this ſhould be done when it is in flower.

The ſooner it is carried off the ground, when cut, the better it will be for the plants. It does not require to be ſo often turned as other hay, for the ſtalks being large, they will not lie ſo cloſe in the cocks as to ferment; in catching weather therefore the cocks may be made large, and if they be turned and ſpread every other day, or once in three days, there will be little danger of its heating, ſo as to receive damage; but if it be ſpread, and much expoſed to rain and dew, the goodneſs of the hay will be exhauſted.

The crop will be fit to cut the firſt year towards the end of july, or at the beginning of auguſt. After this is cleared off, the roots will ſoon ſhoot again, and by the end of ſeptember, provided the ſeaſon be favourable, there will be a fine crop fit for feeding. Sheep will enrich the ground with their dung, and greatly ſtrengthen the roots; but they ſhould not be ſuffered to remain upon it longer than the middle of november the firſt year; and the ſucceeding years, when the crop is cut early, it ſhould not be fed longer than the middle of ſeptember.

Some cut two crops of Saint-foin hay in a year, but the latter crop is ſeldom of much value, and it weakens the roots. When ſeeds of Saint-foin are to be ſaved, the crop ſhould not be fed too low the foregoing autumn, for that will occaſion the ſtalks to be weak. I have made trial of two rows of plants ſtanding by each other, one of which I cut down in ſeptember with care, ſo as not to cut any buds for the future ſhoots; the other row I left untouched, and the following ſpring I found thoſe plants which were not cut put out earlier and ſtronger, and the ſtalks grew taller than thoſe which were cut, the plants produced a greater quantity of ſeeds, and the ſeeds were ripe a fortnight ſooner.

The hay made from plants ſaved for ſeed is no better fodder than chopped ſtraw or chaff; and to have the hay in perfection, it ſhould be cut before it begins to flower, when it abounds moſt in juice, and will nouriſh cattle much more than when it ſtands to be in full flower.

Saint-foin is exceeding good for horſes, and is eſteemed one of the beſt ſorts of food for moſt cattle, eſpecially in the ſpring, there being no danger attending it, as there is in Clover.

It produces abundance of milk, and butter made of it is very good. Since it has been introduced into England, many dairy farms have been ſet up, where it was formerly thought impracticable: and if this plant and Lucerne were properly cultivated to ſuch an extent as they might be, not only a much greater quantity of milch cows might be maintained, but a greater number of black cattle might be fattened, and more ſheep and hogs, which would be a great improvement to many eſtates in hilly countries; for by increaſing the live ſtock, there will be an addition of manure for dreſſing the land, in proportion.

[Saint-foin is allowed on all hands to be an admirable improvement on lime-ſtone rocks and chalk downs, which, in order to be cultivated to the greateſt advantage, ſhould be in this courſe, with no more arable than is neceſſary for the change. Thus if Saint-foin laſt ſixteen years, as it certainly will if properly managed, then ſixteen parts of the down ſhould be Saint-foin, and as many more parts as there are years neceſſary for tillage before the ground ſhould be ſowed with it again; ſuppoſe this period to be five years, the portions would then be

10. Saint-foin.
 1. Saint-foin pared and burnt, and under Turneps.
 1. Barley or Oats.
 1. Clover.
 1. Wheat.
 1. Turneps.
 1. Barley or Oats, and with this crop Saint-foin ſown again.

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Suppoſe each part was twenty-ſeven acres, then there would be two hundred and ſeventy acres of Saint-foin, and ſo on [r].

Saint-foin is alſo a vaſt improvement in thin, looſe, dry, ſandy loams, upon marl or chalk bottoms. Thin ſoils that wear out, or tire of Clover, are laid down to great advantage with it, will laſt twenty years, and pay the farmer as well as his beſt corn crops. If a flock of Sheep be an object of primary importance, this plant will afford them plenty of dry food for winter in hard weather. An acre of indifferent land will yield two tons of Saint-foin dry, and therefore twenty acres will ſerve 1000 Sheep for a month, ſuppoſing a Sheep eats three pounds of hay in a day, which is a large allowance. Now the expenſe of an acre of Saint-foin, including 14*s.* for rent, tithe and poor, is about one pound; whereas that of an acre of turneps will be two pounds ſeven ſhillings. Eight acres and a half of turneps then balance twenty acres of Saint-foin. Now 1000 Sheep will eat two acres and a half of turneps in a day, and therefore ſeventy-five acres will be required for a month: or at the loweſt calculation twenty-four acres, the expenſe of which is 56*l.* 8*s.* to be ſet againſt 20*l.* the expenſe of Saint-foin [s].

Some green food, however, ſhould be joined with the hay, for milch ewes or cattle. Green borecole, the turnep-rooted cabbage, or the Swediſh turnep, would anſwer this purpoſe; being hardy, and ſtanding above the ſnow.

One great advantage of this, in common with other artificial graſſes is, that even in a dry ſeaſon, from a ton to a ton and half of hay may be had from an acre, when natural meadows unwatered will produce only half a ton [t].

The moſt common time of ſowing Saint-foin is the ſpring; and it is even commonly reputed bad huſbandry to ſow it in the autumn, becauſe the froſt is apt to draw it out of the ground. It has however been ſown with ſucceſs in october along with wheat or rie, after winter tares. The crop was good, even the firſt ſeaſon, though it happened to be a very dry one; whereas it is well known that Saint-foin ſown in the ſpring yields a very ſcanty crop the firſt year, even when aſſiſted with manure.

At either ſeaſon Saint-foin is commonly ſown with corn; but it is ſtill doubtful whether the crop of artificial graſs may not be diminiſhed in proportion as the crop of corn flouriſhes. Other ſeeds are ſometimes ſown with it to give a crop the firſt year, as white clover, common red clover, and trefoil: of theſe the firſt is much the beſt [u].

The quantity of ſeed uſually ſown is at leaſt four buſhels, and ſome ſow five; though Mr. Miller is for ſowing a leſs quantity. In drilling two buſhels are ſufficient; but this is not a common practice with Saint-foin.

One of the beſt preparations for Saint-foin, is to take two crops of turneps in ſucceſſion, and then in the ſpring to ſow four buſhels of this ſeed with two buſhels of barley [x].

Coal-aſhes are a good dreſs for Saint-foin; and ſoot a ſtill better, in the quantity of from ten to twenty buſhels on an acre, laid on early in the ſpring [y].

Saint-foin is much troubled with a ſort of graſs which botaniſts call Bromus ſterilis, and farmers know by the name of Black-graſs. The ſcythe ſlips over it, the ſeed ripens very early, and is difficult to ſeparate from the Saint-foin ſeed. It may eaſily be pulled up by hand [z].

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[r] Young's Ann. 8. p. 73.

[s] Ibid. 2. p. 360.

[t] Ibid. 4. p. 62.

[u] Ibid. 11. p. 314.

[x] Ibid. 2. p. 359.

[y] Ibid. 4. p. 339.

When the crop begins to fail, or the land is wanted for ſomething elſe, a Saint-foin lay may be broken up ſucceſsfully for Potatoes; for the red-worm, which makes ſuch ravages if corn be ſowed without paring and burning, will not touch the Potatoes [a].

Modern writers affect to write *Sainfoin* as if it were wholeſome hay; whereas it is *Saint-foin* or holy hay, from a preſumption of its ſuperior excellence. Vulgar perſons confound it with Cinquefoil, from the ſound merely, for no two vegetables can be more different.

Hedysarum. See *Æſchynomene*, *Coronilla*, *Indigofera*, *Pterocarpus*.

HEISTERA. (*So named by Jacquin in honour of Laurence Heiſter, Archiater and Profeſſor of Medicine at Helmſtadt; author of* Hortus Helmſtad. 1730. Syſtema Plantarum, 1748. &c.)

Lin. gen. n. 535. *Reich.* 586. *Schreb.* 736. *Jacqu. amer.* 126. *Juſſ.* 260.

Claſſ. 10. 1. Decandria Monogynia.

Nat. order of *Holoráceæ.—Aurantia*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, bell-ſhaped, five-cleft, acute, ſmall, permanent.

Cor. *Petals* five, ovate, acute, concave, ſpreading.

Stam. *Filaments* ten, ovate, acute, flat, upright; alternately ſhorter. *Anthers* roundiſh.

Pist. *Germ* roundiſh, flatted. *Style* upright, ſhort. *Stigma* four-cleft, obtuſe.

Per. *Drupe* oblong, flatted at the tip; placed on a very large, coloured calyx.

Seed. *Nut* oval, obtuſe.

Obs. *It is allied to* Laurus.

ESSENTIAL CHARACTER.

Cal. five-cleft. *Petals* five. *Drupe* with a very large coloured calyx.

SPECIES.

1. Heiſtera coccinea.

Lin. ſpec. 1663. *ſyſt.* 403. *Reich.* 2. 283. *Jacqu. amer.* 126. *t.* 81. *pict.* 64. *t.* 122.

Borbonia fructu oblongo nigro, calyce coccineo. *Plum. gen.* 4.

DESCRIPTION, &c.

This is an inelegant branching tree, twenty feet in height. Leaves oblong, quite entire, drawing to a ſickle-ſhaped point, ſhining, on ſhort petioles, alternate, half a foot in length. Flowers ſmall, peduncled, axillary, with white corollas. Calyx in the flower ſmall and green, in the fruit ſcarlet, with a very large ſpreading limb, and ſhort, very blunt, roundiſh ſegments. Native of Martinico, in cloſe woods near torrents, flowering in february and march, and fruiting in june. The French inhabitants call it *Bois Perdrix*, birds being very fond of the fruit [b].

Heisteria. See *Polygala*.

Helenia & Heleniastrum. See *Helenium*.]

HELENIUM. (Ελενιον *of Dioſcorides. From Helen, the wife of Menelaus, who, as Heſychius ſays, cultivated a plant that deſtroyed ſerpents: according to others, this plant ſprung from her tears.*)

Lin. gen. n. 961. *Reich.* 1041. *Schreb.* 1299. *Juſſ.* 189. Heleniaſtrum. *Vaill. mem. acad.* 1720. Helenia. *Gærtn. t.* 169.

Claſſ. 19. 2. Syngeneſia Polygamia Superflua.

Nat. order of *Compoſitæ Diſcoideæ.—Corymbiferæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Common* ſimple, one-leafed, many-parted, ſpreading: *leaflets* about twenty, gradually drawing to a point. (oblong, ſharp, equal. *G.*)

Cor. *Compound* radiate: *Corollets* hermaphrodite, numerous in the diſk; *females* as many as there are parts of the calyx, in the ray.

Proper—of the *hermaphrodites* tubular, ſhorter than the calyx, five-toothed.—of the *females* ligulate, broader outwards, trifid at the tip, longer than the calyx.

Stam. in the hermaphrodites: *filaments* five, capillary, very ſhort. *Anther* cylindric, tubular.

Pist. in the hermaphrodites: *Germ* oblong. *Style* filiform, length of the ſtamens. *Stigma* bifid.—in the females: *Germ* oblong. *Style* very ſhort. *Stigma* bifid.

Per. none. Calyx unchanged.

Seeds in the hermaphrodites ſolitary, obovate, angular, crowned with a ſmall, five-toothed *calycle*:—in the females, very like the others.

Rec. naked, convex: the calycine *chaffs* only of the ray ſeparating the florets.

ESSENTIAL CHARACTER.

Cal. ſimple, many-parted. *Corollets* of the ray ſemitrifid. *Down* five-awned. *Recept.* naked, excepting the calycine chaffs in the ray.

SPECIES.

1. Helenium autumnale. *Smooth Helenium.*

Lin. ſpec. 1248. *ſyſt.* 769. *Reich.* 3. 837. *hort. cliff.* 418. *upſ.* 266. *Ait. hort. kew.* 3. 227. *Gron. virg.* 126.

Helenia autumnalis. *Gærtn. fruct.* 2. 438.

Chryſanthemum americanum, &c. *Mor. hiſt.* 3. 24. *n.* 82. *ſ.* 6. *t.* 6. *f.* 74.

Aſter floridanus, &c. *Pluk. phyt. t.* 372. *f.* 4.

A. luteus alatus. *Corn. canad.* 52. *t.* 63.

Leaves very ſmooth.

[2. Helenium pubeſcens. *Downy Helenium.*

Ait. hort. kew. 3. 227.

Leaves pubeſcent.

DESCRIPTIONS, &c.

1. Miller, following Vaillant, has made two ſpecies out of this: the firſt with entire leaves, which he names *Helenium autumnale*; the ſecond with ſerrate leaves, which he names *H. latifolium*. The firſt is the Heleniaſtrum folio longiore & anguſtiore; the ſecond is, H. fol. breviore & latiore of Vaillant. Miller thus deſcribes them.]

Theſe plants riſe to the height of ſix or ſeven feet in good ground; the roots, when large, ſend up a great number of ſtalks, which branch toward the top; thoſe of the firſt have ſmooth leaves, three inches and a half long, and half an inch broad in the middle, with entire edges, ſitting cloſe to the ſtalks, and from their baſe is extended a leafy border along the ſtalk, ſo as to form what was generally termed a winged ſtalk, but Linneus calls it a decurrent leaf; the upper part of the ſtalk divides, and from each diviſion ariſes a naked peduncle about three inches long, ſuſtaining one yellow flower at the top, ſhaped like a Sun-flower, but much ſmaller, having long rays, which are jagged pretty deep into four or five ſegments; theſe appear in auguſt, and there is a ſucceſſion of flowers on the plants till the froſt puts a ſtop to them.

The ſecond has the appearance of the firſt, but the leaves are not three inches long, and are more than an inch broad in the middle, ending in acute points, and are ſharply ſerrate on their edges. The flowers ſtand upon ſhorter peduncles, growing cloſer together, for the ſtalks of this do not branch near ſo much as thoſe of the other; they both flower at the ſame ſeaſon.

There is alſo another with leaves as narrow as the firſt, which are acutely indented on the edges. The ſtalks branch at the top ſomewhat like thoſe of the firſt, but the middle flowers have much ſhorter foot-ſtalks than thoſe which branch on the ſide, and are garniſhed with ſmall leaves, almoſt to the top; but I am not certain if this is a diſtinct ſpecies, or only a variety which has accidentally riſen from the ſeeds of the other.

Theſe plants are natives of America; the ſeeds of both I have received from Virginia and New-England, where they grow wild in great plenty in the woods, and other ſhady places where the ground is moiſt.

[Helenium autumnale was cultivated in the botanic garden at Chelſea in 1729.

2. This alſo is native of North America; it was introduced in 1776, by Mr. William Malcolm, and flowers in auguſt and ſeptember [c].]

PROPAGATION AND CULTURE.

They may be propagated by ſeeds, or by parting their roots; but the latter is generally practiſed in this country, becauſe they ſeldom perfect their ſeeds here;

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[z] Young's Ann. 7. p. 575.

[a] Ibid. 3. p. 83.

[b] Jacquin.

[c] Hort. kew.

but if the ſeeds are procured from abroad, they ſhould be ſown the beginning of march on a border of light earth; and if the ſeeds ſhould not come up the firſt year, the ground ſhould not be diſturbed, becauſe they often remain a whole year in the ground before the plants come up; in which caſe there is nothing more to be done, but to keep the ground clear from weeds, and wait until the plants riſe. When they appear, if the ſeaſon proves dry, they muſt be often watered, which will greatly forward their growth; and where the plants come up too cloſe to each other, they ſhould be thinned, and tranſplanted out into beds a foot aſunder every way, being careful to ſhade them until they have taken root, as alſo to water them in dry weather. In autumn they may be tranſplanted where they are to remain, and the following ſummer they will produce their flowers, which will continue till the froſt prevents them; and their roots will abide many years, and afford many offsets, by which they may be increaſed.

The beſt ſeaſon to tranſplant the old roots, and to part them for increaſe, is in the end of october, when their flowers are paſt, or the beginning of march, juſt before they begin to ſhoot; but if the ſpring ſhould prove dry, they muſt be duly watered, otherwiſe they will not produce many flowers the ſame year; theſe plants ſhould not be removed oftener than every other year, if they are expected to flower ſtrong; they delight in a ſoil rather moiſt than dry, provided it be not too ſtrong, nor holds the wet in winter; but if they are planted in a dry ſoil, they muſt be often and plentifully watered in dry weather, to make them produce plenty of flowers.

HELENIUM. See *Inula* [& *Helianthus*.

HELIANTHEMOIDES. See *Turnera*.

HELIANTHEMUM. See *Ciſtus*, *Portulaca*, *Turnera*.

HELIANTHUS. (*From* Ηλιος, *the ſun, and* ανθος, *a flower.*)
Lin. gen. n. 979. *Reich.* 1060. *Schreb.* 1322. *Juſſ.* 189. *Gærtn. t.* 172. Corona ſolis. *Vaill. mem. acad.* 1720. *f.* 12. 45. *Tournef. t.* 279. *Dill. elth.* 94.
Claſſ. 19. 3. *Syngeneſia Polygamia Fruſtranea.*
Nat. order of *Compoſitæ Oppoſitifoliæ.—Corymbiferæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Common* imbricate, ſomewhat ſquarroſe, expanded: *ſcales* oblong, broadiſh at the baſe, gaping every where at the tips.

COR. *Compound* radiate: *corollets* hermaphrodite, very numerous in the diſk: *females* fewer, much longer in the ray.
Proper: of the hermaphrodites cylindric, ſhorter than the common calyx, bellying at the baſe, orbicular, depreſſed: *border* five-toothed, ſharp, ſpreading:—of the *females* ligular, lanceolate, quite entire, very long.

STAM. in the hermaphrodites: *filaments* five, curved, inſerted below the belly of the corollet, the length of the tube. *Anther* cylindric, tubular.

PIST. in the hermaphrodites: *germ* oblong: *ſtyle* filiform, length of the corollet: *ſtigma* two-parted, reflex.—in the *females: germ* very ſmall: *ſtyle* and *ſtigma* none.

PER. none. *Calyx* unchanged.

SEEDS in the hermaphrodites ſolitary, oblong, blunt, four-cornered, compreſſed at the oppoſite angles; the inner ones narrower, crowned with two lanceolate, acute, deciduous chaffs:—in the *females* none.

REC. chaffy, large, flat: *chaffs* lanceolate, acute, two ſeparating each ſeed, deciduous.

ESSENTIAL CHARACTER.

Cal. imbricate, ſomewhat ſquarroſe. *Down* two-leaved. *Recept.* chaffy, flat.

SPECIES.

1. Helianthus annuus. *Annual Sun-flower.*
Lin. ſpec: 1276. *Reich.* 3. 883. *vir. cliff.* 88. *hort. cliff.* 419. *upſ.* 268. *Mill. illuſtr. ic.*
Helenium indicum maximum. *Bauh. pin.* 276.
Flos ſolis. *Ger.* 612. *f.* 1, 2. & 613. *f.* 3. *emac.* 751. *f.* 1. *Raii hiſt.* 334.
Chryſanthemum peruvianum, ſ. Flos Solis. *Park. parad.* 295. *t.* 297. *f.* 2.—indicum maximum annuum non ramoſum. *Mor. hiſt.* 3. 19. *ſ.* 6. *t.* 6. *f.* 36.
Herba maxima. *Dod. pempt.* 264. *Bauh. hiſt.* 3. 107.
Chryſis. *Renealm. ſpec.* 84. *t.* 83.
All the leaves cordate, three-nerved, peduncles thickening, flowers drooping.

[2. Helianthus indicus. *Dwarf Annual Sun-flower.*
Lin. ſyſt. 781. *Reich.* 3. 383. *mant.* 117.
Corona ſolis minor 3. *Tabern. hiſt.* 1147.
All the leaves cordate, three-nerved, peduncles equal, calyxes leafy.]

3. Helianthus multiflorus. *Perennial Sun-flower.*
Lin. ſpec. 1277. *Reich.* 3. 883. *hort. cliff.* 419. *upſ.* 268. *Gærtn. fruct.* 443. *Curtis magaz. t.* 227.
Helenium indicum ramoſum. *Bauh. pin.* 277.
Chryſanthemum americanum majus perenne, Floris Solis foliis & floribus. *Mor. hiſt.* 3. 23. *ſ.* 6. *t.* 7. *f.* 59. *Pluk. phyt. t.* 159. *f.* 2.
Corona ſolis minor femina. *Tabern. ic.* 764.
Flos Solis minor foemina. *Ger.* 613. *f.* 4.
Lower leaves cordate, three-nerved, upper ones ovate.

4. Helianthus tuberoſus. *Tuberous-rooted Sun-flower*, or *Jeruſalem Artichoke.*
Lin. ſpec. 1277. *Reich.* 3. 884. *hort. cliff.* 419. *upſ.* 268. *Gron. virg.* 129. *Jacqu. hort.* 2. 75. *t.* 161.
Helenium indicum tuberoſum. *Bauh. pin.* 277.
Chryſanthemum latifolium braſilianum. *Bauh. prodr.* 70.
Ch. perenne majus fol. integris, americanum tuberoſum. *Mor. hiſt.* 3. 23. *ſ.* 6. *t.* 6. *f.* 57.
Flos ſolis farneſianus. *Col. ecphr.* 2. 11. *t.* 13.
Flos ſolis pyramidalis. *Ger. emac.* 753. *Raii hiſt.* 335.
Battatas de Canada. *Park. parad. t.* 517. *f.* 4.
Leaves ovate-cordate, triple-nerved.

5. Helianthus decapetalus. *Ten-petalled Sun-flower.*
Lin. ſpec. 1277. *Reich.* 3. 884.
Stem ſmooth at bottom: leaves lanceolate-cordate, triple-nerved: ray of the flower ten-petalled; peduncles ſcabrous.

[6. Helianthus frondoſus.
Lin. ſpec. 1277. *Reich.* 3. 884. *amœn.* 4. 290.
Calyx ſquarroſe, waved, leafy; rays eight-petalled; leaves ovate; ſtem ſcabrous at bottom.]

7. Helianthus ſtrumoſus. *Carrot-rooted Sun-flower.*
Lin. ſpec. 1277. *Reich.* 3. 884. *hort. cliff.* 420.
Chryſanthemum canadenſe ſtrumoſum. *Mor. hiſt.* 3. 23.
Root fuſiform.

8. Helianthus giganteus. *Gigantic Sun-flower.*
Lin. ſpec. 1278. *Reich.* 3. 885. *Gron. virg.* 129. *Loureiro cochinch.* 509.
Chryſanthemum virginianum elatius anguſtifolium, viride. *Mor.* 3. 24. *ſ.* 6. *t.* 7. *f.* 66.
β. C. virg. elat. ang., caule hirſuto viridi. *Pluk. alm. t.* 159. *f.* 5.
Leaves alternate, lanceolate, ſcabrous, ciliate at the baſe, ſtem ſtiff, ſcabrous.

9. Helianthus altiſſimus. *Tall Sun-flower.*
Lin. ſpec. 1278. *Reich.* 3. 885. *Jacqu. hort.* 2. *t.* 160.
Ch. virgin. altiſſimum, puniceis caulibus. *Mor. t.* 7. *f.* 67.
Leaves alternate, broadiſh, lanceolate, ſcabrous, petioles ciliate, ſtem ſtiff, ſmooth.

10. Helianthus anguſtifolius.
Lin. ſpec. 1279. *ſyſt.* 781. *Reich.* 3. 886. *Gron. virg.* 129.
Leaves alternate, linear.

11. Helianthus divaricatus. *Rough-leaved Sun-flower.*
Lin. ſpec. 1279. *Reich.* 3. 886.
Ch. virg. repens, fol. aſperis binatim ſeſſilibus acuminatis. *Mor.* 22. *n.* 66.
Leaves oppoſite, ſeſſile, ovate-oblong, three-nerved, panicle dichotomous.

12. Helianthus atrorubens. *Dark-red Sun-flower.*
Lin. ſpec. 1279. *Reich.* 3. 886. *Gron. virg.* 128. *Dill. elth.* 111. *t.* 94. *f.* 110. (Corona ſolis).
Leaves oppoſite, ſpatulate, crenate, triple-nerved, ſcabrous; calycine ſcales erect, the length of the diſk.

DESCRIPTIONS, *&c.*

[Theſe are hardy herbaceous plants, moſt of them tall and large, and all perennial, except the two firſt.

The leaves rough, in ſome oppoſite, in others alternate. The flowers in general very large, and yellow; in the laſt, the flowers are ſmaller, and the diſk is of a duſky red colour. They are all natives of America: the annual ſorts ripen ſeeds, the perennials not.

1. Root annual. Stem ſingle or branched, from five or ſix to ten or fourteen feet in height, and in hot climates twenty or more; when vigorous, the ſize of a man's arm. Leaves alternate, a ſpan or a ſpan and half in length, and almoſt as much in breadth, rough, ſerrate, acuminate, hanging down at the end, on long petioles. Flower ſingle, (ſometimes ſeveral,) nodding, a foot or more in diameter. Gerarde mentions one that flowered in his garden, of ſixteen inches in breadth, and weighing three pounds two ounces. The ſemi-florets or ligulate floſcules in the ray are uſually of a fine golden colour, and near an inch in breadth, ending in a point which is commonly bent back. The florets or tubular floſcules in the ample diſk are of a darker colour, cloſely wedged together, and very numerous. The ſeeds are numerous (Bauhin mentions 2362 in one flower), black, variegated or white, and when theſe have quitted their cells, the receptacle looks like a honeycomb. The great ſize of the whole compound flower recommends it to the ſtudent for the examination of the floſcules, which in the claſs Syngeneſia are uſually very ſmall. The whole plant, and particularly the flower, exudes a thin, pellucid, odorous reſin, reſembling Venice turpentine.] The ſeeds are excellent food for domeſtic poultry.

Varieties are—double flowers, and deep yellow, and ſulphur-coloured. [This flower becomes double by the change of tubular into ligular florets, like thoſe in the ray, only ſmaller.

Gerarde obſerves, that it was called *Indian Sun-flower*, or *Flower of the Sun*, *Corona Solis* and *Sol indianus*, becauſe it reſembles the radiant beams of the ſun. As to its turning with the ſun, it is a vulgar error; Gerarde ſays he could never obſerve it; and I have ſeen four flowers on the ſame ſtem pointing to the four cardinal points.

Native of Mexico and Peru; flowering from june to october.

2. This perhaps may only be a variety of the foregoing, though conſtant: but the leaves are convex above in the diſk, and of a darker green. The peduncles are leſs thickened at top, or rather of an equal thickneſs every where, whence the flowers nod leſs. The ſcales of the calyx, except the inmoſt row, grow out into petioled pendulous leaflets[a]. We do not know the native country of this, but there is little doubt of its coming from Mexico or Peru.—Linneus ſays that it is cultivated in Egypt.—It grows only from eighteen inches to three feet in height.—Introduced, according to the Kew catalogue, by Chevalier Thunberg in 1785.

3. Stem and peduncles ſcabrous. Leaves cordate-ovate. Calyxes looſely imbricate, neither ſquarroſe nor drooping, conſiſting of forty to fifty ſcales[b].—Stems many, upright, from five or ſix feet to eight or nine in height, branching, the ſtem and each branch terminated by a flower, the principal one ſometimes nine or ten inches in diameter, the lateral ones gradually ſmaller. Leaves ſome oppoſite, others alternate. There is a conſtant ſucceſſion of flowers from july to november.—It is a native of Virginia, and was introduced before 1699, by William Farmer Lord Lemſter[c].

4. Stems ſeveral, rough, hairy, ſtreaked, from ten or twelve to ſixteen feet in height, the ſize of a child's arm. Leaves alternate, light green, rough, pointed, eight inches broad, and ten or eleven inches long, deeply ſerrate, ſmaller towards the top. Branches many, long, from bottom to top. Flowers terminating, ſmall; florets in the ray twelve or thirteen. Theſe ſeldom blow before october, and in ſome ſeaſons they do not expand at all. The ſeeds never ripen here.—Roots creeping, with many tubers cluſtered together, thirty, forty or fifty from one plant, meaſuring a peck, or in good ſoils half a buſhel; they are like the common Potatoe, red on the outſide, and very irregular in their ſhape, the ſize of a man's fiſt at the biggeſt[d].

Mr. John Goodyer received, in 1617, two ſmall roots from Mr. Franquevill of London, no bigger than hen's eggs; the one he planted, and the other he gave to a friend. His brought him a peck of roots, wherewith he ſtored Hampſhire. This note is dated the 17th of october 1621: and Johnſon obſerves that his friend took it preſently upon the firſt arrival into England. If this were the era of the firſt introduction of Jeruſalem Artichoke, it ſeems ſurpriſing, even allowing for the facility with which it is encreaſed, that ſo ſoon as the year 1629, or even earlier, it ſhould have become ſo common in London, that even the moſt vulgar began to deſpiſe it: whereas when firſt received among us, it was, as Parkinſon ſays, a dainty for a queen[e]. By the latter expreſſion, one would ſuppoſe that it had been known here in the time of Queen Eliſabeth.—Our anceſtors boiled them tender, and then being peeled, ate them ſliced and ſtewed with butter, wine and ſpices—thus, ſays Parkinſon, they were a diſh for a Queen, being as pleaſant as the bottom of an Artichoke: but the too frequent uſe, eſpecially being ſo plentiful and cheap, hath rather bred a loathing than a liking of them. They alſo baked them in pies, with marrow, dates, ginger, raiſins, ſack, &c.—This root probably got into diſuſe, from a notion of its flatulent quality. The Potatoe ſeems to be more nutritious and wholſome; it is not neceſſary therefore now to inforce the cultivation of Jeruſalem Artichoke as a general article of food, but it certainly makes an agreeable variety at good tables. There is no better reaſon for its common Engliſh name, than that the root, when boiled, has the taſte of an Artichoke bottom: Parkinſon therefore would have it called Potatoes of Canada, becauſe the French brought them firſt from Canada into theſe parts. Not that Canada is their original country, for they are unqueſtionably the produce of a hot climate, being natives of Braſil.

5. This reſembles *H. multiflorus*, or common Perennial Sun-flower, very much; but it differs in having the ſtem, which ſcarcely attains the height of a man, ſcabrous, but ſmooth at bottom. The leaves more lanceolate-ovate, not cordate, oppoſite, and ciliate at the baſe. The corolla with not more than ten florets in the ray. The calyx has twenty ſcales, is ſquarroſe, hiſpid, the leaflets not waved, and very ſeldom growing out into leaves.—Native of Canada[f]. It was cultivated in 1759, by Mr. Miller[g].

6. This is allied to the foregoing ſpecies. In Lin. ſpec. the ſtem is ſaid to be ſmooth at bottom. Native of Canada.

7. Roots white and fleſhy. Stems ſeveral, nine or ten feet high, round, rough, ſomewhat hirſute, ſtreaked, ſubdivided into numerous branches. Leaves alternate, a hand long, an inch or more broad, acuminate, rough, dark green, ſlightly notched about the edge. Flowers terminating, in corymbs, petals pale yellow, ending in a bifid point: leaflets of the calyx produced into long leaves. The roots are bitteriſh, aromatic, and not diſagreeable: they are eaten by the Canadians, among whom this plant grows wild.——It was cultivated in 1759, by Mr. Miller, and flowers from july to ſeptember[h].

8. Stem ten feet high, green, hiſpid or ſcabrous. Leaves by no means triple-nerved, ſerrate, ſcabrous on both ſides, ending in ciliate petioles. Peduncles ſcabrous, hiſpid. Uſually about twenty florets in the ray, bifid at the end. The firſt two leaves of the branches are oppoſite, and have the appearance of ſtipules. The flowers nod more in the night than in the day. Native of Virginia and Canada[i]. Loureiro ſays, it is cultivated in China and Cochin.—Cultivated here in 1714, by the Dutcheſs of Beaufort. It flowers in ſeptember and october[k].

9. Siſter of the foregoing, of the ſame ſtructure and height; but the leaves are in breadth one fourth (not

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[a] Linn. mant.
[b] Linn. ſpec.
[c] Moriſon in Hort. kew.

[d] Goodyer in Ger. emac.
[e] Parad. printed 1629.
[f] Linn. ſpec.
[g] Hort. kew.
[h] Ibid.
[i] Linn. ſpec.
[k] Hort. kew.

one ſixth) of the length, different in their ſerratures, triple-nerved at the baſe, petioled, almoſt ovate-lanceolate. The whole ſtalk not only ſmooth and even, but purpliſh. Leaflets of the calyx ſhorter, and not ſo copious. Uſually ſixteen florets in the ray. The chaffs in this are green, in the foregoing blackiſh, whence the diſk in that, before the flower unfolds, is black; in this, green. Native of Pennſylvania[l]. Cultivated in 1739, by Mr. Miller. It flowers in auguſt and ſeptember[m].

10. Stem purpliſh, a foot and half in height. Leaves linear, acuminate, ſcabrous, rolled back at the edge, pale underneath. Diſk of the corolla brown; ray deep yellow, emarginate[n].—Native of Virginia.

11. Stem ſcarcely the height of a man, extremely even at top, but with ſcattered rough hairs, purple, with a glaucous bloom. Flowers in a panicle, with trichotomous branches, yellow, ſmall, peduncled, with the middle peduncle ſimple. Peduncles ſomewhat ſcabrous. Native of North America[o].—Cultivated in 1759, by Mr. Miller. It flowers from auguſt to october[p].

12. Stem commonly ſingle, about the ſize of a ſwan's quill at bottom, from eighteen inches to three feet and more in height, round, duſky purple, rough, with abundant whitiſh hairs. Root-leaves flat, hairy, ſmaller than thoſe on the ſtem, which are twiſted and waved, eſpecially towards the end, rough, with frequent hairs, and on the lower ones particularly with ſmall tubercles. Flowering branches divaricate. The diſk of the flower dark red: floſcules in the ray yellow, marked with a few lines, pointed and entire, ſometimes in very old flowers divided into ſegments.

Native of Carolina[q] and Virginia.—It flowers in ſeptember and october, and continues two or three years. —Cultivated in the Eltham garden in 1732, if not earlier.]

PROPAGATION AND CULTURE.

The annual ſorts (1, 2.) are eaſily propagated by ſeeds, ſown in march upon a bed of common earth, and when the plants come up, thin them where they are too cloſe, and keep them clean from weeds; when the plants are grown ſix inches high, they may be taken up with balls of earth to their roots, and planted into the large borders of the pleaſure-garden, obſerving to water them till they have taken new root; after which they will require no other care, but to keep them clear from weeds.

In july the great flowers upon the tops of the ſtems will appear, amongſt which, the beſt and moſt double flowers of each kind ſhould be preſerved for ſeeds; for thoſe which flower later upon the ſide branches are neither ſo fair, nor do they perfect their ſeeds ſo well, as thoſe which are firſt in flower: when the flowers are quite faded, and the ſeeds are formed, you ſhould carefully guard the heads from the ſparrows, which will otherwiſe devour moſt of the good ſeeds; and about the beginning of october, when the ſeeds are ripe, you ſhould cut off the heads with a ſmall part of the ſtem, and hang them up in a dry airy place for about a month, by which time the ſeeds will be perfectly dry and hard; when you may eaſily rub them out, and put them into bags or papers, preſerving them from vermin until the ſeaſon for ſowing them.

The perennial ſorts rarely produce ſeeds in England, but moſt of them increaſe very faſt at their roots, eſpecially the creeping rooted kinds, which ſpread too far for ſmall gardens. The third ſort, which is the moſt common in the Engliſh gardens, is the largeſt and moſt valuable flower, and is a very proper furniture for large borders in great gardens, as alſo for boſquets of large growing plants, or to intermix in ſmall quarters with ſhrubs, or in walks under trees, where few other trees will thrive; it is alſo a great ornament to gardens within the city, where it grows in defiance of the ſmoke, better than moſt other plants; and for its long continuance in flower, deſerves a place in moſt gardens, for the ſake of its flowers for baſons, &c. to adorn halls and chimneys, in a ſeaſon when we are at a loſs for other flowers. It begins flowering in july, and continues till october; there is a variety of this with very double flowers, which is now become ſo common in the Engliſh gardens, as to have almoſt baniſhed the ſingle ſort from hence.

They are all very hardy, and will grow in almoſt any ſoil or ſituation; they are propagated by parting their roots into ſmall heads, which in one year's time will ſpread and increaſe greatly. The beſt ſeaſon for this work is in the middle of october, ſoon after the flowers are paſt, or very early in the ſpring, that they may be well rooted before the droughts come on; otherwiſe their flowers will be few in number, and not near ſo fair, and by this means their roots will be weak; but if they are planted in october, you will ſave the trouble of watering them; their roots being ſurely fixed before the dry weather, they will need no other trouble than to clear them from weeds.

4. The Jeruſalem Artichoke is cultivated for the roots, which are by ſome people much eſteemed.

Theſe are propagated by planting the ſmaller roots, or the larger ones cut in pieces, obſerving to preſerve a bud to each ſeparate piece, either in the ſpring or autumn, allowing them a good diſtance, for their roots will greatly multiply; the autumn following, when their ſtems decay, the roots may be taken up for uſe. They ſhould be planted in ſome remote corner of the garden, for they are very unſightly while growing, their roots over-run every thing, and they cannot eaſily be deſtroyed.

[When deſired for a crop, the ſets ſhould be planted in an open part of the kitchen garden, in rows three feet or more aſunder, at leaſt eighteen inches diſtant from each other, and four or five inches deep. The beſt time for this is the latter end of march. A light ſoil ſuits them beſt. Some perſons cut the ſtalks half way down, at the end of july or the beginning of auguſt; becauſe they ſhade the ground too much, and from their great height are apt to be blown down. They may be taken up for preſent uſe in ſeptember, and the whole crop may be houſed in october. If kept in ſand in a dry place, they will continue the whole winter.

HELIANTHUS LÆVIS. See *Buphthalmum helianthoides.*

HELICHRYSOIDES. See *Stoebe.*

HELICHRYSUM. See *Conyza* & *Gnaphalium.*

HELICONIA. (Ελικων, *is a muſical ſtringed inſtrument; alſo the name of a mountain in Bœotia. The Muſes were called* Ελικωνιαδες, *from one of theſe.*)

Lin. gen. Reich. n. 310. *Schreb.* 403. *Juſſ.* 61.
Palilia. *auth. D. Allamand.* Bihai. *Plum.* 3. Muſa. *Brown.* 364.

Claſſ. 5. 1. Pentandria Monogynia.
Nat. order of *Scitamineæ.*—Muſæ, *Juſſ.*

GENERIC CHARACTER.

CAL. *Spathes common and partial* alternate, diſtinct, with hermaphrodite flowers. *Perianth* none.

COR. *Petals* three, oblong, channelled, erect, acute, equal. *Nectary* two-leaved: one leaflet nearly equal to the petals; the other very ſhort, channelled, hooked, oppoſite.

STAM. *Filaments* five, (or ſix. *Adanſon*), filiform. *Anthers* long, erect.

PIST. *Germ* inferior, oblong. *Style* ſhorter than the ſtamens. *Stigma* long, ſlender, curved, with a terminating head.

PER. *Capſule* oblong, truncate, three-ſided, three-celled.

SEEDS ſolitary, oblong.

OBS. *Diſtinct from Muſa by a tricoccous capſule.—Doubtful whether it ſhould not be transferred to the claſs Hexandria.*

ESSENTIAL CHARACTER.

Spathes. Perianth none. *Cor.* three-petalled. (irregular. *Sw.*) *Nect.* two-leaved. *Peric.* tricoccous. *Seeds* ſolitary. (*Capſule* fleſhy, three-celled. *Sw.*)

SPECIES.

1. Heliconia Bihai. *Baſtard* or *Wild Plantain.*
Lin. ſyſt. 245. *ſuppl.* 157. *mant.* 211. *Reich.* 1. 573. *Ait. hort. kew.* 1. 284. *Swartz. obſ.* 96. *t.* 5. *f.* 2.
Muſa Bihai. *Lin. ſpec.* 1477. *Brown. jam.* 364. 3. *Sloan. jam.* 147. 8.

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[l] Linn. ſpec.
[m] Hort. kew.
[n] Linn. ſyſt.
[o] Linn. ſpec.
[p] Hort. kew.
[q] Dillenius.

Bihai. *Plum. gen.* 50. 3.
Leaves and ſpadix radical, ſpathes diſtich, cordate, nectary ventricoſe, bifid at the tip.

2. Heliconia pſittacorum.
Lin. ſyſt. 245. *ſuppl.* 158. *Swartz. obſ.* 98.
H. Bihai. *Lin. gen.* & *Aubl. guian.*
Palilia. *Allamand.*
Leaves on the ſtem rounded at the baſe, ſpadix terminating, flexuoſe, ſpathes lanceolate, nectary lanceolate, concave, entire.

3. Heliconia hirſuta.
Lin. ſyſt. 245. *ſuppl.* 158.
Leaves rounded at the baſe, ſimply nerved, very ſmooth, infloreſcence hirſute, ſpadix flexuoſe, nectary lanceolate, adnate.

DESCRIPTIONS, &c.

1. This is a very large herbaceous plant, from ten to twelve feet in height. Leaves oblong, narrower at both ends, entire, marked with parallel lines, erect, thick, and very ſmooth. Petioles the length of the leaves or more, round, thick, channelled above. Scape upright, the length of the petioles, round, thick, ſmooth. Spadix ſimple, upright. Common ſpathes ſeveral (eight to ten), rigid, cordate, embracing, from erect ſpreading, acuminate, diſtich, yellowiſh brown. Flowers in bundles concealed within each ſpathe: partial ſpathes membranaceous, whitiſh, the length of the flowers, which are diſtinct, ſubſeſſile, pale or greeniſh yellow. Corolla cohering at the baſe, unequal, curved and recurved, as it were two-lipped: the two upper petals lanceolate, acute, a little reflex at the tip, below the middle converging, and towards the baſe coaleſcent with the lower petal, whitiſh at the baſe: lower petal ſcarcely longer than the upper ones, lanceolate, concave, a little recurved, entire and acuminate at the tip, with its baſe embracing the nectary behind. Nectary two-leaved: the hinder leaflet of the ſame length with the corolla, broad-lanceolate, concave, above the middle ventricoſe underneath, trifid at the tip, the edges membranaceous, converging, bent in; it incloſes the filaments, and is filled with nectareous juice at the baſe; the leaflet in front is very minute, lanceolate, and faſtened to the anterior petal of the corolla. Filaments five, almoſt the length of the corolla, below the middle united into a tube open in front, glued to the hinder leaflet of the nectary. Anthers linear, acute, two-celled, yellow, frequently ſpiral. Germ three-cornered, attenuated at the baſe, retuſe at the tip, white. Style filiform, three-ſided. Stigma triangular, perforated, yellow, obtuſe, bent in. Capſule fleſhy, becoming black.

Native of the Weſt-Indies, in moiſt mountain woods, flowering in ſpring[a]. This beautiful plant grows wild in moſt of the cooler mountains of Jamaica, and thrives very luxuriantly in every rich and well-ſhaded gully among the woods.

The flowers have five perfect filaments ſhooting from the bottom of the real flower-leaf, and one imperfect filament from the nectarium. The berries are ſmall and ſucculent, and contain each three hard rugged ſeeds[b].

The younger Linneus, in the *Supplementum Plantarum*, has confounded three plants under the name of Heliconia Bihai; namely this, Strelitzia Reginæ, to which the ſpecific difference and deſcription there given belong, and Heliconia, or rather Strelitzia alba.—Heliconia Bihai was introduced into the royal garden at Kew in 1786, by Mr. Alexander Anderſon[c].

2. This plant bears a great reſemblance to Canna, and grows to the height of eight feet, with a ſimple ſmooth ſtem. Leaves ovate-lanceolate, entire, acute, very ſmooth, marked with parallel nerves: petioles ſheathing, ſmooth. Spadix ſimple. Spathes fewer (four to ſix), alternate, diſtich, ſomewhat remote, divaricated, two inches long, ſheathing at the baſe, acute, coloured blood-red, many-flowered. Flowers pedicelled, crowded, upright, an inch long, fulvous; on round peduncles, half an inch long. Corolla three-ſided: the two upper petals erect, linear, acute, keeled, converging, glued to the nectary, the uppermoſt only trifid: the lower petal embracing the upper petals and nectary at the baſe, a little wider, keeled, ventricoſe, browniſh green at the top. Hinder leaf of the nectary the length of the petals, lanceolate, concave, a little curved inwards, acuminate, entire, ſtriated, including the ſtamens: front leaf many times ſmaller, awl-ſhaped, concave, inſerted at the baſe into the lower petal. Filaments five, included within the hinder leaf of the nectary, free at the baſe. Anthers linear, two-celled, white. Germ three-ſided, truncate. Style ſlightly three-ſided, filiform. Stigma blunt, three-ſided, bent in, pubeſcent. Fruit three-cornered, truncate-depreſſed, ſcarlet at top. Native of Jamaica, in wet parts of the woods, on the higheſt mountains[d]: and in ſeveral parts of South America.

3. Stem and leaves very ſmooth. Spadix a ſpan long, hirſute, the joints thickened towards the next ſpathe. Spathes alternate, in two rows, lanceolate-awl-ſhaped, channelled, aſcending, the lower ones larger, with a hiſpid keel. Peduncles from nine to twelve, in the axils of the ſpathes, upright, round, very hirſute, ſhort, leafleſs, one-flowered, ſurrounded at the ſides both ways with awl-ſhaped flat ſpathes or bractes, ſhorter than the flower, lying over each other in a ſingle row, within the cavity of the larger ſpathe. Germ obtuſe, hiſpid, obtuſely three-ſided. Corolla curved, two-petalled: upper petal complicated, hiſpid, bifid at the tip; lower broader, complicated, hiſpid, oblong, with a brown mark on the inſide at top. Nectary lanceolate, faſtened by the back to the upper petal. Stamens five, the length of the corolla. Style filiform. Stigma headed. In ſtature and leaves this reſembles the other ſpecies: the pericarp is the ſame with that of H. pſittacorum, only hiſpid.

Found in South America by Mutis[e].

Heliconia. See *Strelitzia.*]

HELICTERES. (*From* ελιξ, *ſpiral: ſo named on account of the ſpiral form of the fruit.*)
Lin. gen. n. 1025. *Reich.* 1114. *Schreb.* 734. *Jacqu. amer.* 235. *Gærtn. t.* 64. *Juſſ.* 278.
Iſora. *Plum.* 37.
Claſſ. 20. 6. Gynandria Decandria.
—— 10. 1. Decandria Monogynia. *Schreb.*
—— 16. 5. Monadelphia Decandria. *Swartz.*
Nat. order of *Columniferæ.—Malvaceæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, tubulous, half-ovate, obliquely ſpreading, unequally five-cleft, coriaceous.

Cor. *Petals* five, oblong, equal in breadth, fixed to the receptacle, longer than the calyx: *claws* long, with a tooth on each ſide at the baſe.
Nectary of five petal-ſhaped, lanceolate, very ſmall leaflets, covering the germ.

Stam. *Filaments* five, ten or more, very ſhort. *Anthers* oblong, lateral.

Pist. *Receptacle* filiform, very long, bowed back, bearing an ovate *germ* at the tip. *Style* ſubulate, longer than the germ. *Stigma* ſubquinquefid.

Per. *Capſules* five, often twiſted ſpirally, one-celled.

Seeds very many, angular.

Obs. *In ſome ſpecies Jacquin and others have obſerved dodecandrous and polyandrous flowers, and ſtraight capſules. One ſpecies has no corolla.*

ESSENTIAL CHARACTER.

Pentagynous. Cal. one-leafed, oblique. *Petals* five. *Nect.* of five leaflets. *Capſ.* five, twiſted.

SPECIES.

1. Helicteres baruenſis. *Small-fruited Screw-tree.*
Lin. ſyſt. 825. *Reich.* 4. 63. *mant.* 122. *Jacqu. amer.* 236. *t.* 149. *pict.* 116. *t.* 227. *Pluk. alm. t.* 245. *f.* 2. *Gærtn. fruct.* 1. 308.
H. Iſora α. *Lin. ſpec.* 1366. *Mill. dict. n.* 2.
Decandrous; leaves cordate, ſerrate; fruit twiſted with ſtraight tips.

2. Helicteres Iſora. *Great-fruited Screw-tree.*
Lin. ſyſt. 826. *Reich.* 4. 64. *Mill. dict. n.* 1.
H. jamaicenſis. *Jacqu. amer.* 235. *t.* 179. *f.* 99. *pict.* 115. *t.* 226. *hort. t.* 143. *Swartz. prodr.* 98. *obſ.* 345. *Brown. jam.* 330.

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[a] Swartz.

[b] Browne.

[c] Hort. kew. & Swartz.

[d] Swartz.

[e] Linn. ſuppl.

H. Iſora β. *Lin. ſpec.* 1366.
Decandrous; leaves cordate, ſerrate; the whole fruit twiſted. (*Leaves elliptic, ſubcordate; fruit ſubulate at the tip. Sw.*)

[3. Helicteres hirſuta.
Loureiro cochinch. 530. 2.
Decandrous: leaves cordate, ſerrate: fruit five-celled, ſtraight, very hirſute.

4. Helicteres undulata.
Loureiro cochinch. 531. 3.
Decandrous: leaves lanceolate, waved: flowers in heaps: ſiliques five, ſtellate.

5. Helicteres anguſtifolia.
Lin. ſpec. 1366. *ſyſt.* 826. *Reich.* 4. 64. *Oſbeck itin.* 232. *t.* 3. *Loureiro cochinch.* 530.
Decandrous: leaves lanceolate quite entire, fruit ovate ſtraight.

6. Helicteres pentandra.
Lin. ſyſt. 826. *Reich.* 4. 64. *mant.* 294.
Spiriploca. *Allamand Mſs.*
Pentandrous; leaves ovate, floral leaves coloured.

7. Helicteres carthagenenſis.
Lin. ſpec. 1366. *ſyſt.* 826. *Reich.* 4. 65. *Jacqu. amer.* 237. *t.* 150. *pict. t.* 228.
Polyandrous; leaves cordate, ſerrate; fruit oblong, ſtraight.

8. Helicteres paniculata.
Loureiro cochinch. 531. 4.
Polyandrous: leaves ovate, acute: flowers panicled: ſiliques five, ſtellate.

9. Helicteres apetala.
Lin. ſpec. 1366. *ſyſt.* 826. *Reich.* 4. 65. *Jacqu. amer.* 238. *t.* 181. *f.* 98. *pict.* 116. *t.* 263. *f.* 74. *Hernand. mex.* 383. 459.
Dodecandrous, apetalous; leaves five-lobed, ſiliques divaricate.

DESCRIPTIONS, &c.

Shrubs or trees, natives of the Eaſt or Weſt Indies, moſtly tomentoſe. Leaves alternate. Peduncles axillary, few-flowered.

1. This is an upright tree, about twelve feet in height, branching but little. The younger branches, peduncles and petioles are tomentoſe. Leaves acute, wrinkled, tomentoſe and whitiſh underneath, ſomewhat hairy on the upper ſurface, petioled, alternate, deciduous. Stipules awl-ſhaped. Peduncles many-flowered, terminating, thick. About the pedicels are large, depreſſed, green glands, uncertain in number, black when dried. The flowers have no ſcent. Calyx greeniſh yellow, with a white excavation, and lips ſometimes entire or ſcarcely divided. Petals whitiſh. Anthers yellow, having a tranſverſe groove where they are faſtened to the filaments, ſo that they ſeem to be two, and ſo large as to cover the nectary, germ and filaments[a]. Capſules growing on a very long, filiform common receptacle, of a ſuberoſe-coriaceous ſubſtance, ſpiral, but always with the top ſtraight, on one ſide rounded, varicoſe, pubeſcent, on the other ſmooth, compreſſed to an edge, one-celled, one-valved, opening by the inner ſuture. Seeds about fifty in each capſule, obovate, angular, ſmooth, of a brown cheſtnut colour[b]. The bark of the trunk and principal branches being eaſily peeled off and very tough is uſed inſtead of ropes.—Native of the iſland of Baru, in woods near the coaſt[c]: of the Weſt Indies. Cultivated in 1739 by Mr. Miller[d].

2. This alſo is a ſmall upright tree, about twelve feet high, branching but little. Younger branches, peduncles, calyxes and leaves tomentoſe. Leaves petioled, alternate, acute. Stipules in pairs, briſtle-ſhaped. Peduncles many-flowered, terminating, glandular. Calyx ſubcampanulate, unequally five-toothed. Petals white, obtuſe, reflex. Germ five-grooved, protruded beyond the flower on a very long pedicel, calycled with five peculiar leaflets. Filaments ten, upright, without the calyx of the germ, which is wholly covered by the tranſverſe oblong anthers. Capſules twiſted ſpirally into an ovate fruit; their tips make one revolution, and are covered with a cloſe nap, which is finally worn off by the weather before they fall. Seeds angular, ovate[e].

This curious ſhrub, as Browne calls it, is very frequent in the low gravelly hills of Jamaica. It was cultivated in 1739, by Mr. Miller; and flowers here in june and july[f].

3. Stem ſhrubby, ſix feet high, upright, round, hairy; with diffuſed branches. Leaves pointed, tomentoſe, petioled, large. Peduncles many-flowered, axillary. Calyx with a long, curved, hairy, coloured tube; border ſhort, four-cleft, the upper ſegment emarginate. Corolla duſky purple; petals turbinate-oblong, unequal, converging, with a toothlet above the baſe on each ſide; claws long, ſticking into the receptacle. Filaments ſhort, nearly equal, ending at bottom in a long, bent tube, placed on the receptacle: anthers ovate, two-celled, incumbent. Germ five-cornered, elevated on a long pedicel to the mouth of the ſtamineous tube: ſtyle filiform, ſlender, longer than the ſtamens: ſtigma thickiſh, very ſmall. Capſule oblong, five-valved, five-celled, blunt, rough with very many long, branching, harſh hairs; ſeeds bony.

In this and the fifth ſort the ſtamens are not Gynandrous, but rather Monadelphous; nor ought the pedicel ſupporting the germ to be looked upon as a receptacle, for it is entirely detached from the ſtamens. Native of Cochinchina, in woods.

4. This is a middling-ſized tree with ſpreading branches. Leaves quite entire, ſmooth, petioled. Flowers ſmall, moſtly terminating. Calyx none. Corolla greeniſh red. Anthers ſeſſile, two-celled, placed on the germ at the baſe. Germ five-cornered, peduncled: ſtyle filiform, reflex: ſtigma orbiculate, five-parted. Siliques oblong, thick, ſcarlet, ſtraight above, convex underneath. Seeds few, ovate, ſmooth, brown, fleſhy, adhering to each valve by their proper pedicels. Native of Cochinchina, in woods[g].

5. Stem ſhrubby, five feet high, upright, branched. Leaves ſhining on the upper ſurface, veined underneath, tomentoſe, petioled, alternate. Flowers pale purple, on two-flowered, axillary peduncles. The calyx has a long, crooked tube, with a ſhort four-cleft border, the upper cleft emarginate. Petals rounded, ſmall, with a toothlet at the baſe. Filaments very ſhort, united into a long tube; with incumbent anthers. Style nearly equal to the ſtamens. Capſules united into one oblong-ovate, ſtraight, pedicelled fruit. Native of China, about Canton[h].

6. Leaves alternate, acuminate, ſerrate; the floral leaves duſky purple. Calyxes hiſpid with branching briſtles. Petals the length of the calyx. Stamens five. Capſules twiſted, hairy.—Native of Surinam[i].

7. An upright tree, about twelve feet high. Leaves tomentoſe on both ſides. Flowers extremely fetid, generally coming out with the leaves, but ſometimes before them. Calyx browniſh yellow. Petals purple. It has ſo much the habit of the firſt ſort, that it can hardly be diſtinguiſhed from it, except in the flower and fruit.—Native of Carthagena in New Spain, in woods; flowering there in june and july[k].

8. This is a large tree, with ſpreading branches. Leaves quite entire, flat, ſmooth, petioled. Flowers in looſe panicles, moſtly terminating. Calyx none. Corolla of a reddiſh colour, and ſpreading very much. Anthers ſeſſile, more than twenty, adhering laterally to the middle of the germ. Style filiform, curved; with a convex, emarginate ſtigma. Siliques oblong, two-valved, red.—Native of Cochinchina, in woods[l].

9. This is an elegant tree, forty feet in height, with a large handſome head. Leaves plaited, ſmooth above, ſubvilloſe beneath, upwards of a foot in diameter, numerous; lobes ovate-roundiſh, acute, quite entire; on round petioles, nine inches in length. Flowers numerous, very fetid, dirty yellow with purple ſpots, without either petals or nectary; in large looſe panicles at the ends of the twigs. It is apparent that the filaments are the continuation of the bark or outer part of the receptacle; but that the germ ſprings from the pith of it.—Native of Carthagena, in woods, flowering from may and june to ſeptember[m].]

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[a] Jacquin.
[b] Gærtner.
[c] Jacquin.
[d] Hort. kew.
[e] Jacquin.
[f] Hort. kew.
[g] Loureiro.
[h] Ibid.
[i] Linn. mant.
[k] Jacquin.
[l] Loureiro.
[m] Jacquin.

PROPAGATION AND CULTURE.

Theſe plants are propagated by ſeeds, which muſt be ſown upon a hot-bed in the ſpring, and when the plants are come up ſtrong enough to remove, they ſhould be each planted in a ſeparate ſmall pot, filled with light earth, and plunged into a moderate hot-bed of tan, obſerving to ſhade them from the ſun till they have taken new root; then they ſhould be treated in the ſame way as other tender plants from hot countries, raiſing the glaſſes every day in proportion to the weather, that the plants may enjoy freſh air, which will ſtrengthen them, and prevent their drawing up weak. In the ſummer the plants may remain under the frames, if there is ſufficient height for them to grow; but in autumn they muſt be plunged into the tan-bed in the ſtove, where they ſhould always remain, being careful to ſhift them into larger pots when they require it, and not give them too much wet in the winter; but in ſummer they ſhould have a large ſhare of air in warm weather, and require to be often refreſhed with water: the ſecond year from the ſeeds theſe plants have often flowered in the Chelſea garden, and the ſeeds have ſome years ripened there, but the plants will live ſeveral years with proper management.

HELIOCARPUS. (*From* Ηλιος, *the ſun, and* Καρπος, *fruit, which being ſurrounded by rays, reſembles the ſun, as it is commonly repreſented.*)

Lin. gen. n. 606. *Reich.* 662. *Schreb.* 829. *Gærtn. t.* 49. *Juſſ.* 290. Montia. *Houſt. Philoſ. tranſ.*

Claſſ. 11. 2. Dodecandria Digynia.

Nat. order of *Columniferæ. Tiliaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* four-leaved, coloured: *leaflets* linear, long, broadiſh, ſpreading, deciduous.

COR. *Petals* four, linear, much ſhorter than the calyx, narrower.

STAM. *Filaments* ſixteen, awl-ſhaped, almoſt the length of the calyx. *Anthers* twin, linear, incumbent.

PIST. *Germ* roundiſh. *Styles* two, ſimple, upright, length of the ſtamens. *Stigmas* acute, diſtant.

PER. *Capſule* turbinate-ovate, peduncled, compreſſed, ſurrounded perpendicularly on both ſides with rays pinnately branched; two-celled, two-valved; with the partition contrary.

SEEDS ſolitary, ſubovate.

ESSENTIAL CHARACTER.

Cal. four-leaved. *Cor.* four-petalled. *Styles* ſimple. *Capſ.* two-celled, compreſſed, longitudinally radiated on both ſides: (ſuperior, club-ſhaped, ſurrounded with filiform feathered rays, *G.*)

SPECIES.

1. Heliocarpus americana. *American Heliocarpus.*
Lin. ſpec. 643. *Reich.* 2. 430. *hort. cliff.* 211. *t.* 16. *Trew Ehret. t.* 45. *Gærtn. fruct.* 225.

DESCRIPTION, &c.

It riſes with a thick, ſoft, woody ſtalk, from fifteen to eighteen feet high, ſending out ſeveral lateral branches towards the top. Leaves heart-ſhaped, full of veins, ſerrate, ending in acute points, alternate, on oblique petioles three inches long. The flowers are produced at the ends of the ſhoots, in branching cluſters, and are of a yellowiſh green colour.

[Capſule pubeſcent, ſurrounded with feathered bifid rays; having a ſingle ſeed in each cell, keeled on one ſide, flattiſh on the other, with a ſlight groove at bottom, of a browniſh bay colour, faſtened to a ſmall tubercle in the middle of the partition[n].

This tree is very nearly allied to Triumfetta. The calyx is four-leaved, and the corolla four-petalled; both are of a whitiſh or herbaceous colour, and have the appearance of a corolla with eight petals.]

It was diſcovered by Dr. Houſtoun (before 1733), growing naturally about La Vera Cruz in New Spain, whence he ſent the ſeeds to England; they ſucceeded, produced flowers, and ripe ſeeds during ſeveral years in the Chelſea garden.

PROPAGATION AND CULTURE.

This plant is propagated by ſeeds, which muſt be ſown upon a hot-bed in the ſpring; and when the plants are fit to remove, they ſhould be each planted in a ſeparate ſmall pot filled with light kitchen-garden earth, and plunged into a hot-bed, treating them in the ſame way as other tender plants, which will not bear the open air in this country at any ſeaſon of the year; and while the plants are young, they require to be plunged into the tan-bed, but after they have acquired ſtrength, they will thrive in the dry ſtove. In winter they ſhould have but little water, and muſt be kept warm; but in ſummer they ſhould have plenty of freſh air in mild weather, and muſt be frequently refreſhed with water. With this management the plants will flower the third year, and produce good ſeeds, but may be preſerved ſeveral years with proper care.

I have ſowed the ſeeds of this plant which had been kept ten years, and came up as well as if it had been ſaved the former year; though from the appearance of the ſeeds, it ſeems as unlikely to grow after the firſt year as any which I know.

HELIOPHILA. (*From* Ηλιος, *the ſun, and* φιλος *a friend. Theſe plants being fond of ſun-ſhine.*)

Lin. gen. n. 816. *Reich.* 880. *Schreb.* 1092. *Juſſ.* 238.—*auctore Nic. Burmanno, in nov. act. upſ.* 1. 94. *t.* 7.—*Chamira Thunb. nov. gen.* 48.

Claſſ. 15. 2. Tetradynamia Siliquoſa.

Nat. order of *Siliquoſæ.—Cruciformes. Cruciferæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* four-leaved: *leaflets* ſpreading, oblong, concave, membranaceous at the edge, deciduous: the two outer ones bladdery at the baſe.

COR. four-petalled, cruciform: *petals* roundiſh, flat, ſeſſile.—*Nectaries* two from the receptacle, bowed back towards the bladder of the calyx.

STAM. *Filaments* ſix, awl-ſhaped, erect, the length of the calyx, two oppoſite a little ſhorter. *Anthers* oblong, erect.

PIST. *Germ* cylindric. *Style* ſhorter than the germ. *Stigma* blunt.

PER. *Silique* columnar, ſomewhat toruloſe, mucronate, two-celled, two-valved.

SEEDS ſeveral.

ESSENTIAL CHARACTER.

Nectaries two, bowed back towards the bladder of the calyx.

SPECIES.

1. Heliophila integrifolia. *Whole-leaved Heliophila.*
Lin. ſpec. 926. *ſyſt.* 598. *Reich.* 3. 268. *mant.* 428. *Schreb. in act. upſ. nov.* 1. 94. *t.* 7. *amæn.* 6. *afr.* 23. (Cheiranthus). *Herm. lugdb.* 364. *t.* 365. *Seba muſ.* 1. *t.* 17. *f.* 5. (Leucoium). *Pluk. phyt. t.* 432. *f.* 2. (Naſturtium).
Leaves lanceolate undivided.
2. Heliophila coronopifolia. *Buck's-horn-leaved Helioph.*
Lin. ſpec. 927. *Reich.* 3. 268. *Herm. lugdb.* 364. *t.* 367. *Seba muſ.* 1. *t.* 17. *f.* 5. *Pluk. alm. t.* 200. *f.* 3. *bad.* (Leucoium).
Leaves linear pinnatifid.

[3. Heliophila amplexicaulis.
Lin. ſyſt. 598. *ſuppl.* 296.
Leaves ſtem-claſping entire ſmooth, ſiliques necklace-ſhaped.
4. Heliophila incana. *Hoary Heliophila.*
Ait. hort. kew. 2. 397. *Burm. in nov. act. upſ.* 1. 94. *t.* 7.
Leaves ſpatulate quite entire pubeſcent, ſiliques villoſe.
5. Heliophila filiformis. *Divaricated Heliophila.*
Lin. ſyſt. 598. *ſuppl.* 296.
Leaves ſubulate filiform ſmooth, ſiliques pendulous, branches divaricate.
6. Heliophila puſilla. *Dwarf Heliophila.*
Lin. ſyſt. 598. *ſuppl.* 297.
Leaves linear, ſiliques necklace-ſhaped upright.
7. Heliophila flava.
Lin. ſyſt. 598. *ſuppl.* 297.
Leaves linear, ſtems ſhrubby ruſhy.
8. Heliophila circæoides.
Lin. ſyſt. 599. *ſuppl.* 298.
Chamira. *Thunb. nov. gen.* 48.
C. cornuta. *Lin. ſyſt.* 597.
Leaves cordate.

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[n] Gærtner.

9. Heliophila digitata.
Lin. ſyſt. 599. *ſuppl.* 296.
Leaves palmate-pinnatifid villoſe: pinnas linear.

10. Heliophila pinnata.
Lin. ſyſt. 599. *ſuppl.* 297.
Leaves trifid and pinnate; leaflets linear: ſiliques necklace-ſhaped upright.

DESCRIPTIONS, *&c.*

Theſe are all natives of the Cape of Good Hope.]

1. Stalk erect, four or five inches high, ſending out two or three ſide branches. [Leaves rough with hairs on the upper ſurface, ſmooth underneath. The bladders or bunches at the baſe of the calyxes are diaphanous.] The flowers grow in a looſe terminating bunch, and have no ſcent. [The corolla reſembles that of Flax or Anagallis Monelli: is blue, and cloſes at night[a].] The pods are near three inches long, taper, and contain a double row of flat ſeeds.

[Cultivated by Mr. Miller in 1768[b].

2. This is a ſmooth plant[c].] It grows about the ſame height with the other, but branches more. The flowers are like thoſe of the foregoing.

[Cultivated by Mr. Miller in 1768.—It flowers from june to october, and is ſhrubby[d]. According to Mr. Miller theſe are both annual plants.

3. Found at the Cape of Good Hope with moſt of the other ſorts by Thunberg.

4. Shrubby. Flowering in may and auguſt. Introduced in 1774, by Mr. Francis Maſſon[e].

5. Annual. Stem half a foot high, herbaceous, ruſhy: branches upright, ſhorter. Racemes horizontal, on horizontal pedicels. Calyx expanding very much; leaflets alternate with the petals, linear, channelled, blunt. Petals ſpreading as the calyx does, but near three times as large, pale, ſtreaked. Silique awl-ſhaped, ſtiff, very ſmooth and even[f]. It flowers in july and auguſt. Introduced in 1786, by John Sibthorp, M. D.[g]

6. Annual. A ſpan high, upright, branched, the ſtature of *Arabis thaliana.* Stem-leaves linear, ſmooth and even. Siliques patulous, peduncled; the joints ſeparate, orbicular, compreſſed.

7. Shrubby, having the appearance of Broom, upright, ſparingly branched, ſtiff. Leaves alternate, remote, ſmooth and even. Racemes terminating, long, ſimple; the flowers diſtant. Calyx very ſhort, ovate, cloſed, blunt, ſomewhat ſcarioſe about the edge. Petals obovate, the ſame ſize as in the Cabbage, yellow, veiny; the claws longer than the calyx. Stamens the length of the calyx. Germ ovate. Silique the length of the petals, columnar with four blunt angles. It varies with red corollas.—It is doubtful whether this be a natural ſpecies of this genus.

8. Stem brittle, branched, herbaceous. Leaves ſomewhat angular. Calyx with the leaflets cloſed, linear, gaping at the baſe, deciduous; two oppoſite ones with ſomething like a ſpur at the baſe; the protuberance half the length of the leaflets. Petals oblique. Anthers reflex at the tip. Germ ovate-oblong. Valves of the ſilique convex, gibbous, juicy: partition globular, fleſhy, ſtanding out beyond the valves. Seeds three or four, roundiſh[h].

It is thus deſcribed by Thunberg, under the name of Chamira cornuta.

The whole plant is ſucculent, weak, ſmooth. Root fibrous, annual. Stem one or more procumbent or ſubſcandent, ſomewhat angular at bottom, round at top, ſmooth. Branches alternate, gradually growing thinner to the end. Leaves alternate, petioled, cordate-roundiſh, acuminate, tooth-angled; the lower larger; the upper regularly leſs, nerved. Petioles ſemicolumnar, channelled above, ſhorter than the leaf, ſpreading. Flowers alternate, very remote, but towards the end nearer, peduncled. The flowering peduncles erect, a line in length, bearing one flower: fruit peduncles reflected.

9. The ſtem thickens very much upwards, which gives this plant a ſingular appearance.

10. This reſembles the ſixth ſpecies very much, but it has branched or pinnate leaves[i].]

PROPAGATION AND CULTURE.

The ſeeds may be ſown in the ſpring on a ſouth border, and when the plants come up, if they are thinned and kept clean from weeds, it is all the culture they require.

HELIOTROPE. See *Heliotropium.*

HELIOTROPII FLORE. See *Tournefortia.*

HELIOTROPIUM. (*From* Ηλιος, *the Sun, and* τρεπω, *to turn. Becauſe the leaves or flower were ſuppoſed to turn with the ſun. Hence the French name Turnſole. Or becauſe it flowered about the ſummer ſolſtice.*)
Lin. gen. n. 179. *Reich.* 191. *Schreb.* 239. *Tournef. t.* 57. *Gærtn. t.* 68. *Juſſ.* 130.
Claſſ. 5. 1. Pentandria Monogynia.
Nat. order of *Aſperifoliæ.—Borragineæ,* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, tubular, five-toothed, permanent.

COR. monopetalous, ſalver-ſhaped: *tube* the length of the calyx: *border* flat, half-five-cleft, obtuſe: *clefts* ſmaller, alternate, more acute, between the larger ones: *throat* naked.

STAM. *Filaments* five, very ſhort, in the throat. *Anthers* ſmall, covered.

PIST. *Germs* four. *Style* filiform, length of the ſtamens. *Stigma* emarginate.

PER. none. *Calyx* erect, unchanged, cheriſhing the ſeeds in its boſom. (Berry, *G.*)

SEEDS four, ovate, acuminate. (Nuts four, naked or corticate, not perforate, *G.*)

ESSENTIAL CHARACTER.

Cor. ſalver-ſhaped, five-cleft, with teeth interpoſed: throat cloſed with arches.

SPECIES.

1. Heliotropium peruvianum. *Peruvian Turnſole* or *Heliotrope.*
Lin. ſpec. 187. *ſyſt.* 184. *Reich.* 1. 380. *Murr. prodr.* 141. *Mill. fig. t.* 144. *Curt. magaz. t.* 141.
Leaves lanceolate-ovate, ſtem ſhrubby, ſpikes numerous aggregate-corymbed.

2. Heliotropium indicum. *Indian Turnſole* or *Heliotrope.*
Lin. ſpec. 187. *Reich.* 1. 380. *fl. zeyl. n.* 70. *hort. cliff.* 45. *Murr. prodr.* 141. *Swartz obſ.* 54. *Dodart. mem.* 83. *Pluk. phyt. t.* 245. *f.* 4. *Loureiro cochinch.* 103.
β. H. horminifolium. *Mill. dict. n.* 3. *Herm. lugdb.* 307. *Sloan. jam.* 98. *Sabb. hort. rom.* 2. *t.* 34.
Leaves cordate-ovate acute ſomewhat ſcabrous, ſpikes ſolitary, fruits bifid.

[3. Heliotropium parviflorum. *Small-flowered Turnſole* or *Heliotrope.*
Lin. ſyſt. 184. *Reich.* 1. 380. *mant.* 201. *Brown. jam.* 151. 2. *Dill. elth.* 178. *t.* 146. *f.* 175. *Burm. zeyl.* 121. *Fl. zeyl. n.* 470. *Raii ſuppl.* 271.
H. angioſpermum. *Murr. prodr.* 217.
Leaves ovate wrinkled ſcabrous oppoſite and alternate.

4. Heliotropium inundatum.
Swartz prodr. 40.
Leaves oblong obtuſe hirſute, ſpikes in fours erect, ſtem ſhrubby.]

5. Heliotropium europæum. *European Turnſole* or *Heliot.*
Lin. ſpec. 187. *Reich.* 1. 381. *hort. upſ.* 33. *cliff.* 45. *Hall. helv. n.* 593. *Scop. carn. n.* 184. *Pollich. pal. n.* 180. *Jacqu. auſtr.* 3. *t.* 207. *Krock. ſileſ. n.* 268. *Murr. prodr.* 141. *Sabb. hort.* 2. *t.* 33. *Berg. phyt.* 2. 15. *Plenck, ic. t.* 74. *Villars dauph.* 2. 450.
H. vulgare. *Bocc. ſic. t.* 49.
H. majus. *Cluſ. hiſt.* 46. 6. *Bauh. pin.* 253. *Ger. herb.* 264. *emac.* 334. *Park. theat.* 438. *Raii hiſt.* 501.
[β. H. ſiculum majus flore amplo odorato. *Bocc. ſic. Raii hiſt.* 501. 2.
Leaves ovate quite entire tomentoſe wrinkled, ſpikes conjugate;

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[a] Linn. mant.
[b] Hort. kew.
[c] Linn. ſpec.
[d] Hort. kew.
[e] Ibid.
[f] Linn. ſuppl.
[g] Hort. kew.
[h] Linn. ſuppl.
[i] Linn. ſuppl.

6. Heliotropium malabaricum.

Retz. obſ. 4. *n.* 73. *Burm. ind.* 40. *t.* 16. *f.* 1.

Leaves ovate plaited ſtrigoſe quite entire, ſpikes almoſt ſolitary.

7. Heliotropium ſupinum. *Trailing Turnſole* or *Heliot.*

Lin. ſpec. 187. *Reich.* 1. 381. *Gouan monſp.* 17. *fig. Cluſ. hiſt.* 2. 47. *Ger. emac.* 335. 3. *Raii hiſt.* 501.

H. minus ſupinum. *Bauh. pin.* 253. *Bauh. hiſt.*

H. majus ſupinum. *Park. theat.* 438. *n.* 2.

Leaves ovate quite entire tomentoſe plaited, ſpikes ſolitary.]

8. Heliotropium fruticoſum.

Lin. ſpec. 187. *Reich.* 1. 381. *amœn.* 4. 394. *Swartz obſ.* 55. *Brown. jam.* 151. 4. *Sloan. jam.* 1. 214. *t.* 132. *f.* 4.

Tournefortia humilis. *Lin. ſyſt.* 191. 5.

Leaves linear-lanceolate hairy, ſpikes ſolitary ſeſſile.

9. Heliotropium curaſſavicum. *Glaucous Turnſole* or *Heliotrope.*

Lin. ſpec. 188. *Reich.* 1. 382. *mant.* 333. *hort. cliff.* 45. *upſ.* 33. *Gærtn. fruct.* 1. 329. *Burm. ind.* 41. *t.* 16. *f.* 2. *Pluk. alm. t.* 36. *f.* 3. *Brown. jam.* 151. 3. *Sloan. jam.* 1. 213. *t.* 132. *f.* 3. *Mor. hiſt.* 3. 452. *ſ.* 11. *t.* 31. *f.* 12. *Herm. parad. t.* 183.

Leaves lanceolate-linear ſmooth without veins, ſpikes conjugate.

[10. Heliotropium orientale.

Lin. ſpec. 188. *Reich.* 1. 382.

Leaves linear ſmooth without veins, flowers ſcattered lateral.]

11. Heliotropium gnaphalodes.

Lin. ſpec. 188. *ſyſt.* 184. *Reich.* 1. 382. *Jacqu. amer.* 25. *t.* 173. *f.* 11. *pict.* 19. *t.* 259. *f.* 9. *Mor. t.* 28. *f.* 6. *Sloan. jam.* 1. 213. *Pluk. alm. t.* 193. *f.* 5.

Leaves linear obtuſe tomentoſe, peduncles dichotomous, flowers of the ſpikes in fours, ſtem fruteſcent.

[12. Heliotropium ſcabrum.

Retz. obſ. 2. *n.* 7.

Leaves lanceolate ſtrigoſe, ſtem branched diffuſed, flowers heaped.

13. Heliotropium marifolium.

Retz. obſ. 2. *n.* 8.

Leaves lanceolate hiſpid, ſtems procumbent ſomewhat ſhrubby, ſpikes ſimple alternate.

14. Heliotropium coromandelianum.

Retz. obſ. 2. *n.* 9. *Vahl ſymb.* 1. 13. *Forſk. deſcr.* 8. (Lithoſpermum).

Leaves obovate villoſe entire, ſpikes ſimple and conjugate, ſeeds dotted.]

15. Heliotropium capitatum.

Mill. dict. n. 4.

Leaves oblong-ovate quite entire ſmooth hoary underneath, flowers in axillary heads, ſtem arboreſcent.

16. Heliotropium canarienſe.

Mill. dict. n. 5.

Leaves ovate crenate oppoſite, flowers in dichotomous axillary heads, ſtem arboreſcent.

17. Heliotropium procumbens.

Mill. dict. n. 10.

Stem procumbent, leaves ovate tomentoſe quite entire, ſpikes ſolitary terminating.

18. Heliotropium americanum.

Mill. dict. n. 11.

Leaves oblong-ovate tomentoſe, ſpikes conjugate terminating, ſtem ſhrubby.

[19. Heliotropium tetrandrum.

Loureiro cochinch. 103.

Leaves ovate-lanceolate, ſmooth, oppoſite: ſpikes heaped, terminating.

20. Heliotropium undulatum.

Vahl ſymb. 1. 13. *Forſk. deſcr.* 38. *n.* 24. (Lithoſpermum).

Leaves lanceolate hiſpid rolled back at the edge waved, ſpikes conjugate, corollas villoſe, ſtem procumbent.

21. Heliotropium lineatum.

Vahl ſymb. 1. 13. *Forſk. deſcr.* 39. *n.* 25. (Lithoſpermum).

Leaves elliptic petioled villoſe rolled back at the edge flat, ſpikes conjugate, ſtem procumbent.

22. Heliotropium ternatum.

Vahl ſymb. 3. 21.

Leaves in threes and alternate lanceolate hoary underneath, ſpikes terminating conjugate.

23. Heliotropium pinnatum.

Vahl. ſymb. 3. 21.

Leaves pinnate.

24. Heliotropium amplexicaule.

Vahl ſymb. 3. 21.

Leaves lanceolate obtuſe half-ſtem-claſping, ſpikes branching, ſtem ſhrubby.]

DESCRIPTIONS, *&c.*

1. This riſes with a ſhrubby ſtalk from two to three feet high, dividing into many ſmall branches. Leaves three inches long, and an inch and half broad in the middle, hairy, greatly veined, and aſh-coloured on their under ſide, on ſhort foot-ſtalks. The flowers are produced at the ends of the branches in ſhort reflex ſpikes, growing in cluſters: the peduncles divide into two or three, and theſe again into ſmaller ones, each ſuſtaining a ſpikelet of pale blue flowers, which have a ſtrong ſweet odour, [of a very particular nature, ſomewhat reſembling that of bitter Almonds.

Stems rough with hairs, with branches longer at bottom. Leaves elliptic or ovate-oblong, marked with lines, wrinkled, pubeſcent and ſcabrous. Peduncles towards their extremities rough with hairs, bifid or dichotomous. Spikes directed one way, bowed back [a]. There are uſually three or four in number, coming out from different points, about an inch in length. The corolla has a very ſhort globular tube, ſpreading into a wide border. Seeds almoſt globular, diſtinct, fixed to a cylindric prominence, in the middle [b].]

It grows naturally in Peru, whence the ſeeds were ſent by the younger Juſſieu to the royal garden at Paris. Mr. Miller had the ſeeds (about the year 1757) from the curious garden of the Duc d'Ayen at St. Germain's. It flowers here great part of the year, and thoſe flowers which come out in ſummer, are ſucceeded by ripe ſeeds in autumn.

2. [Stem herbaceous, a foot and half or two feet high, round, ſcabrous, hirſute, ſubdivided. Leaves cordate-ſpatulate, ovate, ſlightly ſerrate, wrinkled, nerved, hairy, ſoftiſh:] on pretty long petioles, two inches and a half long, and one and a half broad in the middle. [Spikes terminating, ſingle or ſolitary, ſometimes but very ſeldom double; ſometimes alſo from the ſides of the branches, reflex only at the end. Flowers ſeſſile, pointing one way, approximating in a double row, ſmall, blue: tube very long, cylindric, not globular, as in the others, border ſcarcely half-five-cleft, ſegments equal, blunt; throat five-rayed, orange-coloured, cloſed. Germs in connate pairs. Seeds one-celled; two, three, or four of unequal ſizes, and if more than two, the reſt are abortive: the fertile ones are ovate, acuminate, ſwelling a little on the outſide, covered with a juicy bark, and ſlightly connected at the baſe [c].]

Native of the Weſt Indies, and Cochinchina. Annual, or biennial. It flowers in july and auguſt; the ſeeds ripen in ſeptember and october. [Cultivated in 1713 [d].

The variety, which Mr. Miller makes a diſtinct ſpecies] is a ſmaller plant, ſeldom above two feet high; the leaves are an inch and half long, and about half an inch broad: the ſpikes of flowers are very ſlender, and not more than two inches long; the flowers are ſmall, and of a light blue colour.

[3. Nearly allied to the foregoing. Stem erect, pubeſcent, a foot high. Moſt of the leaves oppoſite, except thoſe in the middle of the ſtem, which are alternate, petioled, lucid, acute. Peduncles oppoſite to the leaves, or from the diviſions of the ſtem, longer than the leaves, erect; each having two recurved, imbricate ſpikes. Corolla minute, pervious, white with a yellow baſe [e]. The ſeeds are contained in a roundiſh capſule, with four cells, and one ſeed in each [f].

Annual. Native of the Weſt Indies. It flowers in july and auguſt. Cultivated in 1732, by James Sherard, M. D.[g].

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[a] Linn. ſyſt. [b] Murr. prodr. [c] Murr. prodr. and Swartz. [d] Hort. kew. [e] Linn. mant. [f] Murr. prodr.

The ſeeds came up in earth ſent with Barbadoes plants to Mr. Newport a merchant in London, and which he gave to the Eltham garden[h].

4. Native of the Caribee iſlands[i].]

5. This riſes about ſeven or eight inches high, dividing into two or three branches. Leaves rough, two inches long and one inch broad in the middle, of a light green, ſtanding upon pretty long foot-ſtalks alternately: the flowers are produced at the ends of the branches in double ſpikes, joined at the bottom, about an inch long, turning backward. Flowers white, appearing in june and july.

[Seeds four, naked, equal, ovate, convex on the outſide, with a ſmooth, juicy bark; on the inſide, where they are joined divided into two planes by a prominent angle without bark[k].—Cultivated in 1562, by William Turner, M. D.[l]

β. Flowers larger and ſweet[m].

6. Burman has figured this as a variety of the foregoing ſpecies; it is eaſily diſtinguiſhed from it however, by the ſtrigoſeneſs of the whole plant, by the plaits and ſmallneſs of the leaves, by the ſhortneſs of the petioles, and by the ſpikes not being conjugate, though they are frequently two together. The calyxes are by no means imbricate, but larger and diſtinct, involving the ſeeds even when they are ripe.—Native of Malabar[n].

7. This is ſmaller than the common ſort (n. 5.), with more ſlender branches, ſomewhat lanuginous, and proſtrate. The root ſmall and annual. Flowers white. Seeds uſually one or two only, the reſt being abortive; larger and more oblong than in the common ſort, brown, and covered with a bark[o].—Native of the Cape of Good Hope; flowering in june and july. Cultivated in 1640[p].

8. Stem ſhrubby, two feet high (Miller ſays, one foot and a half, and Browne that it ſeldom riſes above five or ſix inches) very much branched: branches ſtiff, ſcabrous and aſh-coloured. Leaves on ſhort petioles, alternate, ſmall,] ſcarcely one inch long, and one third of an inch broad in the middle, [acute, rigid, rolled back at the edge, recurved at the tip, hirſute and hiſpid on the upper ſurface, hirſute and hoary on the lower[q]. Spikes always ſingle, and not much bent[r], ſmall and ſlender. Flowers terminating, on ſhort pedicels, pointing one way; on ſhort, axillary, hiſpid peduncles. Segments of the calyx upright, ſtiff. Corolla white; border five-cornered: throat cloſed, pale, having five rays from the centre to the angles of the border. Filaments from the middle of the tube: anthers converging and cohering at the tip. Germ ovate: ſtyle ſhort, ſubulate: ſtigma capitate. Capſule roundiſh, containing two hemiſpherical ſeeds[s].—Native of the Weſt Indies, near the ſea ſhore. Cultivated by Mr. Miller, in 1759.

9. Root annual. Stem round, very ſmooth, with a glaucous gloom on it.] The branches trail on the ground, and grow a foot (or ſixteen inches) in length. Leaves ſomewhat blunt, quite entire, upright, on very ſhort petioles, ſome alternate others oppoſite. [Browne ſays, that it is eaſily diſtinguiſhed by its whitiſh ſmooth narrow leaves. Spikes in pairs on a common peduncle, and recurved. Corolla white, with a yellow baſe, and an open throat[t].—The fruit is an ovate-globular berry, containing four nuts, drying up as it grows ripe, and diviſible into four parts: fleſh thin, becoming the membranaceous bark of the nuts; which are cruſtaceous, hard, moderately thick, convex on one ſide, angular on the other, and in the middle of the angle having a deep little pit; they are imperforate and one-celled. Seeds ſolitary, ovate-oblong, having a very ſhort beak, convex on one ſide, ſlightly concave on the other, pale[u].

Native of the Weſt Indies: flowering here in june and july. Cultivated in 1759 by Mr. Miller[x].

10. A ſmall procumbent creeping plant. Leaves alternate. Flowers ſubſeſſile, alternate, ſolitary, ſcattered among the leaves.

Annual.—Native of Aſia[y].

11. This is an upright ſhrubby plant, commonly two feet high, ſometimes but ſeldom riſing to the height of ſix feet. Branches round, little divided, the older ones blackiſh, the younger ſcarred at bottom where leaves have grown, all together forming a convex, white, handſome head, viſible far off at ſea. Leaves wedge-linear, veinleſs, thick, tomentoſe on both ſides, glaucous, ſeſſile, numerous, crowded at the ends of the branches. Common peduncles round, tomentoſe, erect, a little longer than the leaves, terminating, few on each branch, bifid or trifid at top; ſingle pedicels ſpring from the diviſions, and form a ſpike directed one way, frequently bifid itſelf, but ſometimes ſimple. Flowers ſmall, with the calyxes of all ſo connected, that no one can be taken out without tearing the next. Corolla white[z].

Native of Cuba, Jamaica, Barbadoes, St. Euſtatia, &c. on the coaſt. Cultivated by Mr. Miller before 1759.

12. This ſpecies bears the appearance of a Sherardia. The root is ſimple and fuſiform. Stems ſubdichotomouſly branched and ſtrigoſe. Leaves alternate, moſtly oblique, on the uppermoſt branches ſometimes oppoſite, quite entire. Flowers terminating, ſmall, white, fenced with leaves. Calyxes nearly equal, hiſpid, Seeds four, roundiſh, ſmooth, only a little wrinkled at the tip.—Native of the Eaſt Indies. Sent by Koenig.

13. Root woody. Stems branched, hiſpid. Leaves alternate and ſcattered, ſharp, reſembling thoſe of Teucrium Marum, only ſmaller. Spikes copious, without order, not compact, with bractes of the ſame ſhape with the leaves. Flowers white, hirſute on the outſide, as are alſo the calyxes.

14. Root ſimple, fuſiform. Stems erect and proſtrate, hiſpid. Leaves alternate and oppoſite. Spikes lateral and terminating. Calyx unequal, hiſpid. Flowers ſmall, white.—Both natives of the Eaſt Indies, and ſent by Koenig[a]. This alſo is a native of Arabia; the Arabian plant differing from the Indian, according to Vahl, only in having the twigs, leaves and ſeeds more cloſely villoſe and ſilky.]

15. This ſort riſes with a ſhrubby ſtalk ſix or ſeven feet high; the young branches are cloſely covered with a white down, and the leaves on theſe are very hoary and entire, but thoſe on the older branches are greener, and ſome of them are notched on their edges; at each joint of the ſtalks come out two ſhort branches oppoſite, with ſmall hoary leaves placed oppoſite: theſe, when bruiſed, emit a ſtrong odour, which to ſome perſons is very diſagreeable, but others are pleaſed with it. The plants rarely flower in England, for in near forty years which I have cultivated them, I have but once ſeen them in flower. The flowers are white, collected in roundiſh heads, which turn backward, and ſit cloſe to the branches; the leaves continue all the year.

16. This ſort grows naturally in the Canary Iſlands. It riſes with a woody ſtalk three or four feet high, dividing into many branches, with leaves upon long footſtalks; hairy, and of an aſh colour on their under ſide; the flowers are produced from the ſide of the branches on pretty long peduncles, each ſuſtaining four ſhort roundiſh ſpikes or heads, which divide by pairs, and ſpread from each other. The flowers are white, and appear in june and july, but are not ſucceeded by ſeeds in England. The leaves of this plant, when bruiſed, emit an agreeable odour, for which it is by ſome perſons much eſteemed; the gardeners have given it the title of Madam Maintenon, but for what reaſon I know not.

17. This ſort was ſent me from Carthagena in New Spain, where it grows naturally on the ſandy ſhores. This is an annual plant, with trailing ſtalks which grow ſix or ſeven inches long, with ſmall leaves. The flowers are produced at the end of the

[g] Hort. kew.
[h] Dillenius.
[i] Swartz.
[k] Murr. prodr.
[l] Hort. kew.
[m] Boccone.
[n] Retzius.
[o] Cluſius.
[p] Hort. kew. from Park.
[q] Swartz.
[r] Browne,
[s] Swartz.
[t] Linn. mant.
[u] Gærtner.
[x] Hort. kew.

[y] Linn. ſpec.
[z] Jacquin.
[a] Retzius.

branches, in ſingle ſhort ſpikes, which are reflexed; they are ſmall and white, making little appearance.

18. This ſort was ſent me by the late Dr. Houſtoun from La Vera Cruz, where he found it growing in plenty; this riſes with a ſhrubby ſtalk three feet high, dividing into ſlender branches, which are cloſely garniſhed with leaves, placed without order. The flowers are produced at the end of the branches in double ſpikes, which are ſlender, ſhort, and ſtraight, not recurved as the other ſpecies. The flowers are ſmall and white, and the plant is perennial.

[The fifteenth was cultivated by Mr. Miller about the year 1728 or ſoon after; and the eighteenth before 1733.

19. Stem herbaceous, annual, one foot high, ſomewhat erect, diffuſed, whitiſh, obtuſely four-cornered, with purple joints. Leaves crenate. Flowers red, in long cloſe ſpikes: corolla ſomewhat bell-ſhaped. Stamens four, nearly equal to the corolla.—In the gardens of Cochinchina[b].

20. Stem woody, hairy, ſubdichotomous, round. Branches a ſpan long and more. Leaves alternate, narrow-lanceolate; the lower ones narrowing into a very ſhort petiole; the upper ones ſeſſile, half an inch long, bluntiſh, wrinkled, hiſpid eſpecially towards the edge; hairs preſſed cloſe, placed on minute tubercles. Spikes lateral and terminating, an inch long, compact. Calyx hairy, five-cleft; with linear, blunt ſegments. Corolla hairy on the outſide, longer than the calyx: tube widening in the middle, contracting at top; throat pervious; limb five-cleft, with a tooth-like plait between the clefts. Stigma conical, with two teeth at the tip, ſurrounded at the baſe with a ring.

21. Stem ſhrubby, round, dichotomous, the ſize of a pigeon's quill. Branches ſlender, a ſpan long, villoſe, tomentoſe above. Leaves half an inch long, acute, ſoft eſpecially underneath, marked with three lines on both ſides. Spikes lateral and terminating. Bractes linear, acute. Calyx villoſe, with lanceolate ſegments. Corolla ſmooth, longer than the calyx; tube widening at top; throat pervious; a tooth between the ſegments of the limb. Style filiform. Stigma conical, acute, quite entire, villoſe at the tip. Seeds villoſe. Diſtinguiſhed from the foregoing by the form and hairineſs of the leaves, with the edge not at all waved; by the preſenceof bractes; by the ſmoothneſs of the corolla; and by the ſtigma being quite entire.—They are both natives of Arabia, and by their habit, infloreſcence and tooth between the ſegments of the corolla, belong to this genus.

22. Branches round, hoary with ſmall hairs preſſed cloſe. Leaves on very ſhort petioles, ſharp, rugged on the upper ſurface with white dots, on which hairs are placed, the edge rolled back above, but flat towards the baſe. Peduncle terminating, erect, bifid: the lateral ones ſometimes with ſimple ſpikes. Bracte linear, the length of the calyx; which is hairy. Corolla white, larger than in the other ſorts.

Perhaps only a variety of H. fruticoſum, with broader leaves.—Native of the Weſt Indies.

23. Stem erect, herbaceous, ſimple, only branching a little at the baſe, a foot high, the ſize of a gooſe quill, villoſe. Leaves petioled; at the root many; on the ſtem few, alternate; ternate, or pinnate with two pairs and an odd leaflet. Leaflets alternate, lanceolate, acute, ſoftly villoſe, greeniſh aſh-coloured, quite entire, flat, nerved; the end-one two inches long, uſually ſhorter on one ſide at the baſe; the lateral ones ſubſeſſile, much ſmaller. Peduncles axillary and terminating. Spikes undivided, very hairy. Flowers crowded. Found by Thouin at the ſtraits of Magellan.

24. Branches hairy. Leaves alternate, two inches long, obſcurely repand, a little narrowed towards the baſe, greeniſh-hoary on both ſides with minute hairs preſſed cloſe, ſmooth along the nerves, but not marked with lines, veinleſs, nerved underneath. From the axils there are rudiments of branchlets. Peduncle terminating, hairy, twice or thrice dichotomous at top. Tube of the corolla twice as long as the calyx, with fewer villoſe hairs ſcattered over it. It has the habit of H. peruvianum, and was found in Braſil by Thouin[c].]

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[b] Loureiro.

[c] Vahl.

PROPAGATION AND CULTURE.

1. May be propagated either by ſeeds or cuttings. The ſeeds may be ſown upon a moderate hot-bed in the ſpring: when the plants are fit to remove, tranſplant them into ſmall pots filled with light earth, plunge them into a hot-bed, and ſhade them till they have taken new root; then inure them by degrees to the air, into which remove them in ſummer, placing them in a ſheltered ſituation: in autumn houſe them in a good greenhouſe, where they will flower great part of winter.—If the cuttings be put into pots filled with light earth, during any of the ſummer months, and plunged into a moderate hot-bed, they will take root freely, but theſe do not make ſo good plants as thoſe raiſed from ſeed.

[A ſtove is moſt congenial to this plant in winter. A pure atmoſphere is eſſential to its exiſtence. In hot weather it muſt be well ſupplied with water, and in winter it muſt be carefully guarded againſt froſt, ſo fatal to moſt of the natives of Peru[d].]

2, 3, 9. Sow the ſeeds on a hot-bed in the ſpring, and when the plants are fit to remove, tranſplant them on another hot-bed, to bring them forward, treating them in the ſame way as the Balſamine, and other tender annual plants: in June take them up with balls of earth, and plant them in the borders of the flower garden, where they will flower, and in warm ſeaſons produce ripe ſeeds.

5, 7. Theſe are annual ſorts, which ſucceed better from ſeeds which ſcatter in the autumn, or are ſown at that ſeaſon, than in the ſpring; for when they are ſown in the ſpring, they ſeldom come up the ſame ſeaſon; but if the ſeeds be ſuffered to ſhed, theſe plants will maintain themſelves, without any other culture, but keeping them clean from weeds, and thinning them where they are too cloſe.

8, 17, 18. Theſe are propagated by ſeeds, but the difficulty of getting them freſh from America, and the uncertainty of their growing unleſs they are ſown abroad, and brought over in earth, has rendered them rare in Europe. Being plants of little beauty, requiring a ſtove, with a peculiar ſoil and management, they have been cultivated merely for variety in botanic gardens.

11. This is propagated by ſeeds, which muſt be procured from the places where it naturally grows, for it never produces any in Europe; theſe ſeeds ſhould be ſown in a tub of earth in the country, for when the dried ſeeds come over they ſeldom grow; and if they do, it is not before the ſecond year: and from ſeveral parcels of the ſeeds which I have received from the Weſt Indies, I have not raiſed more than two plants, and theſe came up from the ſeeds which had been ſown more than a year; ſo that if the ſeeds are ſown as ſoon as they are ripe in a tub of earth, when they arrive in England, the tub ſhould be plunged into a hot-bed of tanners bark, which will bring up the plants; and when theſe are fit to remove, they ſhould be each planted in a ſeparate ſmall pot filled with earth, compoſed of ſand and light undunged earth, with a little lime rubbiſh well mixed together, then plunged into a hot-bed of tanners bark, and ſhaded until they have taken new root; after which, they muſt be treated as other tender exotic plants, always keeping them in the tan-bed in the ſtove, giving them but little water eſpecially during the winter ſeaſon.

15, 16. Theſe are too tender to live through the winter in the open air in this country, ſo muſt be kept in a green-houſe during that ſeaſon; but only requiring to be ſcreened from froſt, they may be placed with Myrtles and the other hardy green-houſe plants, where they may have a large ſhare of air in mild weather, and be treated in the ſame way; they are eaſily propagated by cuttings during any of the ſummer months, which, if planted in a ſhady border and duly ſupplied with water, will take root in five or ſix weeks; then they may be potted, and placed in a ſhady ſituation till they have taken new root, after which they may be treated as the old plants.

[The other ſorts have not yet been introduced into our gardens.

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[d] Curtis.

HELIOTROPIUM. See *Lithoſpermum*, *Mentha*, *Tournefortia*.

———— canarienſe. See *Byſtropogon*.

———— tricoccon. See *Croton*.

HELIX. See *Hedera* and *Salix*.

HELLEBORASTER, }
HELLEBORASTRUM,] } See *Helleborus*.
HELLEBORE, }

[HELLEBORE, WHITE. See *Veratrum*.]

HELLEBORINE. See [*Arethuſa*, *Cypripedium*, *Epidendrum*,] *Limodorum*, *Satyrium*, and *Serapias*.

HELLEBORUS. (Ελλεϐορος *of Dioſcorides*: παρὰ τὸ ἑλεῖν τῇ βορᾷ, *becauſe it deſtroys thoſe who eat it. Ray.*—*From* εἰλέω, *conſtringo, and* βορα, *pabulum, a conſtringing, ſuffocating, or poiſonous food. Moriſon* and *Linneus.*—*From the river Eleborus. Berg.*)

Engl. *Hellebore*. Fr. *Ellebore*. Ital. *Elleboro*. Span. *Eleboro*. Port. *Heleboro*. Germ. *Nieſwurz*. Dutch *Nieſkruid*. Dan. *Nyſeurt*. Swed. *Pruſtrot*. *Lin. gen. n.* 702. *Reich.* 760. *Schreb.* 956. *Tournef.* 144. *Juſſ.* 233. *Gærtn. t.* 65.

Claſſ. 13. 7. Polyandria Polygynia.

Nat. order of *Multiſiliquæ*.—*Ranunculaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. none—unleſs the corolla, which in ſome ſpecies is permanent, be conſidered as ſuch.

COR. *Petals* five, roundiſh, blunt, large.

Nectaries ſeveral, very ſhort, placed in a ring, one-leafed, tubular, narrower at bottom: *mouth* two-lipped, upright, emarginate, the inner lip ſhorteſt.

STAM. *Filaments* numerous, ſubulate. *Anthers* compreſſed, narrower at bottom, upright.

PIST. *Germs* about ſix, compreſſed. *Styles* ſubulate. *Stigmas* thickiſh. (Piſt. five or more, permanent, *G.*)

PER. *Capſules* (leguminous, beaked, *G.*) compreſſed, two-keeled: the lower keel ſhorter; the upper convex, gaping.

SEEDS ſeveral, round, fixed to the future.

OBS. H. hyemalis *drops its petals*; *the other ſorts retain them, and they become green. The number of piſtils varies much.*

ESSENTIAL CHARACTER.

Cal. none. *Pet.* five, or more (or *Calyx* five-leaved, *Cor.* none.) *Nect.* two-lipped, tubular. *Capſ.* many-ſeeded.

SPECIES.

1. Helleborus hyemalis. *Winter Hellebore* or *Aconite*. *Lin. ſpec.* 783. *Reich.* 2. 671. *hort. cliff.* 227. *upſ.* 158. *mant.* 408. *Hall. helv. n.* 1191. *Jacqu. auſtr.* 3. *t.* 202. *Krock. ſileſ. n.* 892. *Curtis magaz. t.* 3. *Blackw. t.* 576. *Mor. hiſt.* 3. 459. *n.* 4. *ſ.* 12. *t.* 2. *f.* 4. *Berg. phyt. t.* 91.

Aconitum unifolium luteum bulboſum. *Bauh. pin.* 183.

A. hyemale. *Camer. epit.* 728. *Ger.* 819. *emac.* 968. *Park. theat.* 314. *f.* 4. *parad.* 214. *t.* 219. *f.* 1. *Raii hiſt.* 700.

A. luteum minus. *Dod. pempt.* 352.

Flowers ſolitary ſitting in the upper leaf.

[2. Helleborus ranunculinus. *Ranunculus-leaved Helleb.* *Smith ic. ined.* 2. 37.

H. niger orientalis ranunculi folio, flore nequaquam globoſo. *Tournef. cor.* 20.

Flowers ſolitary peduncled, leaves digitate-multifid gaſhed.]

3. Helleborus niger. *Black Hellebore*, or *Chriſtmas Roſe*. *Lin. ſpec.* 783. *Reich.* 2. 671. *mant.* 408. *hort. cliff.* 227. *upſ.* 157. *mat. med.* 142. *Woodv. med. bot.* 50. *t.* 18. *Scop. carn. n.* 696. *Jacqu. auſtr.* 3. *t.* 201. *Allion. pedem. n.* 1512. *Krock. ſileſ. n.* 893. *Villars dauph.* 3. 716. *Blackw. t.* 506, 507. *Curtis magaz. t.* 8. *Berg. phyt.* 2. *t.* 21. *Lob. adv.* 304.

H. niger fl. roſeo. *Bauh. pin.* 186. *Mor. hiſt. t.* 4. *f.* 1.—legitimus. *Cluſ. hiſt.* 1. 275.—verus. *Ger.* 825. *f.* 1. *emac.* 976. 1. *Park. parad.* 344. *t.* 343. *f.* 6. *theat.* 212. *f.* 1. *Raii hiſt.* 697.—fl. albo, & rubente. *Bauh. hiſt.* 3. 635.

Stem almoſt naked with one or two flowers, leaves pedate.

4. Helleborus viridis. *Green Hellebore.* *Lin. ſpec.* 784. *Reich.* 2. 672. *mant.* 408. *hort. cliff.* 227. *upſ.* 158. *Gærtn. fruct.* 1. 310. *Hudſ. angl.* 245. *With.* 581. *Lightf. ſcot.* 297. *Relh. cant. n.* 414. *Engl. bot.* 200. *Hall. helv. n.* 1192. *Scop. carn. n.* 697. *Jacqu. auſtr.* 2. *t.* 106. *Krock. ſileſ. n.* 894. *Villars dauph.* 3. 717. *Blackw. t.* 509, 510.

H. niger hortenſis, fl. viridi. *Bauh. pin.* 185. *Raii hiſt.* 697. *ſyn.* 271.—ſylveſtris, latiore fol., fl. vir. *Mor. hiſt. t.* 4. *f.* 5.

Helleboraſtrum. *Lob. ic.* 1. *t.* 680. *f.* 2. *Ger.* 825. *f.* 2. *emac.* 976. 2.

Helleboraſter minor, fl. viridante. *Park. theat.* 212. *f.* 2.

Elleborus niger adulterinus domeſticus. *Trag.* 405.—hortenſis. *Fuchſ.* 274.—vulgaris, flore viridi vel herbaceo, radice diuturna. *Bauh. hiſt.* 3. 636.—alter. *Matth.* 1221.

Pſeudohelleborus niger. *Dod.* 385. 2.

Elleborum nigrum alterum. *Camer. epit.* 941.

Veratrum nigrum. *Cluſ. hiſt.* 1. 275. 1.

Stem bifid, branches leafy two flowered, leaves digitate.

5. Helleborus fœtidus. *Stinking Helleb.*, or *Bear's-foot.* *Lin. ſpec.* 784. *ſyſt.* 519. *Reich.* 2. 672. *hort. cliff.* 227. *Hudſ. angl.* 245. *With.* 582. *Relh. cant. n.* 415. *Hall. helv. n.* 1193. *Pollich pal. n.* 540. *Villars dauph.* 3. 717. *Woodv. med. bot.* 53. *t.* 19. *Blackw. t.* 57. *Berg. phyt.* 187.

H. niger fœtidus. *Bauh. pin.* 185. *Mor. t.* 4. *f.* 6.

Elleborus niger ſylveſtris adulterinus. *Trag.* 251. *Fuchſ.* 273. *Bauh. hiſt.* 3. 880.

Helleboraſter maximus. *Lob. ic.* 1. 679. 2. & 680. 1. *Ger.* 826. *emac.* 976. 3, 4. *Park. theat.* 213. *n.* 4. *t.* 212. *f.* 3. *Raii hiſt.* 698. 3. *ſyn.* 271.

Lycoctonum primum. *Dod.* 386.

β. H. latifolius. *Mill. dict. n.* 6.

Stem many-flowered leafy, leaves pedate.

6. Helleborus lividus. *Livid, purple, or great three-flowered Black Hellebore.* *Ait. hort. kew.* 2. 272. *Curtis magaz.* 72.

H. trifolius. *Mill. dict. n.* 4.

H. fœtidus β. *Lin. ſpec.* 784.

H. niger trifoliatus. *Aldini hort. farnes.* 93. *t.* 92. *Mor.* 460. *t.* 4. *f.* 7.

Stem many-flowered leafy, leaves ternate.

[7. Helleborus trifolius. *Small three-leaved Hellebore.* *Lin. ſpec.* 784. *Reich.* 2. 673. *amœn.* 2. 356. *t.* 4. *f.* 18. *Kalm. itin.* 3. 379. *ed. engl.* 3. 160. *Fl. dan. t.* 566.

Scape one-flowered, leaves ternate.

DESCRIPTIONS, &c.

The Hellebores are all hardy herbaceous perennials, with compound leaves, digitate, pedate, palmate or ternate. The flowers have only a ſingle cover, which is called a corolla by Linneus, by others a calyx; they grow either ſeveral together at the ends of the ſtalk and its ſubdiviſions with a ſingle bracte to each pedicel; or ſingle on a ſcape, naked or with a leaf for an involucre. They appear very early in the ſpring, and ſome of them even in winter.

1. Root tuberous, tranſverſe, with many dependent fibres, putting up ſeveral naked ſtems or ſcapes, ſimple, ſmooth, round, from an inch or two to four inches in height, terminated by a ſingle leaf, ſpreading out horizontally in a circle, divided into five parts almoſt to the baſe, and the parts ſimple or divided into two, three or four lobes. In the boſom of this ſits one large, upright, yellow flower; the petals ovate, marked with lines, converging a little, deciduous, uſually ſix in number (ſix to eight); piſtils ſix (four to ſix), and ſtamens about thirty [a].

Native of Lombardy and other parts of Italy; Auſtria, Sileſia, Switzerland; in mountainous ſituations. It flowers with us from january to march; and was cultivated by Gerarde in 1596. In his herbal publiſhed the year following, he informs us, that we had then great quantities of it in our London gardens; and therefore it is probable that it was known among us much earlier than 1596. He calls it Winter-Wolf's-bane, or ſmall yellow Wolf's-bane. According to Parkinſon, moſt herbariſts called it Winter Wolf's-bane; but ſome Yellow Aconite. The name of *Winter Aconite* has now generally obtained.

2. Stem a hand in height, upright, round, ſmooth, leafy at top, ſuſtaining one or two flowers. Root-

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[a] Linn. mant. Haller, Krocker.

leaves on long petioles; ſtem-leaves ſubſeſſile, embracing; ſerrate, ſmooth, paler underneath, variouſly gaſhed. Flowers axillary, ſolitary, peduncled, upright, yellow: petals roundiſh, ſpreading, marked with lines: nectaries numerous, curved, half the length only of the petals: filaments very ſhort; anthers linear, yellow. It is very nearly related to the foregoing ſpecies, but handſomer: it differs alſo in having the leaves more compound and gaſhed; the flower peduncled; the petals broader and more ſpreading. Tournefort firſt brought us acquainted with it from Cappadocia [b].

3. Roots tranſverſe, externally rough and knotted, with many dependent fibres, and ſome large roots ſtriking down. Scapes from ſix inches to near a foot in length, round, upright, variegated with red, riſing from a ſheath, and terminated uſually with one flower, ſometimes two, and very rarely three. Corolla very large, generally white at firſt, but frequently with a tint of red growing deeper with age, but finally becoming green: nectaries (eight or ten to twelve or thirteen) greeniſh yellow, the upper lip longeſt and ſlightly emarginate, the lower finely notched. Stamens more than ſeventy. Germs from four to eight. Each flower has a bracted leaf or two, ſupplying the place of the calyx. Leaves only from the root, deep and dark green, on long petioles; leaflets (five to eight or nine) ovate-lanceolate, ſmooth, fleſhy, the upper half ſerrate [c].

Native of Italy, Germany, Auſtria, Idria, Sileſia, in mountainous ſituations; flowering from december to march. Cultivated in 1596, by Gerarde [d].—It has the name of Black Hellebore from the colour of the root; and of Chriſtmas Roſe, from the time of flowering and the colour of the corolla.

4. Stem round, a little branched at top, but not near ſo much as in the next ſort; leafy, reddiſh at the baſe, upright, ſmooth, a foot or eighteen inches in height. Leaves not of a ſtiff, leathery conſiſtence, as in the next ſpecies, but ſoft and of a lighter green; thoſe from the bottom are on long petioles, but thoſe on the ſtem ſit cloſe to their ſheaths; the leaflets (ſeven to ten) are lanceolate, acuminate, ſharply ſerrate, ſmooth, gaſhed, uſually trifid, the diviſions ſometimes deeply lobed; and at the baſe of each peduncle is a ſimilar leaf, only ſmaller. Peduncles axillary, an inch long, round; ſupporting two (ſometimes only one) nodding, green flowers. Nectaries eight or ten, the length of the ſtyles, a little ſerrate and bent in on the rims, the upper lip truncate, and ſlightly two-toothed: ſtamens fifty or more, with pale yellow anthers, not having a ſharp point: piſtils three, ſeldom four, very ſeldom five. The anthers before they are ripe are in fifteen rows, all together forming a ball. The capſules terminate in a long linear-acuminate beak, each containing about ſixteen cylindric ovate ſeeds, wrinkled a little, and of a dark lead colour [e].

Native of France, Italy, Auſtria, Carniola, Sileſia, Switzerland, Great Britain. As in ſeveral places near Cambridge; Yorkſhire, near Leeds; in Suſſex, near Arundel Caſtle; Kent; Oxfordſhire; Northamptonſhire; Worceſterſhire; Hampſhire.—Parkinſon mentions his having ſeen it in ſome of the Northamptonſhire woods. Ray in his hiſtory gives no hint of this or the next ſpecies being natives of England; and ſeems in his Synopſis, to think that they are not aboriginals here. Bobart ſpeaks of this as growing wild abundantly in Stokenchurch woods, and many other rocky and hilly ſituations, but makes no mention of the fifth ſort being found wild in England.—In Dunglaſs-Glen, Scotland: in woods, and paſtures among buſhes. It flowers in march and april.

5. Root ſmall, but bent with a prodigious number of ſlender dark-coloured fibres. The ſtem is from eighteen inches to near a yard in height, towards the bottom round, ſtrong, naked, marked with alternate ſcars, the veſtiges of former leaves; dividing and ſubdividing at top into many branches, producing great abundance of flowers.] Leaves compoſed of eight or nine long narrow lobes, which join at their baſe, commonly four on each ſide united at bottom, and one in the middle on the centre of the foot-ſtalk, they are ſerrate and end in acute points; thoſe on the lower part of the ſtalk are much larger than thoſe on the upper, which are ſmall and narrow. [They are of a very deep green; but the branches, ſtipules, peduncles and flowers are of a pale yellowiſh green. At the diviſions of the branches are oval-lanceolate ſtem-claſping ſtipules deeply bifid at the extremity: at the baſe of each peduncle an oval-lanceolate entire bracte: both theſe are frequently tinged with purple. Flowers almoſt globular, pendent, on peduncles, forming a ſort of umbel: petals roundiſh, blunt, green with purple edges: ſtamens the length of the petals, with white anthers: germs three, hairy: nectaries from five to eight [f].

Native of Italy, Germany, Switzerland, France, England. As between Northfleet and Graveſend in Kent; near Cambridge; near Bungay and Brundiſh in Suffolk; Combury ſtone-quarry in Oxfordſhire: abundantly in Suſſex; in Hampſhire, and Somerſetſhire.

Gerarde ſays, that it was wild in his time in many woods and ſhadowy places in England. He calls it Bear-foot, Setter-wort, Setter-graſs, and Oxe-heele. The three laſt names are from its uſe in rowelling kine, or making a ſeton of the root, and putting it through the dew-lap; this operation was called by the old farriers *ſettering*, a corruption perhaps from ſetoning.

It flowers in november and december to march and april. Bees frequent the flowers much, early in the ſpring, though it is a plant ſo remarkably fetid.

This ſort is always green, whereas the foregoing dies down to the root every year.

Moſt, if not all the Hellebores, produce very powerful effects when uſed medicinally. The ſpecies moſt in uſe is the Helleborus niger, which is ſuppoſed to have been the plant ſo celebrated amongſt the ancients in the cure of madneſs: the taſte of the root when freſh, is bitteriſh, and according to Dr. Grew, " being chewed, and for ſome time retained upon the tongue, after a few minutes it ſeemeth to be benumbed, and affected with a kind of paralytic ſtupor, or as when it hath been burnt with eating or ſupping any thing too hot." It alſo emits a nauſeous acrid ſmell, but being long kept, both its ſenſible qualities and medicinal activity ſuffer very conſiderable diminution. Bergius has very properly attended to this circumſtance, for in defining its virtues he conſiders it under three different degrees of dryneſs. " Virtus *recentis* venenata, rubefaciens, veſicans; *recenter ſiccatæ* emetica, purgans; emmenagoga, antiphthiriaca, ſternutatoria; *diu conſervatæ* vix purgans, alterans, diuretica." Although many writers conſider this root as a perfectly innocent and ſafe medicine, yet we find ſeveral examples of its poiſonous effects; it ſhould therefore be uſed with proper caution. It ſeems to have been principally from its purgative quality that the ancients eſteemed this root ſuch a powerful remedy in maniacal diſorders, with a view to evacuate the *atra bilis*, from which theſe mental diſeaſes were ſuppoſed to proceed: but though evacuations be often found neceſſary in various caſes of alienation of mind, yet as they can be produced with more certainty and ſafety by other medicines, this catholicon of antiquity ſeems now almoſt entirely abandoned: it is however ſtill uſed in ſmall doſes for attenuating viſcid humors, promoting the uterine and urinary diſcharges, and opening inveterate obſtructions of the remoter glands: it often proves a powerful emmenagogue in plethoric habits, where ſteel is conſidered as improper: it is alſo uſed in dropſies; and in ſome cutaneous diſeaſes.

A ſpecies of ſimilar though leſs powerful virtue is the Helleborus fœtidus, or common black Hellebore, a native of England: this plant is very frequently uſed in popular phyſic as an anthelmintic; the powder of the dried leaves being the preparation principally made uſe of; and this in doſes of about fifteen grains for children. The decoction of about a dram of the green leaves being conſidered as equal to fifteen grains of the dry ones: it is uſually repeated on two, and ſometimes three ſucceſſive mornings, and ſeldom fails to bring away worms, if there be any in the inteſtinal tube.

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[b] Smith. [c] Krocker, Scopoli, Curtis. [d] Hort. kew.
[e] Krocker, Scopoli, Haller, Lightf. Woodw. Mſs. Gærtner.

[f] Woodville and Woodw. Mſs.

β. The lobes of the leaves in this variety are broader, and the ſtalks grow taller. It grows naturally in Iſtria and Dalmatia, and is not ſo hardy as ours, inſomuch that a ſevere winter deſtroys it.]

6. This reſembles H. viridis, but differs from it in having trifoliate leaves, which are broader and entire their ſurface alſo is ſmoother, and the ſtalks riſe higher than either of our common ſorts.

[The native place of this ſpecies is unknown. It flowers from january to may. Mr. Miller cultivated it in 1731 [g].

7. Stem leafleſs. Flower minute, reſembling that of the Parnaſſia, and white, (yellow) [h].

Native of Denmark, Canada, Siberia and Hudſon's-bay, whence it was introduced by the Hudſon's-bay Company in 1782 [i]. In Canada it is ſo abundant in the woods as to cover the ground in many parts: it commonly chooſes moſſy places, that are not very wet; Wood-ſorrel and Alpine Circæa are its companions. It is called *Tiſſavoyanne jaune* by the French, all over Canada. The leaves and ſtalks are uſed by the Indians, for giving a fine yellow colour to ſeveral kinds of work, which they make of ſkins. The French dye wool, &c. yellow with this plant [k]. It flowers here in june and july.]

PROPAGATION AND CULTURE.

1. This flowers very early in the ſpring, which renders it worthy of a place in all curious gardens, eſpecially as it requires but little room; it is propagated by offſets, which the roots ſend out in plenty; theſe roots may be taken up and tranſplanted, any time after their leaves decay, which is generally by the beginning of june, till october; when they will begin to put out new fibres; but as the roots are ſmall, and nearly of the colour of the ground, ſo, if care is not taken to ſearch them, many of the roots will be left in the ground; theſe roots ſhould be planted in ſmall cluſters, otherwiſe they will not make a good appearance; for ſingle flowers, ſcattered about the borders, of theſe ſmall kinds, are ſcarce ſeen at a diſtance; but when theſe and the Snowdrops are alternately planted in bunches, they will have a good effect, as they flower at the ſame time, and are much of a ſize.

[From the earlineſs of its flowering, the Winter Aconite is liable to be cut off by ſevere froſts.]

3. This is propagated by parting the roots in autumn, for the ſeeds ſeldom ripen in England: in order to have it flower well, it ſhould have a more ſheltered ſituation than the common ſorts.

[Like moſt alpine plants, it loves a pure air, a ſituation moderately moiſt, and a ſoil unmanured. The flowers being injured by froſt, in order to have them in beauty, the plants ſhould be covered during winter with hand-glaſſes; or preſerved in pots in a common hot-bed frame.—Neither this nor the firſt ſort thrive very near London [l].]

4, 5. If the ſeeds of theſe be permitted to ſcatter, or ſown ſoon after they are ripe, the plants will come up early in the following ſpring, and when they have obtained ſufficient ſtrength, may be tranſplanted into woods or wilderneſs quarters, where they will thrive and flower very well in the ſhade, and make a good appearance at a ſeaſon when very few other plants are in flower.

6. [It has been uſual to treat this ſpecies as a greenhouſe plant, or at leaſt to ſhelter it under a frame in the winter: probably it is more hardy than we imagine. It is propagated by parting its roots in autumn, and by ſeeds: but few of the latter ripen in general, nor do the roots make much increaſe. To theſe cauſes we muſt doubtleſs attribute its preſent comparative ſcarcity. On account of its early flowering (in february), as well as its ſingularity, it is a deſirable plant in collections [m].

Helleborus. See *Adonis*, *Aſtrantia*, *Iſopyrum*.]

——— albus. See *Veratrum*.

Helleborus flore globoſo. See *Trollius*.

Helmet-flower. See *Aconitum*.

Helminthotheca, and } See *Picris*.
Helmintia. }

HELONIAS.

Lin. gen. n. 458. *Reich.* 493. *Schreb.* 622. *Juſſ.* 47.
Claſſ. 6. 3. Hexandria Trigynia.
Nat. order of *Coronariæ.—Junci*, Juſſ.

GENERIC CHARACTER.

Cal. none:

Cor. *Petals* ſix, oblong, equal, deciduous:

Stam. *Filaments* ſix, ſubulate, a little longer than the corolla. *Anthers* incumbent.

Pist. *Germ* roundiſh, three-cornered. *Styles* three, ſhort, reflex. *Stigmas* blunt.

Per. *Capſule* roundiſh, three-celled.

Seeds roundiſh.

ESSENTIAL CHARACTER.

Cal. none. *Cor.* ſix-petalled. *Capſ.* three-celled.

SPECIES.

1. Helonias bullata. *Spear-leaved Helonias.*
Lin. ſpec. 485. *Reich.* 2. 130. *amœn.* 3. 12. *t.* 1. *f.* 1. *Pluk. alm. t.* 174. *f.* 5. *Mor. hiſt.* 3. 606. *ſ.* 15. *t.* 2. *f.* 1. (Ephemerum).]
Veratrum americanum. *Mill. dict. n.* 4. *fig.* 181. *t.* 272.
Leaves lanceolate nerved.

[2. Helonias aſphodeloides. *Graſs-leaved Helonias.*
Lin. ſpec. 485. *Reich.* 2. 130. *Pluk. mant. t.* 342. *f.* 3. (Aſphodelus).
Stem-leaves ſetaceous.]

DESCRIPTIONS, &c.

1. Root perennial, compoſed of many thick fleſhy fibres. Leaves ſpreading near the ground, and ſitting cloſe to the root at their baſe, of a light green colour, having ſix longitudinal nerves, which appear ſtrongeſt on the under ſide; they are four or five inches long, two or three broad in the middle, narrowing gradually to both ends, and continuing green all the year. In the centre of theſe ſprings up a ſingle erect ſtalk, a foot in height, having a few veſtiges of ſmall leaves, ending in ſharp points, ſtanding alternately cloſe to the ſtalk: this is terminated by a cloſe obtuſe ſpike of dark-red flowers, with petals ſpreading open flat; the filaments are twice the length of theſe; and the anthers are four-cornered, of a blue purple colour. Some of the flowers have no ſtigma, and are barren. It flowers the latter end of june (april and may, *H. K.*), and in warm ſeaſons the ſeeds will ripen here.

I was firſt favoured with this ſpecies by Mr. Peter Collinſon; and afterwards received a plant, with a drawing of it made in the country where it naturally grows, from Mr. John Bartram, junior: I have ſince been furniſhed with more plants by Dr. Benſel of German Town in Philadelphia, who found it growing plentifully in ſhady moiſt places.

[This plant is called *Star-graſs* by the natives; and is of an acrid aromatic flavour [n].

2. Stem extremely ſimple, two feet high. Leaves alternate or ſcattered, upright, even but rugged at the edge. Flowers white, in a ſimple, terminating raceme, on peduncles longer than the flowers. It reſembles an Aſphodel very much, but has three recurved ſtyles.—Native of Penſylvania [o], and Virginia. Introduced in 1765, by Mr. William Young. It flowers in may and june [p].]

PROPAGATION AND CULTURE.

Theſe plants may be increaſed by offſets taken from the roots in autumn; or by ſeeds which ſhould be ſown as ſoon as ripe. They prefer a light freſh ſoil, and are hardy enough to thrive in the open air. They muſt not be removed oftener than once in three or four years; and they are as long in coming to flower from the ſeed.

[HELVELLA.

Lin. gen. Reich. n. 1330. *Schreb.* 1679. Elvela. *Lin. gen. n.* 1214. Fungoidaſter. *Micheli* 82. Fungoides. *Mich.* 86. Fungoidis ſpec. *Vaill. B. P.* xi. 8.

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[g] Hort. kew.
[h] Linn. amoen.
[i] Hort. kew.
[k] Kalm.
[l] Curtis.
[m] Ibid.
[n] Mor. hiſt.
[o] Linn. ſpec.
[p] Hort. kew.

GENERIC CHARACTER.

A turbinated Fungus, with both upper and under ſurface ſmooth.

SPECIES.

1. Helvella Mitra.—Stipitated. Figured by *Micheli, gen. t.* 86. *f.* 7, 8, 9. *Schæff. fung.* 159—162, 154, 282, 320 & 322. *Battar. fung.* 25. *t.* 3. *f.* B. & 24. *t.* 2. *f.* G.

2. H. pineti.—Without any ſtalk. *Lin. ſuec. n.* 1243. *fl. lapp. n.* 517. (Agaricus).

They are both natives of England, in woods. Mr. Hudſon adds a third.

3. H. plana. *Hudſ. angl.* 633. 2.

And Swartz adds three more.

4. H. verſicolor.

5. H. tremellina.

6. H. atrata. *Prodr.* 149.

All ſtemleſs: and natives of Jamaica.

Loureiro has, beſides the two firſt, a new one, under the name of

7. H. amara.

Stipitated, paraſitical, eſculent and wholeſome.

Helxine. See *Convolvulus*, *Parietaria*, and *Polygonum*.]

HEMEROCALLIS. (*From* Ἡμέρος, *a day*; *and* Κάλλος, *beauty. A plant whoſe flower is the beauty of a day.*)

Engl. *Day-Lily.* Fr. *Lis-Aſphodele.*

Lin. gen. n. 433. *Reich.* 467. *Schreb.* 585. *Juſſ.* 54. *Gærtn. t.* 83, 179. Lilio-Aſphodelus. *Tournef.* 179. (With the flower of a Lily, and the root of Aſphodel.)

Claſſ. 6. 1. Hexandria Monogynia.

Nat. order of *Lilia* or *Liliaceæ*.—*Coronariæ*, Lin.——*Narciſſi*, Juſſ.

GENERIC CHARACTER.

Cal. none.

Cor. ſix-parted, bell-funnel-form: *tube* ſhort: *border* equal ſpreading, more reflex at top.

Stam. *Filaments* ſix, ſubulate, the length of the corolla, declining; upper ones ſhorter. *Anthers* oblong, incumbent, riſing.

Pist. *Germ* roundiſh, furrowed, ſuperior. *Style* filiform, the length and ſituation of the ſtamens. *Stigma* obtuſely-three-cornered, riſing.

Per. *Capſule* ovate-three-lobed, three-cornered, three-celled, three-valved.

Seeds very many, roundiſh.

ESSENTIAL CHARACTER.

Cor. bell-ſhaped: the tube cylindric. *Stam.* declining.

SPECIES.

1. Hemerocallis flava. *Yellow Day-Lily.*

Lin. ſpec. 462. *ſyſt.* 339. *Reich.* 2. 91. *hort. upſ.* 88. *cliff.* 128. *Gmel. ſib.* 1. 37. *Krock. ſileſ. n.* 539. *Jacqu. hort.* 2. 65. *t.* 139. *Curtis magaz.* 19.

H. lutea. *Gærtn. fruct.* 2. 15.

H. Lilio-Aſphodelus. *Scop. carn. n.* 425.

Lilio-Aſphodelus luteo flore. *Cluſ. hiſt.* 1. 137. *Park. parad.* 148. 2. *t.* 149. *f.* 4. *Bauh. hiſt.* 2. 700. *Raii hiſt.* 1191. 1.

Lilium luteum, aſphodeli radice. *Bauh. pin.* 80. *Mor. hiſt.* 2. 412. *ſ.* 4. *t.* 21. *f.* 1.

L. non bulboſum. *Ger.* 90. *f.* 1. *emac.* 98. 1.

Aſphodelus liliaceus, luteo odorato flore. *Beſl. eyſt. vern.* 9. *t.* 5. *f.* 3.

β. H. minor. *Mill. dict. n.* 2.

Lilio-aſphodelus luteus minor. *Tournef. inſt.* 344. *Mor.* 412. 2.

Leaves linear-ſubulate keeled; corollas yellow.

2. Hemerocallis fulva. *Copper-coloured Day Lily.*

Lin. ſpec. 462. *ſyſt.* 339. *Reich.* 2. 91. *Thunb. jap.* 142. *Loureiro cochinch.* 205. *Curtis magaz.* 64.

Lilio-Aſphodelus puniceus. *Cluſ. hiſt.* 1. 137. *Park. parad.* 148. *t.* 149. *f.* 5. *Bauh. hiſt.* 2. 701. *f.* 1. *Raii hiſt.* 1191. 2.

Lilium rubrum aſphodeli radice. *Bauh. pin.* 80. *Mor.* 412. 3. *t.* 21. *f.* 3.

L. non bulboſum phœniceum. *Ger.* 90. *f.* 2. *emac.* 98. *f.* 2.

Leaves linear-ſubulate keeled, corollas tawny or copper-coloured.

[3. Hemerocallis lancifolia.

Thunb. in Linn. tranſ. 2. 335.

H. japonica. *Lin. ſyſt.* 339. *Thunb. jap.* 142.

Aletris japonica. *Thunb. nov. act. upſ.*

Leaves lanceolate ſeven-nerved.

4. Hemerocallis japonica.

Thunb. in Linn. tranſ. 2. 335. *Kæmpf. ic. ſelect. t.* 11.

Leaves ovate waved many-nerved.

5. Hemerocallis cordata.

Lin. ſyſt. 339. *Thunb. jap.* 143. *Gærtn. fruct.* 2. 484.

Leaves heart-ſhaped veined.]

DESCRIPTIONS, &c.

1. The firſt ſort has ſtrong fibrous roots, to which hang knobs, or tubers, like thoſe of the Aſphodel, from which come out leaves, two feet long, with a rigid midrib, the two ſides drawing inward, ſo as to form a ſort of gutter on the upper ſide. The flower-ſtalks riſe two feet and a half high, having two or three longitudinal furrows; theſe are naked, and at the top divide into three or four ſhort peduncles, each ſuſtaining one pretty large yellow flower ſhaped like a Lily, having but one petal, with a ſhort tube, ſpreading open at the brim, where it is divided into ſix parts; theſe have an agreeable ſcent, from which ſome have given them the title of yellow Tuberoſe. It flowers in june, and the ſeeds ripen in auguſt.

[Parkinſon obſerves, that "this agrees with the following ſort ſo nearly, as that it might ſeem to be the ſame; but the leaves are not fully ſo large, nor the flower ſo great or ſpread open: the colour is a fair yellow wholly; it is very ſweet; and it abideth blown many days before it fade[a]." Hence this ſpecies does not correſpond entirely with its name of Hemerocallis or Day-Lily.

Native of Siberia, Hungary, Dalmatia, Iſtria; it has eſtabliſhed itſelf in Switzerland, Sileſia, &c.

"Theſe Lilies," (this and the following ſpecies) ſays Gerarde, "do grow in my garden, and in the gardens of herbariſts and lovers of fine and rare plants." He calls it Liriconfancie or Yellow Lillie. By Parkinſon it is named Yellow Day-Lilly.]

β. The variety has ſmaller roots; the leaves are not near ſo long, have not more than half the breadth, and are of a dark green colour. The flower-ſtalk is a foot and half high, naked and compreſſed, without furrows; at the top are two or three yellow flowers, which are nearer the bell ſhape than the others, and ſtand on ſhorter peduncles. This flowers the beginning of june, and the ſeeds ripen early in auguſt. It grows naturally in Siberia.

2. This is a much larger plant than the firſt, and the roots ſpread and increaſe much more, therefore it is not proper furniture for ſmall gardens; the roots have very ſtrong fleſhy fibres, to which hang large oblong tubers. The leaves are near three feet long, hollowed like thoſe of the former, turning back toward the top. The flower-ſtalks are as thick as a man's finger, and riſe near four feet high; they are naked, without joints, and branching at the top, where are ſeveral large copper-coloured flowers, ſhaped like thoſe of the Red Lily, and as large. The ſtamens of this ſort are longer than thoſe of the other, and their ſummits are charged with a copper-coloured farina, which ſheds on being touched. Theſe flowers never continue longer than one day, but there is a ſucceſſion of flowers on the ſame plants for a fortnight or three weeks; it flowers in july and auguſt.

[This, ſays Linneus, ſeems to be ſpecifically different from the foregoing, though no real difference is diſcovered: it is larger in ſize, the corolla is copper-coloured, and the flowers appear later. To theſe diſtinctions we may add, that the flowers of the *fulva* have little or no ſmell, whereas thoſe of the *lutea* are very fragrant; that the former are much ſhorter lived; and that they are ſeldom or never ſucceeded by ſeed; whereas the *lutea* generally produces ripe ſeed. Certainly none of theſe circumſtances can be admitted as genuine ſpecific differences: and yet it is remarked by Mr. Curtis, that when the ſeveral characters in which the *fulva* differs ſo eſſentially from the *flava* are attentively conſidered, we ſhall wonder that Linneus could entertain an idea of their being varieties of each other. He obſerves, that the leaves of this ſpecies on their firſt emerging from the ground, and for a conſiderable time afterwards are of the moſt delicate green imaginable; that the appearance which the plant aſſumes at this period of its growth is indeed ſo pleaſing, as to conſtitute half its beauty; that its bloſſoms are twice the ſize of thoſe of the *flava*, of a tawny orange colour, without gloſs or ſmell, the petals waved on the edge, and the flowers rarely or never ſucceeded by ripe capſules.

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[a] Parad. 148.

In contradiction to this opinion, I cannot but relate a caſual experiment communicated to me by my ingenious friend Miſs Welch of Ardenham-hill, near Ayleſbury. In the year 1788 ſhe removed ſeveral plants from Hampſtead to a new garden ſhe was then making in Buckinghamſhire. The ſoil was a ſtiff clay manured with pond mud, ſand, and dung in ſome parts; in others it was a compoſt formed of the ruins of buildings and limeſtone, mixed with a mould produced from a variety of animal and vegetable ſubſtances. The plants were firſt placed in the clayey ſoil. Among them was a ſingle plant of Hemerocallis fulva. The ſucceeding year ſhe divided this plant, and put part of it in a ſhallow bed of the compoſt formed from the ruins, &c. It ſhot very freely, ſo that ſhe was able to take off another part of the the plant, and the ſame ſummer ſet it in the ſame bed. When the laſt plant flowered ſhe was agreeably ſurpriſed with the ſight of an Hemerocallis flava, which ſhe is poſitive ſhe was not poſſeſſed of, till it was thus produced by accident. The year after, ſhe had plants varying in ſize and colour, large and of a deep tawny hue, ſmall and abſolutely yellow, and alſo of a pale tawny, and of a ſize between *fulva* and *flava*[b]. The change of colours in flowers occaſioned by removing plants into a ſoil of a different nature, is a circumſtance well known to floriſts[c].

Its natural place of growth was not known to the old botaniſts. Linneus makes it to be a native of China. Father Loureiro ſays it is cultivated there and in Cochinchina, but does not affirm that it is a native. Thunberg inſerts it among the Japoneſe plants in theſe words—*creſcit hinc inde, ſæpe culta*: it grows here and there, often cultivated. In the catalogue of the Royal Garden at Kew, it is a native of the Levant. Does not this uncertainty favour the idea of its being rather a variety than a diſtinct ſpecies?

In Japan it varies with a double flower, and with variegated leaves[d].

In China and Cochinchina the inhabitants boil the flowers, both freſh and dry, commonly with their meat[e].

3. Leaves next the ground acuminate, ſpreading at the tip, entire, upright, deep green on the upper ſurface, a finger's length; ſome almoſt a hand, others only an inch broad: petioles channelled, fleſhy, awl-ſhaped, ſmooth, longer than the leaf. Scape round, jointed, upright, ſmooth, longer than the leaves. Bractes at the joints of the ſcape and under the peduncles ovate, concave, ſmooth. Flowers at the top of the ſcape in racemes, drooping. Peduncle round, ſmooth, half an inch in length. Corolla white; tube furrowed, half an inch long. Filaments longer than the corolla, equal, filiform, faſtened to the baſe of the corolla by the ſide of the germ; which is ovate and ſmooth; ſtyle longer than the ſtamens; ſtigma ſimple, white. Capſule oblong, ſix-furrowed, ſmooth.

Native of Japan, and frequently kept in gardens and houſes there, for its elegance: flowering in auguſt and ſeptember[f].

4. Leaves radical, petioled, acuminate, very finely veined tranſverſely, ſmooth, a hand in length. Petioles winged, membranaceous, a hand in length or rather more. Flowers as in the foregoing ſpecies.—Native of Japan[g].

5. Stem round, upright, ſmooth, a foot high or more. Leaves alternate, petioled, ovate-oblong, acute, pale underneath, ſmooth on both ſides, upright, a ſpan long and a hand broad, the younger ones gradually ſmaller and leſs cordate: petioles compreſſed, winged, the length of the leaf. Flowers terminating, alternate, upright. Capſule an inch in length, ovate, angular, ſmooth, ſix-valved, ſix-celled. Seeds numerous in each, imbricate, orbiculate, depreſſed, ſmooth, ſurrounded with a membranaceous wing[h];—obovate-triangular, leafy-compreſſed, diaphanous; edged with a very thin, broad, tranſparent membrane, of a ſhining golden colour, with two opake lines from the baſe towards the nucleus[i].

Gærtner doubts whether this be a genuine ſpecies of Hemerocallis, ſince it differs ſo much in the fruit.

Native of Japan, and frequently cultivated there[k].]

PROPAGATION AND CULTURE.

1, 2. Theſe plants are eaſily propagated by offsets, which the roots ſend out in plenty; they may be taken off in autumn, that being the beſt ſeaſon for tranſplanting the roots, and planted in any ſituation, for they are extremely hardy, and will require no other culture but to keep them clean from weeds, and to allow them room that their roots may ſpread; the firſt ſort may alſo be propagated by ſeeds, which if ſown in autumn, the plants will come up the following ſpring, and theſe will flower in two years; but if the ſeeds are not ſown till ſpring, the plants will not come up till the year after.

In a moiſt ſoil and a ſhady ſituation they thrive better than in dry ground. [From their ſize, and the great increaſe of their roots, eſpecially in the ſecond ſort, they are moſt proper for large gardens and plantations.

Hemerocallis. See *Alſtroemeria*, *Lilium*, *Pancratium*.

——— Liliastrum. See *Anthericum*.

HEMIMERIS.

Lin. gen. Schreb. n. 1016. *Suppl.* 45. *Thunb. nov. gen.* 74. *Juſſ.* 120.

Claſſ. 14. 2. Didynamia Angioſperma.

Nat. order of *Perſonatæ.—Scrophulariæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, five-parted almoſt to the baſe, much ſhorter than the corolla: *parts* ovate, unequal, permanent.

Cor. monopetalous, wheel-ſhaped, ringent: *tube* very ſhort (ſcarcely any), intruded, white. *Upper lip* cloven, with a kind of bag at the baſe compoſed of little nectareous pits: *lower* concave, blunt.

Stam. *Filaments* two or four, filiform, inſerted into the baſe of the lower lip, bent round. *Anthers* very ſmall, heart-form, cohering, yellow.

Pist. *Germ* ſuperior, ſharp, ſmooth. *Style* thread-form, of the ſame length and in the ſame ſituation with the ſtamens. *Stigma* ſimple, ſharpiſh.

Per. *Capſule* ovate, ſharp, twin, gibbous at the baſe on one ſide, two-celled, two-valved.

Seeds very many, ſmooth.

Obs. *Allied to* Antirrhinum, *but differing in the form of the corolla.*

ESSENTIAL CHARACTER.

Cal. five-parted. *Cor.* wheel-form: upper lip cloven, with a nectareous bag at the baſe.

SPECIES.

1. Hemimeris ſabuloſa.
Lin. Syſt. 561. *Suppl.* 280.
Diandrous; leaves oppoſite pinnatifid, ſtem proſtrate.

2. Hemimeris montana.
Lin. Syſt. 561. *Suppl.* 280.
Diandrous; leaves oppoſite, ovate, ſerrate; ſtem upright.

3. Hemimeris diffuſa.
Lin. Syſt. 561. *Suppl.* 280.
Didynamous; leaves alternate and oppoſite pinnatifid; ſtem patulous.

Native of the Cape. Detected there by Thunberg. Perhaps the ſecond may be only a variety of the firſt ſpecies.

Hemionitidi Affinis. See *Polypodium*.]

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[b] Linn. tranſ. 2. 353.

[c] See Bradley's Philoſoph. account of the Works of Nature. p. 79.

[d] Thunberg. [e] Loureiro. [f] Thunberg. [g] Ibid.

[h] Thunberg. [i] Gærtner. [k] Thunberg.

HEMIONITIS. (*From* Ἡμίονος, *a Mule.—Becauſe it was ſuppoſed to be barren.*

Engl. *Mule-Fern.*

[*Lin. gen.* 1176. *Reich.* 1293. *Schreb.* 1628. *Juſſ.* 15.

Claſſ. 24. 2. Cryptogamia Filices, or Ferns.

GENERIC CHARACTER.

Capſules digeſted into lines, meeting together, either interſecting each other or branched.

SPECIES.

1. Hemionitis lanceolata.
Lin. ſpec. 1535. *Reich.* 4. 399. *Brown. jam.* 95. 1. *Petiv. fil.* 122. *t.* 6. *f.* 4. (Phyllitis). *Plum. fil.* 127. *f.* 6. (Lingua cervina).
Fronds lanceolate quite entire.

2. Hemionitis lineata.
Swartz prodr. 129.
Frond lanceolate-linear, lines of fructifications nearly parallel longitudinal.

3. Hemionitis paraſitica.
Lin. ſpec. 1535. *Reich.* 4. 399. *Brown. jam.* 95. 2.
Fronds ovate acuminate, ſhoots chaffy creeping.

4. Hemionitis palmata.
Lin. ſpec. 1535. *Reich.* 4. 400. *hort. cliff.* 474. *Plum. amer.* 23. *t.* 33. *fil. t.* 151. *Brown. jam.* 95. 3. *Sloan. jam.* 1. 72. 8. *Mor. hiſt.* 3. 560. *ſ.* 14. *t.* 1. *f.* 5. *Petiv. fil.* 177. *t.* 8. *f.* 11. *Pluk. alm. t.* 291. *f.* 4. (Filix).
Fronds palmate hirſute.

5. Hemionitis japonica.
Lin. ſyſt. 932. *Thunb. jap.* 333.
Fronds bipinnate: pinnas lanceolate entire.

6. Hemionitis reticulata.
Forſt. fl. auſtr. n. 423.
Fronds lanceolate-ſickled quite entire, veins netted.

7. Hemionitis eſculenta.
Retz. obſ. 6. 38. *n.* 83.
Frond pinnate, pinnas alternate lanceolate crenate ſlightly eared at the baſe.

8. Hemionitis prolifera.
Retz. obſ. 6. *n.* 84.
Frond pinnate, decumbent, pinnas lanceolate crenate, axils proliferous.

DESCRIPTIONS, *&c.*

The five firſt of theſe Ferns are natives of the Weſt-Indies, the ſixth has been lately diſcovered in the Society Iſles, and the two laſt were obſerved by Koenig in the Eaſt-Indies.

1. The leaves are plane and ſimple, ſeldom exceeding ſixteen or eighteen inches in length, when moſt luxuriant; they grow in tufts from a ſtrong fibrous root. This plant is commonly found on the trunks of trees in the cooler and more ſhady inland woods of Jamaica[a].

2. Native of Jamaica[b].

3. Leaves about two inches long, and one and a half over where broadeſt.—Creeping on trees in the cooler inland woods of Jamaica[c].

4. Roots many, fibrous, black. Stalks black, cornered, about ſix inches high, covered with ferruginous hair. Frond divided into three parts, cut in almoſt to the centre; the two under ſections having ears or appendicles making the leaf appear divided into five ſections: the middle diviſion largeſt, an inch and half long, and half as broad in the middle, eaſily dented on each ſide, rough, of a yellowiſh green colour; each ends in a point, and has a purple midrib, from which go ſeveral tranſverſe fibres, on which is the ſeed. The whole frond is like the leaf of the creeping Ranunculus. Between Savanna and Two-mile wood in Jamaica[d].—Found alſo in Martinico, by Plumier.

5. The whole frond is ſmooth with a furrowed ſtipe, at bottom bipinnate, at top pinnate. Pinnas and pinnules lanceolate, acute, entire, pale underneath. The fructifications are in trichotomous lines over the whole lower ſurface. Native of Japon[e].

6. Native of the Society Iſles[f].

7. A foot and half high or more. Stipe ſmooth, grooved. Pinnas almoſt ſeſſile, deeply notched, each notch at the baſe next the ſtipe more deeply cut and elongated: the terminating pinna as it were ſagittate. Roots eſculent.

8. Primary frond pinnate, decumbent, large, pinnas ſeſſile, alternate, truncate at the baſe, almoſt half a foot in length: from the axils of theſe other fronds grow frequently in pairs, a foot and half long, with ſimilar pinnas, only much ſmaller, and the ſtipe thickened like a tubercle[g].]

PROPAGATION AND CULTURE.

Theſe are plants ſeldom propagated in gardens. They muſt be procured from the countries where they naturally grow; planted in pots filled with loamy undunged earth, and placed in the ſtove: in ſummer they muſt be frequently watered, but in winter they require little. In ſummer they ſhould have plenty of free air.

[HEMIONITIS. See *Adiantum, Aſplenium, Polypodium, Pteris.*

HEMLOCK, Common. See *Conium.*

——— Water. See *Cicuta.*

HEMP. See *Cannabis.*

——— Agrimony. See *Eupatorium.*

———————, Baſtard. See *Ageratum.*

———————, Water. See *Bidens.*

———, Baſtard. See *Datiſca.*

———, Virginia. See *Acnida.*

HENBANE. See *Hyoſcyamus.*

HENBIT. See *Lamium.*

HENNA. See *Lawſonia.*

HEPATICA. See *Anemone, Aſperula, Jungermannia, Marchantia, Riccia.*

HEPATICOIDES. See *Jungermannia.*

HEPATORIUM. See *Bidens* & *Coreopſis.*

HEPETIS. See *Pitcairnia.*]

HEPTAPHYLLUM. See *Alchemilla, Potentilla.*

HERACLEUM. (*From* Ἡρακλῆς, *Hercules.* Ἡράκλεια *is the name of a plant in Dioſcorides.—From Heraclides the father of Hippocrates.* Boehmer.)

Lin. gen. n. 345. *Reich.* 375. *Schreb.* 477. *Juſſ.* 222.

Sphondylium. *Tournef. t.* 170. *Gærtn. t.* 21.

Claſſ. 5. 2. Pentandria Digynia.

Nat. order of *Umbellatæ* or *Umbelliferæ.*

GENERIC CHARACTER.

CAL. *Umbel univerſal* manifold, very large: *partial* flat. *Involucre univerſal* many-leaved, caducous; *partial* halved on the outſide: *leaflets* three to ſeven, linear-lanceolate, the exterior ones longer. *Perianth* obſcure.

COR. *Univerſal* not uniform, radiate: *floſcules* all generally fertile. *Proper*—of the *diſk* equal, five-petalled; petals bent in and hooked, emarginate—of the *ray* unequal, five-petalled; the outer ones larger, and more bifid, oblong, hooked.

STAM. *Filaments* five, longer than the corollets. *Anthers* ſmall.

PIST. *Germ* ſubovate, inferior. *Styles* two, approximating, ſhort. *Stigmas* ſimple.

PER. none. *Fruit* elliptic, compreſſed, emarginate, ſtriated in the middle on both ſides, margined.

SEEDS two, ovate, leafy and compreſſed.

OBS. *In ſome ſpecies the radiate female flowers are fertile; the male ones of the diſk are abortive, being deſtitute of ſtigmas.* Sphondylium Tournef. 1, 2. *is hermaphrodite throughout, and ſometimes the involucre is entirely wanting.*

H. anguſtifolium *has uniform flowers.*

ESSENTIAL CHARACTER.

Invol. caducous. *Cor.* difform, inflex-emarginate. *Fruit* elliptic, emarginate, compreſſed, ſtriated, margined.

SPECIES.

1. Heracleum Sphondylium. *Common Cow-Parſnep.*
Lin. ſpec. 358. *Reich.* 1. 686. *hort. cliff.* 103. *fl. ſuec. n.* 243. *Hudſ. angl.* 117. *With.* 287. *Lightf. ſcot.* 158. *Gmel. ſib.* 1. 213. *Neck. gallob.* 145. *Pollich. pal. n.* 284. *Leers herborn. n.* 192. *Krock. ſileſ. n.* 421. *Blackw. t.* 540. *Plenck, ic. t.* 175. *Villars dauph.* 2. 637.

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[a] Browne. [b] Swartz. [c] Browne. [d] Sloane. [e] Thunberg. [f] Forſter.

[g] Retzius.

H. Branca urſina. *Allion. pedem. n.* 1291. *Crantz. umb.* 57.
Sphondylium. *Matth.* 791. *Dod.* 307. *Lob. ic.* 1. 701. 2. *Ger. emac.* 1009. *Rivin. pent. t.* 4. *Hall. helv. n.* 809. *Raii hiſt.* 408. *ſyn.* 205.—vulgare. *Park. theat.* 953. *Pet. brit. t.* 24. *f.* 1.—hirſutum. *Bauh. pin.* 157. *Mor. hiſt.* 3. *ſ.* 9. *t.* 16. *f.* 1. *Dod. pempt.* 307.
S. ſ. Branca urſina germanica. *Bauh. hiſt.* 3. 160.
S. Branca. *Scop. carn. n.* 335.
Branca urſina. *Brunfels. Trag.* 437.
Acanthus vulgaris ſ. germanica. *Fuchſ.* 53.
Leaflets pinnatifid, even; flowers radiate.

[2. Heracleum anguſtifolium. *Narrow-leaved Cow-Parſnep.*
Lin. ſyſt. 282. *Reich.* 1. 687. *mant.* 57.
α. H. anguſtifolium. *Jacqu. auſtr.* 2. 46. *t.* 173. *Krock. ſileſ. n.* 425. *Hudſ. angl.* 117. 1. β. *With.* 288.
Sphondylium hirſutum fol. anguſtioribus. *Bauh. pin.* 157. *prodr.* 83. *Riv. pent.* 5.
S. majus aliud laciniatis fol. *Park. theat.* 954. 3. *Raii hiſt.* 408. *ſyn.* 205. *Pluk. alm. t.* 63. *f.* 3. *Pet. brit. t.* 24. *f.* 2. *Jagged Cow-Parſnep:* or *narrow-leaved Cow-Parſnep.*
β. H. longifolium. *Lin. ſyſt.* 282. *Jacqu. auſtr.* 2. 46. *t.* 174. *Krock. ſileſ. n.* 426. *Long-leaved Cow-Parſnep.*
γ. H. elegans. *Krock. ſileſ. n.* 427. *Jacqu. auſtr.* 2. *t.* 175. *Allion. pedem. n.* 1292.
Leaves croſſwiſe-pinnate, leaflets linear; corollas floſculoſe.]

3. Heracleum ſibiricum. *Siberian Cow-Parſnep.*
Lin. ſpec. 358. *ſyſt.* 282. *Reich.* 1. 687. *hort. upſ.* 65. *mant.* 354. *Gmel. ſib.* 1. 218. (Paſtinaca).
Leaves pinnate, leaflets in fives, the middle ones ſeſſile; corollets uniform.

4. Heracleum Panaces. *Palmated Cow-Parſnep.*
Lin. ſpec. 358. *ſyſt.* 282. *Reich.* 1. 687. *hort. upſ.* 65. *cliff.* 103. *Gmel. ſib.* 1. 213. *Krock. ſileſ. n.* 422.
Sphondylium majus ſ. Panax Heracleum. *Bauh. hiſt.* 3. 161. *Raii hiſt.* 409.
S. Panaces. *Gærtn. fruct.* 1. 86.
Panax Sphondylii folio ſ. Heracleum. *Bauh. pin.* 157.
P. Heracleum. *Dod. pempt.* 305. *Ger.* 850. *emac.* 1003.—verum, ficulneo folio. *Park. theat.* 949. *f.* 1.
Leaves pinnate, leaflets in fives, the middle ones ſeſſile, flowers radiate.

5. Heracleum auſtriacum. *Auſtrian Cow-Parſnep.*
Lin. ſpec. 359. *ſyſt.* 282. *Reich.* 1. 688. *Jacqu. auſtr.* 1. 38. *t.* 61. *Crantz auſtr.* 153. *t.* 1. *f.* 1. *Krock. ſileſ. n.* 423.
Sphondylium auſtriacum. *Scop. carn. n.* 336.
S. alpinum parvum. *Bauh. pin.* 157. *prodr.* 83. *Raii hiſt.* 409.
Leaves pinnate, wrinkled and ſcabrous on both ſides, flowers ſubradiate.

6. Heracleum alpinum. *Alpine Cow-Parſnep.*
Lin. ſpec. 359. *ſyſt.* 283. *Reich.* 1. 688. *Ger. prov.* 246. 2. *Krock. ſileſ. n.* 424. *Hall. helv. n.* 810. *Villars dauph.* 2. 638. *Barr. ic.* 55. (Sphondylium).
Sphondylium alpinum glabrum. *Bauh. pin.* 157. *prodr.* 83. *ic.* *Park. theat.* 954. *f.* 5. *Bauh. hiſt.* 3. 163. *Raii hiſt.* 409. *Mor. t.* 16. *f.* 4.
Leaves ſimple, flowers radiate.

DESCRIPTIONS, *&c.*

1. [Root biennial, thick, yellowiſh without, white within, running deep into the ground, ſweet to the taſte, with ſome acrimony. Stem two, three, and four feet high, round, furrowed, rough, with white hairs, hollow within, branched from the bottom. Leaves hairy and ſcabrous, frequently a foot in length, and more than half a foot in breadth, pinnate and waved, the pinnas pinnatifid, lobed, ſerrate, the odd one cloven into three to the baſe. The petioles ſpread out at the baſe into a membranaceous bag, woolly at the edge, and ſheathing the umbels in their younger ſtate. The univerſal involucre conſiſts only of one or two leaflets, and is ſometimes wanting. The partial involucre has from ſix to eight linear leaflets. The univerſal umbel is flat, and has ten, twelve or more rays; the partial umbel has upwards of thirty. Florets white, greeniſh white, or purpliſh; they have a horned appearance before they expand, particularly the outer ones: theſe are very irregular, having their outer petals four times the ſize of the inner ones. In the central florets, they approach much nearer to regularity. Anthers greeniſh. Stigmas ſemitranſparent. Seeds large, ſmooth, ſcarce viſibly ſtriated in the middle, having three riſing ridges on each ſide; the leafy border is often purpliſh.—The central flowers are frequently abortive[a].

Native of moſt parts of Europe, in hedges and paſtures, orchards, and near water; particularly in moiſt and fertile ſoils. It flowers from may to july.

The ſeeds have a ſtrong ſmell, ſomewhat like that of a bug; they are accounted diuretic and ſtomachic. Linneus ſays that the plant is uſed in Scania againſt the dyſentery.

Gmelin informs us that the inhabitants of Kamtſchatka, about the beginning of july, collect the footſtalks of the radical leaves, and after peeling off the rind, (which is very acrid) dry them ſeparately in the ſun, and then tying them in bundles, lay them up carefully in the ſhade in bags; in this ſtate they are covered with a yellow ſaccharine efflorefcence, taſting like liquorice; this, being ſhaken off, is eaten as a great delicacy.

The Ruſſians diſtill an ardent ſpirit from the ſtalks thus prepared, by firſt fermenting them in water with the greater Billberries (Vaccinium uliginoſum); which Gmelin ſays is more agreeable to the taſte than ſpirits made from corn.

The leaves are a favourite food with Rabbets and Swine. Kine, Goats and Sheep alſo eat them; but horſes are ſaid not to be fond of them[b].

In German it is named *Heilkraut*, *Barenklau*, &c. In Dutch *Heilkruid*, *Beerenklaauw*. In Daniſh *Biorneklov*. In Swediſh *Biornſloka*. In French *La Berce*. In Italian *Sfondilio*. In Spaniſh *Eſſondilio*. In Portugueze *Canabraz*. In Ruſſian *Putſchki*; *Slatkaja trawa*.

Our old writers call this plant *Cow-parſnep*, *meadow Parſnep*, and *Madnep*. In Norfolk it is called *Hogweed*. The dry ſtalks are named, in common with thoſe of ſome other umbellate plants, *Kexes* or *Keckſies*.

2. The pinnas of the leaves are moſtly three-lobed; the lower lobes long, and ſtanding nearly at right angles, which gives the cruciate appearance; lobes linear-lanceolate, deeply ſerrate, and the ſerratures again ſerrate. It is however merely a variety of the foregoing, and grows plentifully at Berkhamſtead in Hertfordſhire, near the place where Ray found it; and where both ſorts may be ſeen growing from the ſame root. The diſtinction of the floſculoſe and radiate corolla is very uncertain, as Hudſon well remarks[c].

Ray, who cultivated it in his garden at Cambridge, looks upon it as a mere variety: and Hudſon expreſsly affirms that it degenerates to the foregoing, in a garden.

Linneus thus diſtinguiſhes it.—The ſtature is the ſame with that of H. Sphondylium, but the leaflets are extremely narrow, linear, at the common petiole pinnate croſswiſe, being four at each joint; the anterior leaflet lobed at the baſe. Flowers uniform, green and white. According to Krocker, dark or yellowiſh green, not white.

β. This differs from the common ſort in having the ſegments of the leaves very long, the primary ones being from half a foot to a foot in length, oblong, lanceolate, acute, ſmooth above, rough underneath, rarely and ſhortly ſubdivided: whilſt the plant is young the leaves are palmate, divided into long ſegments: ſtem hirſute, with white hairs, four feet high, ſtriated, furrowed: univerſal involucre either none, or like the partial one, with many linear, acute leaflets: petals white, ſubovate, bent in, the outer ones larger, cloven half way.

[a] Ray, Withering, Pollich, Krocker, Necker, Leers.
[b] Gmelin, Withering, Lightfoot.
[c] Woodw. Mſs.

γ. In the ſeed, flowers, anthers and piſtils this agrees with H. longifolium; in the leaves it approaches nearer to H. anguſtifolium: it differs from both in having the ſegments of the leaves very narrow, ſhorter, very confluent: the leaves are moſtly ternate, being divided into four or five ſegments only in the larger ones[d].

Theſe three are rather to be conſidered as ſingular varieties than as ſpecies: hence Crantz has united them under the name of *H. proteiforme.*

3. Root biennial. Stem deeply furrowed, hiſpid. Leaves convex, even. Flowers floſculoſe, by no means radiate. Petals green, bent in, not at all emarginate. Univerſal involucre none. Pedicels or partial peduncles ſcabrous. At the baſe of the leaf-ſheaths a thick white beard.—Native of Siberia[e].

From this ſpecies a ſpirit is drawn at Kamtſchatka, called *Raka,* as related in *Cook's voy.* 3. 337. *where the proceſs of making the ſpirit is deſcribed.* It is uſed alſo as food, like the firſt ſort.—Mr. Miller cultivated it in 1768[f].

4. Root biennial. Stem much taller than the common ſort, attaining the height of ſix feet, hirſute, round, ſlightly angular, branched. Leaves on long, channelled, rough petioles, tinged with purple, ariſing from a very large, obtuſe, hirſute ſheath; they have one pair of petioled pinnas, and a ſecond pair ſeſſile, with an odd one compoſed of three blunt lobes; they are rough on both ſides, without hairs on the upper, and only on the ribs in the under ſurface, which is downy: they are the largeſt in this genus, ſharply ſerrate, gaſhed and ſinuate. Flowers large, radiate, greeniſh or yellowiſh white.—This ſpecies is of the ſame nature with the others, and is uſed for the ſame purpoſes[g].

Native of Italy, Sileſia and Siberia. Cultivated by Gerarde in 1597. He calls it Hercules All-heal.

5. Root knotty, with circles round it, and a few fibres. Stem from a foot to two feet in height, ſlightly angular, ſtriated, ſolitary, ſmooth, ſoft, with a white pile only towards the top, ſcarcely branched. Leaves duſky green, on long hirſute petioles, pinnas ſeſſile, gaſhed, three or five, lanceolate, rounded and eared, the outer odd one petioled, three-lobed, the lobes like the other pinnas, in the lower ones blunt, in the upper ones ſharp, all ſerrate. Univerſal involucre one-leafed or none: partial ſometimes of more, ſometimes of fewer lanceolate, hirſute leaflets, at firſt ſpreading, afterwards bent back. Umbel eight or ten-cleft; in the umbellule, the rays are more in number, and more hirſute. Petals deeply and unequally cut, before they open reddiſh, and then from roſe-colour becoming white. It differs from H. Panaces, in having the leaves veined and wrinkled, green, and ſcabrous on both ſides; not ſoft, or paler underneath, or ſomewhat tomentoſe; peduncles ſcabrous, not even, as in H. Panaces: the ſtature is leſs[h].—Native of Auſtria, Carniola and Sileſia; flowering in july and auguſt.—Cultivated in 1748, by Mr. Miller[i].

6. Stem from eighteen inches to three feet high, round, ſmooth, jointed. Leaves ſmooth, thick, thoſe next the root on long roundiſh petioles; ſubcordate, gaſh-ſerrate, not lobed; the ſtem-leaves gradually ſmaller, the upper ones very ſmall, more three-lobed, and ſinuate, ſeſſile. Sheaths ſtriated, whitiſh, ſmooth, often wanting in the lower leaves. Corollas white, radiate, ſmaller than in the reſt[k].—Seguier joins this with the foregoing ſpecies, but the leaves reſemble thoſe of Rubus Chamæmorus, or the Fig, and are even, not ſcabrous, on their upper ſurface[l].—Native of the Swiſs Alps, Provence and Sileſia.—Known to Caſpar Bauhin in 1595[m].—Cultivated in 1739, by Mr. Miller[n].]

PROPAGATION AND CULTURE.

Sow their ſeeds in the autumn; in the ſpring, when the plants are up, hoe the ground, cutting up the weeds, and thinning the plants, as directed for Parſneps.

[Herba admirationis. See *Phlomis zeylanica.*
Herba articularis. See *Cucubalus Behen.*
Herba britannica. See *Rumex.*
Herba crinium. See *Hibiſcus ſurattenſis.*]
Herba Gerardi. See *Ægopodium.*
[Herba Impia. See *Filago.*
Herba indica. See *Viola enneaſperma.*
Herba moeroris. See *Phyllanthus Niruri.*
Herba mimoſa. See *Oxalis ſenſitiva.*]
Herba Paris. See *Paris.*
[Herba ſancti Jacobi. See *Senecio Jacobæa.*
Herba ſancti Stephani. See *Circæa.*
Herba ſentiens. See *Oxalis ſenſitiva.*
Herba ſtella. See *Plantago coronopifolia.*
Herba ſupplex. See *Epidendrum ovatum.*
Herba vitiliginum. See *Juſſieua erecta.*
Herba viva. See *Oxalis ſenſitiva.*
Herba vulnerata. See *Bupleurum falcatum.*
Herb Bennet. See *Geum.*
Herb Chriſtopher. See *Actæa.*
Herb Paris. See *Paris.*
Herb Robert. See *Geranium.*

HERITIERA. (*So named in honour of Charles Louis L'Heritier; author of* Stirpes novæ, Sertum Anglicum, Cornus, *and* Geraniologia, *all magnificent works.*) *Lin. gen. Schreb. n.* 1766. *Ait. hort. kew.* 3. 546. Claſſ. 21. 8. Monoecia Monadelphia.—Syngeneſia, *Schreb.*

GENERIC CHARACTER.

* *Male flowers* ſmaller than the females.

Cal. *Perianth* one-leafed, bell-ſhaped, five-toothed.

Cor. none.

Stam. in the centre of the calyx, columnar, conic-ſubulate, below the tip ſurrounded by *anthers* (five—ten) minute, united into a cylinder.

* *Female flowers* in the ſame panicle with the males.

Cal. as in the males.

Cor. none.

Stam. *Filaments* none. *Anthers* ten, inſerted into the receptacle at the baſe of the germs, two between each, twin, minute, perhaps barren.

Pist. *Germs* five, ſemiovate, compreſſed, ſmooth. *Styles* conical, ſhort, in flowering time cohering at the tip. *Stigmas* club-ſhaped.

Per. *Drupes* juiceleſs, ſpreading very much, oval, flattiſh above, convex underneath, keeled and winged, one-celled.

Seeds ſolitary, ſubglobular, large.

Obs. *This character is formed from dried ſpecimens, compared with Koenig's manuſcript deſcriptions, made from living plants on the ſpot.*

ESSENTIAL CHARACTER.

Cal. five-toothed. *Cor.* none.

Male. *Anthers* ten, without filaments.

Fem. *Germs* five. Drupes with one ſubglobular ſeed.

SPECIES.

1. Heritiera littoralis. *Looking-glaſs Plant.* *Ait. hort. kew.* 3. 546. Samandura. *Lin. zeyl. n.* 433. Nagam. *Rheed. mal.* 6. 37. *t.* 21.

DESCRIPTION, *&c.*

This is a tree with alternate, oval-oblong, obtuſe, perennial, thick, veined, ſmooth, quite entire, petioled leaves[a].

Native of the Eaſt-India iſlands. Found on Ceylon by Koenig, and on Pulo Condore, by Mr. Dav. Nelſon.—Introduced in 1780, by Sir Joſeph Banks, Bart.—Atunus littorea of Rumphius (amb. 3. 95. t. 63.) agrees with this entirely in the leaves and fruit, but the flowers deſcribed by him are very different[b].]

HERMANNIA. (*This name was given by Tournefort, in memory of the celebrated Paul Hermann, who practiſed phyſic in Ceylon and at the Cape of Good Hope, and was afterwards profeſſor of Botany at Leyden.*) *Lin. gen. n.* 828. *Reich.* 893. *Schreb.* 1109. *Tournef. t.* 432. *Dill. elth.* 147. *Cavan. diſſ.* 6. 327. *Juſſ.* 289. *Gærtn.* 2. *t.* 112. Claſſ. 16. 2. Monadelphia Pentandria. Nat. order of *Columniferæ.*—*Tiliaceæ,* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, five-cleft, roundiſh, inflated: the little clefts bent in: permanent.

Cor. pentapetalous, ſpiral againſt the ſun: *claws* the length of the calyx, with a little membrane on each ſide converging into a cowled nectareous tube: *border* ſpreading, broadiſh, blunt.

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[d] Krocker.
[e] Linn. mant. & ſyſt.
[f] Hort. kew.
[g] Krocker & Gmel. ſib. 1. 214.
[h] Krocker.
[i] Hort. kew.
[k] Krocker.
[l] Linn.
[m] Ibid.
[n] Hort. kew.

[a] Linn. zeyl.
[b] Hort. kew.

STAM. *Filaments* five, broadiſh, very ſlightly coaleſcing at bottom into one body. *Anthers* upright, acuminate, converging.

PIST. *Germ* roundiſh, five-ſided, five-cornered. *Styles* five, filiform, approximating, ſubulate, longer than the ſtamens. *Stigma* ſimple.

PER. *Capſule* roundiſh, five-ſided, five-celled, gaping at the top.

SEEDS very many, ſmall, (kidney-form. *G.*)

ESSENTIAL CHARACTER.

Styles five. *Capſ.* five-celled. *Petals* ſemitubular at the baſe, oblique.

SPECIES.

1. Hermannia althæifolia. *Marſh-Mallow-leaved Hermannia.*
Lin. ſpec. 941. *Reich.* 3. 302. *hort. cliff.* 342. *Curt. magaz.* 307. *Pet. gaz. t.* 34. *f.* 2. *Comm. hort.* 2. *t.* 79. (Ketmia).
Leaves ovate, crenate, plaited, tomentoſe, flowering calyxes bell-ſhaped, angular, ſtipules oblong, leafy.

[2. Hermannia plicata. *Plaited-leaved Hermannia.*
Ait. hort. kew. 2. 411.
Leaves cordate-ovate, toothletted, plaited, tomentoſe, flowering calyxes oblong-ovate, ſubcylindrical.

3. Hermannia candicans. *White Hermannia.*
Ait. hort. kew. 2. 412.
Leaves ovate, ſubcordate, blunt, tomentoſe, flowering calyxes patulous, ſomewhat angular, ſtipules ſubulate.

4. Hermannia ſalvifolia.
Lin. ſyſt. 610. *ſuppl.* 302.
Leaves ovate, entire, wrinkled, tomentoſe-hiſpid, flowers drooping.

5. Hermannia biſerrata.
Lin. ſyſt. 610. *ſuppl.* 302.
Leaves ovate, lanceolate, unequal, ſerrate, ſmooth, flowers drooping.

6. Hermannia trifurca.
Lin. ſpec. 942. *ſyſt.* 610. *Reich.* 3. 302. *amoen.* 6. *afr.* 24. *Burm. ind.* 18. *Volk. norib. t.* 24. (Althæa).
Leaves lanceolate, entire and three-toothed, flowers in racemes, pointing one way.]

7. Hermannia alnifolia. *Alder-leaved Hermannia.*
Lin. ſpec. 942. *ſyſt.* 610. *Reich.* 3. 303. *hort. cliff.* 342. *Berg. cap.* 166. *Gærtn. fruct.* 2. 146. *Mill. illuſtr. ic.* *Comm. hort.* 2. 155. *t.* 78. (Ketmia). *Pluk. mant. t.* 239. *f.* 1. *Curt. magaz.* 299.
Leaves wedge-ſhaped, marked with lines, plaited, crenate-emarginate.

[8. Hermannia odorata. *Sweet-ſcented Hermannia.*
Ait. hort. kew. 3. 412.
Leaves oblong-lanceolate, tomentoſe, wrinkled underneath, the lower ones truncate and toothletted; calyxes pitcher-ſhaped and angular.]

9. Hermannia hyſſopifolia. *Hyſſop-leaved Hermannia.*
Lin. ſpec. 942. *ſyſt.* 610. *Reich.* 3. 303. *hort. cliff.* 342. *upſ.* 195. *Giſeck ic.* 1. *t.* 16.
Leaves lanceolate, blunt, ſerrate.

10. Hermannia lavendulifolia. *Lavender-leaved Hermannia.*
Lin. ſpec. 942. *Reich.* 3. 303. *hort. cliff.* 342. *Dill. elth.* 179. *t.* 147. *f.* 176. *Curt. magaz.* 304.
Leaves lanceolate, blunt, quite entire.

[11. Hermannia denudata. *Smooth Hermannia.*
Lin. ſyſt. 611. *ſuppl.* 301. *Cavan. diſſ.* 6. 329. *t.* 181. *f.* 1.
Leaves lanceolate, ſharp, even, ſerrate at top.

12. Hermannia glabrata.
Lin. ſyſt. 611. *ſuppl.* 301.
Leaves lanceolate, ſharp, gaſh-ſerrate, ſmooth, flowers drooping.

13. Hermannia ciliaris.
Lin. ſyſt. 611. *ſuppl.* 302.
Leaves lanceolate, ſharp, entire and ſerrate, ciliate.

14. Hermannia linifolia.
Lin. ſyſt. 611. *Reich.* 3. 303. *Burm. prodr.* 18.
Leaves linear, peduncles one-flowered.

15. Hermannia filifolia.
Lin. ſyſt. 611. *ſuppl.* 302.
Leaves linear, three-ſided, quite entire.

16. Hermannia trifoliata.
Lin. ſpec. 942. *Reich.* 3. 303. *hort. cliff.* 342. *mant.* 431.
Leaves ternate, ſeſſile, plaited, retuſe, tomentoſe.

17. Hermannia triphylla.
Lin. ſpec. 942. *Reich.* 3. 304. *amoen.* 6. *afr.* 25.
Leaves ternate, petioled, flat, obovate.]

18. Hermannia groſſularifolia. *Gooſeberry-leaved Hermannia.*
Lin. ſpec. 943. *ſyſt.* 611. *Reich.* 3. 304.
Leaves lanceolate, pinnatifid.

[19. Hermannia pulchella.
Lin. ſyſt. 611. *ſuppl.* 302.
Leaves lanceolate, pinnatifid, pinnas entire and gaſhed; ſtem upright, even.

20. Hermannia diffuſa.
Lin. ſyſt. 611. *ſuppl.* 302.
Leaves lanceolate, pinnatifid, pinnas entire and toothed; peduncles capillary, two-flowered; ſtem procumbent.]

21. Hermannia hirſuta.
Mill. dict. n. 8.
Leaves ſimple and ternate, hirſute, ſeſſile.

DESCRIPTIONS, &c.

[The Hermannias are Shrubs from eighteen inches to ſix or ſeven feet in height. Natives of the Cape of Good Hope. Leaves alternate, ſimple, ſtipuled. Flowers axillary and terminating, frequently two together. Corolla yellow.]

1. This ſeldom riſes more than two feet and a half high, the ſtem is not very woody, and the branches are ſoft and ſlender. The flowers are produced in looſe panicles at the ends of the branches; they are larger than thoſe of the Alder-leaved ſort, and have hairy calyxes: they come out in june and july, and frequently again in the autumn.

[Peduncles from the axils of the leaves, commonly three together, producing at the top two flowers on each, under three lanceolate leaflets[a].

Cultivated in 1728, by Mr. Miller[b].

2. Found at the Cape by Mr. Maſſon, and introduced in 1774. It flowers in november and december.

3. This alſo was found at the ſame place by Mr. Maſſon; and was introduced at the ſame time. It flowers from april to june[c]. The whole plant is covered with a very white down. The leaves are ſerrate, except near the baſe.

4, 5. Found at the Cape by Thunberg[d].

6. This is very nearly allied to H. alnifolia. Leaves hoary, ſcarcely tomentoſe, hardiſh, the lower ones blunt and three-cuſped. Flowers in a terminating raceme, alternate, hanging down, moſtly ſolitary. Petals blue, leſs cowled than the others[e].]

7. This riſes with a ſhrubby ſtalk ſix or eight feet high, dividing into many erect irregular branches, covered with a brown bark. Leaves narrow at their baſe, but broad and round at the top, about an inch long, and three quarters of an inch broad at the top. The flowers are produced in ſhort ſpikes on the upper part of the branches; they are of a pale yellow colour, and ſmall: they appear in april and may, and the ſeeds often ripen in auguſt.

[The capſule is within the calyx, which is ſlightly inflated; it is on a very ſhort peduncle; the texture is thin, and the colour is bay: the partitions are faſtened to the middle of the back of the valves, and the ſeeds are fixed to the central margins of the partition on both ſides: theſe are eight to twelve in each cell, ſmall, of an angular kidney form, ſmooth, dirty cinnamon colour; with a tubercled navel in the middle of the belly[f].

Cultivated in 1728, by Mr. Miller[g].

8. Found at the Cape by Mr. William Paterſon; and introduced in 1780 by the Counteſs of Strathmore. It flowers moſt part of the year[h].]

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[a] Linn. ſpec.
[b] Hort. kew.
[c] Ibid.
[d] Linn. ſuppl.
[e] Linn. amoen.
[f] Gærtner.
[g] Hort. kew.
[h] Ibid.

9. This riſes with a ſhrubby upright ſtalk to the height of ſeven or eight feet, ſending out many woody lateral branches, growing very erect. Leaves about an inch and half long, and half an inch broad, ſerrate towards the end: the flowers come out in ſmall bunches from the ſide of the ſtalk; they are of a pale ſtraw-colour, appear in may and june, and are frequently followed by ſeeds, which ripen the latter part of auguſt.

[Leaves broader than in the next ſpecies. Calyxes inflated. Umbel of the corolla very ſhort, ſulphur-coloured, reflex. Stem upright, ſtiff[i]. Cultivated in 1725, by Mr. Miller[k].]

10. This ſort has ſhrubby branching ſtalks, which are very buſhy, but ſeldom riſe more than a foot and half high; the branches are very ſlender, and have hairy, pale-green leaves on them of different ſizes; ſome of them are two inches long, and an inch broad at their ends, but their common ſize is ſeldom more than one inch long, and half an inch broad; they are entire, and ſit pretty cloſe to the branches. The flowers come out from the ſide of the ſtalk ſingly, are ſmall and yellow; they continue moſt part of the ſummer.

[Cultivated in 1732, in Dr. Sherard's garden at Eltham[l].

11. Stems upright, round, ſmoothiſh, ſtiff. Leaves petioled, remote, three-nerved underneath: floral leaves quite entire. Stipules lanceolate, ſcarcely longer than the petioles, nerved. Flowers from the top, from the alternate oppoſitions of the ſtipules, or from a two-flowered peduncle, peduncled. Calyx even, half-five-cleft. Corolla yellow. Found at the Cape by Sparrmann[m]: and by Mr. Fr. Maſſon. Introduced 1774. It flowers from may to july[n].

12, 13. Found at the Cape, by Thunberg. The latter will be a ſpecies of Mahernia, if that genus is to be ſeparated from Hermannia[o].

14. Native of the Cape, with all the other ſorts.

15. Found at the Cape by Thunberg[p].

16. Stem creeping: branches narrow. Leaves ternate; the middle leaf wedge-ſhaped, doubled, ſubſerrate, three-toothed, with the tip recurved. Flowers pendulous. Calyx bell-ſhaped, tomentoſe, half-five-cleft; the clefts dilated, rounded. The corolla narrower than the calyx[q].

17. Stems herbaceous. Stipules ſmall. Petals the length of the leaves. Peduncles ſtill longer, five-flowered, with bractes. The whole plant has hairs thinly ſcattered over it[r].]

18. This is a ſhrub of lower ſtature than the Alder-leaved ſort, but ſends out a greater number of branches, which ſpread wide on every ſide; the leaves are ſmaller than in that, are rough and ſeſſile. The flowers are produced in ſhort cloſe ſpikes at the end of every ſhoot, ſo that the whole ſhrub ſeems covered with them; they are of a bright yellow, and appear towards the end of april, but are not ſucceeded by ſeeds in England.

[19, 20. Found at the Cape, by Thunberg[s].]

21. This riſes with a ſhrubby hairy ſtalk about two feet high, ſending out many ſide branches, which grow very erect. Leaves oblong, veined, ſingle or in threes, in the latter caſe the middle leaf is largeſt. The flowers are produced towards the end of the branches; they are large, and of a deep yellow colour, with large, ſwollen, hairy calyxes. It continues flowering moſt part of the ſummer. Mr. Miller raiſed this from ſeeds which came from the Cape of Good Hope.

PROPAGATION AND CULTURE.

Theſe plants are all propagated by planting cuttings of them during any of the ſummer months, in a bed of freſh earth, obſerving to water and ſhade them until they are well rooted, which will be in about ſix weeks after planting; then take them up, preſerving a ball of earth to their roots, and plant them into pots filled with light freſh earth, placing them in a ſhady ſituation until they have taken freſh root; after which they may be expoſed to the open air, with Myrtles, Geraniums, &c. until the middle or end of october, when they muſt be removed into the green-houſe, obſerving to place them in the cooleſt part of the houſe, where they may have as much free air as poſſible; for if they are too much drawn in the houſe, they will appear very faint and ſickly, and ſeldom produce many flowers; whereas, when they are only preſerved from the froſt, and have a great ſhare of free air, they will appear ſtrong and healthy, and produce large quantities of flowers in april and may, during which ſeaſon they make a very handſome appearance in the green-houſe: they muſt alſo be frequently watered, and will require to be new potted at leaſt twice every year, i. e. in may and ſeptember; otherwiſe their roots will be ſo matted, as to prevent their growth.

Theſe plants rarely produce good ſeeds with us, except the ninth and twenty-firſt ſorts, which ripen their ſeeds every year in England; the others rarely producing any, I ſuppoſe this may be accounted for by their having been long propagated from cuttings; for thoſe plants which I have raiſed from ſeeds, have been fruitful two or three years after, but I have always found thoſe plants which have been propagated by cuttings taken from theſe, have ſoon become barren: the ſame thing I have obſerved in many other plants, therefore thoſe who are deſirous to continue their plants fruitful, ſhould conſtantly raiſe them from ſeeds. Theſe, as alſo thoſe which are obtained from abroad, muſt be ſown upon a moderate hot-bed; and when the plants come up, they muſt be tranſplanted into ſmall pots, and plunged into another very moderate hot-bed, in order to promote their rooting; after which they muſt be hardened by degrees, to endure the open air in ſummer, and may then be treated as the old plants.

[Hermannia pinnata. See *Mahernia*.

HERMAS. (Ερμης, *is one of the names of Mercury. But I preſume that this plant may derive its name from* Ερμα, *a prop.*)

Lin. gen. Reich. n. 1270. *Schreb.* 1594. *Juſſ.* 225. *Gærtn. t.* 85.

Claſſ. 23. 1. Polygamia Monoecia.

Nat. order of *Umbellatæ* or *Umbelliferæ*.

GENERIC CHARACTER.

* *Hermaphrodite, umbel terminating.*

CAL. *Umbel univerſal* many-rayed, hemiſpheric.—*Partial* many-rayed: central ray flower-bearing; the reſt without any floret.

Involucre univerſal many-leaved, lanceolate, ſhort, permanent.—*Partial* of one or two leaves, lanceolate, the length of the partial umbel.

Proper perianth obſcure, five-toothed.

COR. *univerſal* floſculous.—Of the *proper*, petals five, oblong-ovate, upright, flat, entire, equal.

STAM. *Filaments* five, filiform, ſhorter than the petals. *Anthers* barren, oblong.

PIST. *Germ* inferior, compreſſed, larger than the corolla. *Styles* two, filiform, upright, longer than the corolla. *Stigmas* obtuſe.

PER. none. *Fruit* orbicular, emarginate at the baſe, gaping at the angles.

SEEDS two, cordate-orbicular, compreſſed, flat, margined, marked with a ſingle longitudinal elevated ſtreak.

* *Male, umbels lateral, later, of the ſame plant.*

CAL. *Umbel univerſal* as of the hermaphrodite.

Partial many-rayed; the rays all flower-bearing.

Involucre as in the hermaphrodites.

Perianth ſcarcely any.

COR. as in the hermaphrodites.

STAM. *Filaments* five, filiform, length of the corollet. *Anthers* pollen-bearing, oval, nearly twin.

ESSENTIAL CHARACTER.

HERM. *Umbel* terminating. *Invol.* univerſal and partial. *Umbellets* with truncate rays, the central one floriferous. *Pet.* five. *Stam.* five, barren. *Seeds* in pairs, ſuborbiculate.

MALE. *Umbels* lateral, with univerſal and partial involucres. *Umbellets* many-flowered. *Pet.* five. *Stam.* five, fertile.

SPECIES.

1. Hermas depauperata.

Lin. ſyſt. 913. *mant.* 299. *Reich.* 4. 337.

Bupleurum villoſum. *Lin. ſpec.* 343.

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[i] Linn. ſpec. & ſyſt.
[k] Hort. kew.
[l] Dill. elth.
[m] Linn. ſuppl.
[n] Hort. kew.
[o] Linn. ſuppl.
[p] Ibid.
[q] Linn. mant.
[r] Linn. amoen.
[s] Linn. ſuppl.

Perfoliata fol. oblongis ſinuoſis ſubtus incanis. *Burm. afr.* 196. *t.* 71. *f.* 2.
Stem ſhrubby, leaves oblong, embracing, toothed, villoſe underneath.

2. Hermas gigantea.
Lin. ſyſt. 913. *ſuppl.* 435.
Leaves lanceolate-ovate, lanuginoſe above, underneath tomentoſe, entire.

3. Hermas capitata.
Lin. ſyſt. 913. *ſuppl.* 435.
Stem tomentoſe, leaves ſubcordate, ſerrate; umbels capitate.

4. Hermas quinquedentata.
Lin. ſyſt. 913. *ſuppl.* 436.
Stem ſmooth, leaves ovate, five-toothed, tomentoſe underneath, umbel ſolitary.

5. Hermas ciliata.
Lin. ſyſt. 913. *Suppl.* 436.
Stem ſmooth, leaves ovate, ciliate, tomentoſe underneath, umbels ſeveral.

DESCRIPTIONS, &c.

1. This is an umbelled plant, with the leaves radical, ſubpetioled, cordate, coriaceous, white tomentoſe underneath. Stem high, ſimple, naked, with two or three alternate, remote, little ſcales. Peduncles from the boſom of the ſcales and the top of the ſtem. Umbels at the ends of the ſtem and branches, peduncled, compound: the end one hermaphrodite female, many-rayed, with ſeveral univerſal and partial pedicels; florets of the umbellets only ſolitary, the reſt of the pedicels being truncate without a flower: the lateral umbels male, with all the rays of the umbels flower-bearing. Native of the Cape of Good Hope[a].

2. Leaves radical, petioled, obſcurely crenate, a foot in length, and a ſpan in breadth. the upper ſurface villoſe, the lower very cloſely white-tomentoſe. Stem four feet high, with a ſmall leaf or two towards the lower part; the axils villoſe. Umbel terminating, peduncled; and below this four flowering branchlets in whorls, with one or two lower branches, which are alſo floriferous. Involucre many-leaved, linear, acute, ſhorter than the umbel. Primordial rays very abundant. Involucels commonly three-leaved, lateral, the length of the flowers. Rays of the umbellets ſeveral. Petals lanceolate. Stamens five. The wooll ſcraped from the leaves is uſed for tinder at the Cape of Good Hope, as that from Artemiſia is in China and Japan.

3. Leaves petioled, radical, bluntiſh, an inch long, veined, white-tomentoſe underneath. Scape leafleſs, pubeſcent, half a foot high. Heads three, alternate, peduncled, compoſed of florets ſcarce viſibly pedicelled, as in the flowers of the claſs Syngeneſia. Univerſal involucre conſiſting of about eight lanceolate leaflets, the length of the flowers. Rays of the umbel very ſhort. Involucels of the umbellets of a ſingle, lanceolate, lateral leaflet. Florets pedicelled; males two or three, white. Petals entire. Stamens five.

4. This is very diſtinguiſhable from the reſt by its ſmall leaves, with five nice, deep ſerratures.

5. This, with all the reſt, is a native of the Cape of Good Hope; where the two laſt were diſcovered by Thunberg[b].

PROPAGATION AND CULTURE.

See BUPLEURUM.

HERMESIAS. See *Brownea.*

HERMINIUM. See *Ophrys Monorchis.*

HERMODACTYLUS. See *Iris.*]

HERNANDIA. (*From Francis Hernandez, Phyſician to Philip II. King of Spain; a traveller, and author of the hiſtory of Mexico,* 1648.)
Lin. gen. n. 1049. *Reich.* 1141. *Schreb.* 1411. *Plum.* 40. *Jacqu. amer.* 245. *Aubl.* 329. *Gærtn. t.* 40. *Juſſ.* 81.
Claſſ. 21. 3. Monoecia Triandria.
Nat. order of *Tricoccæ.—Lauri,* Juſſ.

GENERIC CHARACTER.

* *Male flowers by pairs, lateral in each umbel.*

CAL. *Involucre* partial, four-leaved, three-flowered; *leaflets* ovate, obtuſe, ſpreading very much.
Perianth none.

COR. *Petals* ſix, ſubovate, ſpreading: the three inner ones narrower.
Nectary; ſix glands, round headed, placed round the filaments.

STAM. *Filaments* (three) ſhorter than the petals, inſerted into the receptacle. *Anthers* upright, oblong, large.

* *Female flower intermediate.*

CAL. *Involucre* common with the males.
Perianth inferior, one-leafed, bell-ſhaped, entire, permanent. (inflated. *G.*)

COR. *Petals* eight, of which four are interior and narrower, all ſitting on the germ. (Petals ſix. *G.*)
Nectary; glands four, obovate, alternate with the interior petals.

PIST. *Germ* roundiſh. *Style* filiform. *Stigma* oblique, ſomewhat funnel-ſhaped, large.

PER. *Drupe* dry, ovate, eight-furrowed, one-celled, incloſed in a very large, inflated, roundiſh, fleſhy, coloured *perianth*, with the mouth entire.

SEED. *Nut* globular, ſlightly depreſſed.

OBS. *Corolla monopetalous, in the male ſix-parted, in the female eight-cleft.* Aubl.

ESSENTIAL CHARACTER.

MALE. *Cal.* three-parted. *Cor.* three-petalled.

FEM. *Cal.* truncate, quite entire. *Cor.* ſix-petalled. *Drupe* hollow, with an open mouth; and a moveable nucleus.—(*Nut* ſuperior, clothed with the calyx inflated. *Seed* globular, bony. *Gærtn.*)

SPECIES.

1. Hernandia ſonora. *Whiſtling Hernandia.*
Lin. ſpec. 1391. *Reich.* 4. 120. *hort. cliff.* 485. *t.* 23. *fl. zeyl. n.* 423. *Brown. jam.* 373. *Jacqu. amer.* 245. *pict.* 120. *Plum. gen.* 6. *Pluk. alm. t.* 208. *f.* 1. *Rumph. amb.* 2. 257. *t.* 85. *Petiv. gaz. t.* 43. *f.* 1.
Leaves peltate.

[2. Hernandia ovigera. *Egg-fruited Hernandia.*
Lin. ſpec. 1392. *Reich.* 121. *Gærtn. fruct.* 193. *Rumph. amb.* 3. 193. *t.* 123.
Leaves ovate, petioled at the baſe.

DESCRIPTIONS, &c.

Theſe are trees, the wood of which is whitiſh and brittle. The leaves are alternate, peltate or ſubpeltate. The flowers are borne in ſpikes or corymbs, axillary or terminating, on peduncles each having one bracte, within a four-leaved involucre, and bearing three flowers, two male on pedicels, and one female ſeſſile. This genus is related to *Myriſtica,* notwithſtanding the inner ſuperior calyx[a].

1. This is an upright, lofty tree, with an elegant head. The flowers are of a pale yellow colour, in panicled racemes; the calyxes of the fruit are yellow[b].]

It is very common in the Weſt-Indies, in gullies, near rills of water; the Engliſh there call it Jack-in-a-box, [and the French Myrobolan. If it be Rumphius's plant, it is alſo a native of the Eaſt-Indies.

It has alſo been found by the late circumnavigators, in the Society and Friendly iſlands[c]. Dr. Patrick Browne ſays, it is common in Barbadoes and Mount-ſerrat, where it grows to a conſiderable ſize; but that he had not ſeen it in Jamaica, though he had been credibly informed that it is frequent in the pariſh of Portland. He attributes the whiſtling noiſe to the cups that ſuſtain and partly envelop the nuts; theſe, he adds, are very large, and as they move in the wind, produce ſound enough to alarm unwary travellers. The ſeeds are very oily.

It was cultivated in 1714, by the Dutcheſs of Beaufort[d].

2. Gærtner thus deſcribes the fruit from a ſpecimen in the collection of Sir Joſeph Banks. It is a nut, within the enlarged, membranaceous, inflated calyx; in ſubſtance coriaceous and hard; in form from a ſwelling baſe narrowing upwards like a pitcher; marked with eight prominent ribs, and a convex knob; ending at top in eight ſwellings or riſings; black, ſmooth, not opening by valves. Shell larger than the ſeed, very thick and ſpongy near the knob, in other parts

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[a] Linn. mant.

[b] Linn. ſuppl.

[a] Juſſieu genera.

[b] Jacquin.

[c] Forſter fl. auſtr.

[d] Hort. kew.

thin, ſeparate all round from the ſeed, and filled with a thin cellular ſubſtance. Seed one, large, globular, bony, creſted at top with a flatted rim, or the whole ſurrounded by this rim in manner of a ring; it is ſmoothiſh, of a pale teſtaceous, or reddiſh bay colour. There is no receptacle; but the ſeed coheres by its tip only to the fungous knob of the ſhell; the reſt of it being enveloped in the cellular membrane. The ſeed has two coverings: the outer, cruſtaceous, hard, of a blackiſh cheſnut colour; the inner, membranaceous and ſpongy, buried deep in the clefts of the kernel. There is no albumen, but the embryo is the full ſize of the ſeed, umbilicated at both ends, tomentoſe and inverted: the cotyledons, when ripe, adhere together pertinaciouſly; they divide into four or five larger lobes, and theſe again irregularly into ſeveral other ſmaller ones; they are fleſhy, oily, friable and whitiſh. The radicle is acuminate, very ſmall, placed in the flatted top of the embryo, and ſtretches upwards.

The fruit of the firſt ſpecies agrees with this in every reſpect, except that the ſeed has no ring, and is of a globular form, only a little flatted.

This is a native of the Eaſt-Indies: but has not yet been introduced into culture in Europe.]

PROPAGATION AND CULTURE.

1. Sow the ſeeds in a hot-bed in the ſpring; when the plants are two inches high, tranſplant each into a ſeparate pot, filled with freſh rich earth, and plunged into the hot-bed again, obſerving to water and ſhade them until they have taken root; after which admit air to them, by raiſing the glaſſes, in proportion to the warmth of the air, or the heat of the bed; and water them frequently. As the plants advance, remove them into larger pots, being careful not to break the roots, and to preſerve a good ball of earth to them: if their leaves hang, ſcreen them from the ſun until they have taken new root. Shift them in july, that they may be well rooted before the cold approaches. Keep them conſtantly in the bark-ſtove: in winter give them a moderate ſhare of heat, and in ſummer plenty of air, when the weather is hot. With this management, the plants will grow to the height of ſixteen feet or more; and the leaves being very large, will make a beautiful appearance in the ſtove.

Herniana. See *Parietaria.*

HERNIARIA. (*From Hernia, a Rupture; for which diſorder it was formerly imagined to be a cure.*)
Engl. *Rupture-wort.*
Fr. *Turquette, Herniole.*
Lin. gen. n. 308. *Reich:* 336. *Schreb.* 434. *Tourn.* 288.
Claſſ. 5. 2. Pentandria Digynia.
Nat. order of *Holoraceæ.—Amaranthi,* Juſſ. *Apetalæ,* Raii, Tournef., Halleri, &c.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, five-parted, ſharp, ſpreading, coloured within, permanent.

Cor. none.

Stam. *Filaments* five, ſubulate, minute, within the parts of the calyx. *Anthers* ſimple. *Filaments* other five, alternate, with the parts of the calyx, barren.

Pist. *Germ* ovate. *Style* ſcarcely any. *Stigmas* two, acuminate, the length of the ſtyle.

Per. *Capſule* ſmall, in the bottom of the calyx, covered, ſcarcely gaping.

Seed ſolitary, ovate-acuminate, ſhining.

Obs. H. fruticoſa *drops a fifth part of the number in the calyx and ſtamens.*

H. lenticulata *differs a little in the character from its congeners.*

ESSENTIAL CHARACTER.

Cal. five-parted. *Cor.* none. *Stam.* five, barren, beſides the fertile ones. *Capſ.* one-ſeeded.

SPECIES.

1. Herniaria glabra. *Smooth Rupture-wort.*
Lin. ſpec. 317. *Reich.* 1. 615. *mat. med.* 72. *Hudſ. angl.* 108. *Wither.* 250. *Engl. bot.* 206. *Hall. helv. n.* 1552. *Scop. carn. n.* 276. *Pollich, pal. n.* 243. *Leers, herborn. n.* 189. *Krock. ſileſ. n.* 368. *Allion. pedem. n.* 2056. *Villars dauph.* 2. 555. *Fl. dan. t.* 529. *Blackw. herb. t.* 320. *Pienck, ic. t.* 171. *Bauh. hiſt.* 3. 378. 3.
Herniaria. *Dod. pempt.* 114. *Ger.* 454. *emac.* 569. *Petiv. brit. t.* 10. *f.* 9. *Raii hiſt.* 214. *ſyn.* 160.
Polygonum minus, ſ. Millegrana major. *Bauh. pin.* 281.
Millegrana major, ſ. Herniaria vulgaris. *Park. theat.* 446. *t.* 447. *f.* 9.
Herbaceous and ſmooth.

2. Herniaria hirſuta. *Hairy Rupture-wort.*
Lin. ſpec. 317. *Reich.* 616. *Hudſ. angl.* 109. *Wither.* 250. *Hall. helv. n.* 1553. *Scop. carn. n.* 277. *Pollich, pal. n.* 244. *Allion. pedem. n.* 2057. *Bauh. hiſt.* 3. 379. 1. *Raii ſyn.* 161. *Mor. hiſt. ſ.* 5. *t.* 29. *f.* 2. *Petiv. brit. t.* 10. *f.* 10. *Zannich. ic.* 284. *Villars dauph.* 2. 556.
Herbaceous and hairy.

3. Herniaria fruticoſa. *Shrubby Rupture-wort.*
Lin. ſpec. 317. *Reich.* 616. *amoen.* 4. 269. *Loefl. it.* 72. & 128. *D'Aſſo, aragon. n.* 219.
H. frut. viticulis lignoſis. *Bauh. pin.* 282.
Polygonum herniariæ folio & facie, perampla radice. *Bauh. hiſt.* 3. 378. *Lob. ic.* 85.
P. frut. erectum hiſpanicum. *Barrel. ic.* 713.
Stems ſhrubby; flowers four-cleft.

4. Herniaria lenticulata.
Lin. ſpec. 317. *Reich.* 616. *Burm. ind.* 78.
Stems ſomewhat ſhrubby; leaves ovate-oblong, hairy.

DESCRIPTIONS, *&c.*

1, 2. The two firſt ſorts are low trailing plants, extending ſeven or eight inches each way; they have leaves like the ſmaller Chickweed, in the firſt ſmooth, in the ſecond hairy: the flowers come out in cluſters from the ſide of the ſtalks at the joints; they are ſmall, of a yellowiſh green, and make no appearance.

1. [This ſpecies is chiefly diſtinguiſhed from the ſecond by the ſmoothneſs of the habit. The *ſtalks* are trailing and many, forming a little tuft, the length of a finger, or at moſt ſix inches, round, with many alternate branches. *Leaves* ovate or ovate-lanceolate, ſomething like thoſe of wild Thyme, oppoſite, ſeſſile or ſubſeſſile, ſmooth, bright green, quite entire, ſharpiſh at the end, of different ſizes, the larger two lines and an half in length, and above a line in breadth. *Flowers* axillary, glomerate, ſeſſile, ſix or eight together, at the joints of the ſtem and branches, with ſmall ovate-lanceolate, dry, white, ciliate bractes. Calyx often four-parted, ſmall, ſmooth, greeniſh, or yellowiſh green. Filaments very ſhort, and only four in number when the calyx is four-parted; the barren ones more ſlender and whiter than the others. Anthers very ſmall and yellow. Styles two, ſhort, with ſubglobular ſtigmas. *Capſule*, if it may be conſidered as ſuch, membranaceous, compreſſed. *Seed* dark-purple, ſhining, deeply emarginate at the top.—According to Scopoli, the flowers are uſually ſolitary, and on ſhort peduncles[a].

It is common in Switzerland, in ſandy ſoils, in Sweden, Denmark, Germany, France, Italy, Carniola; with us in England, at the Lizard Point, Cornwall. Flowering in july.

This plant was formerly in ſome reputation not only for curing ruptures, but the ſtone, gravel and dropſy; it was alſo given in diſorders of the eyes. It has now fallen into utter diſuſe. Withering and Pollich ſay, it is ſaltiſh and aſtringent: increaſes the ſecretions by the kidneys; and that the juice takes away ſpecks in the eye. According to Krocker it is agreeable to ſheep.]

Mr. Miller informs us, that the herb-women uſed commonly to bring the Parſley Breakſtone (*Aphanes arvenſis*) to market, inſtead of this plant. [It is of little conſequence which of them is brought; and neither the one nor the other is now much enquired after.

2. Linneus ſeems inclined to think that *Hairy Rupture-wort* is only a variety of the foregoing. Mr. Ray had given the ſame opinion before, and Dr. Stokes follows theſe great judges. Trew alſo has made one ſpecies of them. Pubeſcence is certainly an equivocal ſpecific diſtinction. Haller acknowledges that the habit of this is like that of the foregoing, and that the leaves and bractes are the ſame: he obſerves, however, that it is ſmaller, and that it is eaſily diſtinguiſhed,

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[a] Haller, Scop. Pollich, Leers, Krock.

by the ſmall number of flowers in the glomerules, and by the greater ſize of each. According to Scopoli, this is upright, more branched, and the flowers are ſeſſile, as far as ſix in number together: but Dr. Stokes affirms that they are not more ſeſſile than thoſe of the ſmooth ſort. Pollich adds, that it is of a darker green colour. Whether ſpecifically different or not, it is eaſily known by the whole plant being hairy.

It is native of Germany, Switzerland, Italy, Carniola; and with us has been found by Colney-Hatch near Barnet. It flowers in july and auguſt.]

3. *Shrubby Rupture-wort* has ſtalks trailing on the ground, with ſmall hairy leaves like the ſecond ſort; the flowers are alſo very like that. This is ſhrubby and perennial; [it is a native of Spain.

4. The perianth of this is ſcarcely ſpreading. It has a very ſmall, five-parted corolla. Five capillary filaments. Germ roundiſh, with an obtuſe ſtigma. Capſule one-celled, wrapped up in the calyx. Seed ſubovate, compreſſed. In habit it approaches very near to common Hernaria, but is very ſoft[b]. Linneus had not ſeen the flowers, but received the character of the fructification from Aymen.—It is a native of the Eaſt-Indies, and the Cape of Good Hope; and is ſaid to have eſtabliſhed itſelf in Spain and the South of France. The plant which has been taken for it in England, ſeems to be only a variety of the ſecond ſort. Plukenet's figure, copied in Petiv. brit. t. 10. f. 6. which is quoted for it, is *Glaux maritima*.]

PROPAGATION AND CULTURE.

1, 2. The two firſt being annual plants, muſt be permitted to ſhed their ſeeds, whereby they are better preſerved than if ſown.

3. The third, being perennial, may be propagated by cuttings.

But as none of them are plants of any beauty, they are rarely preſerved in gardens.

[HERNIARIA. See *Bufonia*, *Illecebrum*, *Parietaria*, *Polycnemum*.

HERPETICA. See *Caſſia alata*.]

HESPĔRIS. (*of Pliny. From* ἑσπέρος. *Becauſe the flower ſmells ſweet in the evening.*)

Engl. *Rocket or Dame's Violet.*
Fr. *Julienne.*

Lin. gen. n. 817. *Reich.* 881. *Schreb.* 1093. *Tournef.* 108. *Juſſ.* 238.

Claſſ. 15. 2. Tetradynamia Siliquoſa.

Nat. order of *Siliquoſæ.—Cruciformes.* Tournef.—*Cruciferæ.* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* four-leaved: *leaflets* lanceolate-linear, from parallel converging, at top incumbent, at bottom gaping, deciduous: of theſe two oppoſite ones are gibbous at the baſe.

COR. four-petalled, cruciform. *Petals* oblong, the length of the calyx, a little bent back obliquely contrary to the ſun's apparent motion, ending in attenuated claws, the length of the calyx.

STAM. *Filaments* ſix, ſubulate, the length of the tube; two of them ſhorter by half than the others. *Anthers* linear, upright, reflex at the tip.

An acuminate honied gland between each ſhorter ſtamen and the germ, and ſurrounding the ſtamen.

PIST. *Germ* the length of the calyx, priſmatic, four-cornered. *Style* none. *Stigma* two-parted, placed on the inſide, oblong, upright, forked at the baſe, converging at the tip, withering.

PER. *Silique* long, preſſed flat, ſtiff and ſtraight, two-celled, two-valved; the valves of the ſame length with the partition.

SEEDS very many, ovate, compreſſed.

OBS. *In* H. lacera *the ſiliques are knotty and three-cuſped.*

ESSENTIAL CHARACTER.

Petals bent obliquely. A *gland* within the ſhorter ſtamens. *Siliqua* ſtiff. *Stigma* with a forked baſe and converging tip. *Cal.* cloſed.

SPECIES.

1. Heſperis triſtis. *Night-ſmelling Rocket.*
Lin. ſpec. 927. *Reich.* 3. 269. *hort. cliff.* 335. *upſ.* 187. *Jacqu. auſtr.* 2. *t.* 102.

H. montana pallida odoratiſſima. *Bauh. pin.* 202. *Mor. hiſt.* 2. 252. *ſ.* 3. *t.* 10. *f.* 3.

H. pannonica. *Cam. hort. t.* 18. *Park. parad.* 262. *t.* 263. *f.* 4.?

H. montana & prima. *Cluſ. Raii hiſt.* 791.

Viola matronalis flore obſoleto. *Ger. emac.* 462. *f.* 3.

Leucoium melancholicum. *Beſl. eyſt. Ger. emac.* 463. 4.

Stem hiſpid, branched, ſpreading.

2. Heſperis matronalis. *Garden Rocket.*
Lin. ſpec. 929. *ſyſt.* 599. *Reich.* 3. 269. *hort. cliff.* 335. *upſ.* 188. *Gmel. ſib.* 2. 259. *n.* 18. *t.* 58. *Allion. pedem. n.* 982. *Villars dauph.* 3. 316.

H. hortenſis. *Bauh. pin.* 202. *Raii hiſt.* 790. *Mor. hiſt.* 2. 251. *ſ.* 3. *t.* 10. *f.* 1.

Viola matronalis. *Dod. pempt.* 161.—purpurea & alba. *Ger.* 376. 1. *emac.* 462. 1.

β. Heſperis ſibirica. *Siberian Garden Rocket.*
Lin. ſpec. 927. 3. *Gmel. ſib.* 3. 260. *n.* 19. *Amman. ruth. n.* 73, 74. *Villars dauph.* 3. 316.

Stem ſimple, upright; leaves ovate-lanceolate, toothletted, petals emarginate, with a point.

3. Heſperis inodora. *Unſavoury Rocket.*
Lin. ſpec. 927. *Reich.* 269. *Jacqu. auſtr.* 4. *t.* 347. *Hall. helv. n.* 448. *D'Aſſo, aragon. n.* 621.

H. ſylveſtris. *Crantz, auſtr.* 32. *n.* 2. *Allion. pedem. n.* 983.—inodora. *Bauh. pin.* 202.

H. pannonica inodora. *Bauh. hiſt.* 2. 878. *f.* 2. *Raii hiſt.* 792. *Park. theat.* 628. *t.* 1682. *f.* 3.

H. altera pann. inod. ſylveſtris. *Cluſ. hiſt.* 1. 296. item. H. 3. *ejuſd.*

Stem ſimple, upright, leaves ſubhaſtate, toothed, blunt.

4. Heſperis africana. *African Rocket.*
Lin. ſpec. 928. *Reich.* 270.

Leucoium gallicum folio halimi. *Bocc. ſic. t.* 42. *f.* 1.

Stem very much branched and diffuſed, leaves lanceolate, petioled, ſharply toothed, ſcabrous, ſiliques ſeſſile.

5. Heſperis verna. *Early-flowering Rocket.*
Lin. ſpec. 928. *Reich.* 270. *Allion. pedem. n.* 984.

Leucoium minus rotundifolium, flore purpureo. *Barrel. ic.* 876.

L. maritimum latifolium. *Bauh. pin.* 201. *Mor. hiſt.* 2. 241. *ſ.* 3. *t.* 8. *f.* 5. *Raii hiſt.* 781.

L. marinum alterum latif. purpureo-violaceum. *Lob. ic.* 333.—latifolium. *Ger.* 375. *emac.* 460. *f.* 3. *Park. theat.* 623. *f.* 2.

Rapiſtrum floribus leucoii marini. *Bauh. pin.* 95. *prodr.* 37.

Stem upright, branched, leaves cordate, ſtem-claſping, ſerrate, villoſe.

[6. Heſperis lacera.
Lin. ſyſt. 599. *Reich.* 270.]

Cheiranthus lacerus. *Lin. ſpec.* 926. *Mill. dict. n.* 17.

[Leucoium luſitanicum purpureum, fol. eleganter dentatis. *Herm. parad. t.* 193.

Leaves runcinate, ſiliques tricuſpidate.

7. Heſperis laciniata.
Allion. pedem. n. 985. *t.* 82. *f.* 1.

Stem branched, leaves unequally jagged, corolla ſulphur-coloured.]

DESCRIPTIONS, &c.

1. The leaves of this ſort are much larger than thoſe of the Garden Rocket, and of a paler green; the ſtalks are cloſely ſet with briſtly hairs; the flowers grow in looſe panicles at the top of the ſtalk, and appear about the ſame time with the Garden Rocket.

Native of Auſtria and Hungary. Much cultivated abroad for the great fragrancy of the flowers in the evening. The ladies in Germany have pots of it placed in their apartments, whence it obtained the name of Dame's-Violet.

[Cultivated here by Mr. Miller in 1739[a].]

2. The ſecond ſort grows naturally in Italy; the Garden Rocket with purple flowers was formerly in greater

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[b] Linn. ſpec.

[a] Hort. kew.

plenty in the Engliſh gardens than at preſent, having been long neglected becauſe the flowers were ſingle, and made but little appearance: however, as they have a very grateful ſcent, the plant is worthy of a place in every good garden. This riſes with an upright ſtalk a foot and a half high, with ſpear-ſhaped leaves which ſit cloſe to the ſtalk, and are ſlightly indented on their edges, ending in acute points: the flowers are produced in a looſe thyrſe on the top of the ſtalks; the petals are roundiſh and indented at the points, of a deep purple colour, and ſmell very ſweet, eſpecially in the evening or in cloudy weather. It flowers in june, and the ſeeds ripen the latter end of auguſt.

[Mr. Miller is of opinion that the Garden Rocket with white flowers is different from that which bears purple ones, becauſe] the leaves are not ſo long, but much broader, and the borders entire; the flowers not quite ſo large, nor forming ſo good ſpikes, nor having ſo fine a ſcent. [It is however generally agreed that they are not ſpecifically diſtinct. There are double flowers in the gardens of both colours; and having a mixture of both. Mr. Ray obſerved the wild ſingle ſort flowering in the month of june, in the meadows between Salerno and Naples.—This has been known to our gardens much longer than the other, for Gerarde in 1597 ſpeaks of it as being then ſown in gardens for the beauty of the flowers. And Johnſon adds (1633) that by the induſtry of ſome of our floriſts, within theſe two or three years hath been brought unto our knowledge a very beautiful kind of theſe Dame Violets, having very fair double white flowers.—The names in Gerarde are *Damaſk Violets*, *Winter Gillofloures*, *Rogues Gillofloure*, and *Cloſer Sciences*.—Parkinſon adds *Queen's Gilloflowers*.

β. The habit of the *Siberian Rocket* is ſo much the ſame in all its parts with the common Garden Rocket, that it may fairly be looked upon as a variety. It differs however in having a ſtalk of twice the height; the corolla is purple, not white, and the claws of the petals are twice as long as the calyx; the border is blunt, and ſcarcely, if at all, emarginate; it has however the ſame little prominent point which that has. The leaves are longer, narrower, and more ſerrate. But Siberia produces many plants which are larger than the ſame ſpecies in Europe[b].]

Mr. Miller ſays, it has a ſtrong branching ſtalk between two and three feet high, and very hairy: oblong heart-ſhaped leaves, ending in acute points, ſitting cloſe to the ſtalk, four inches long, and an inch and half broad at their baſe; the upper part of the ſtalk divides into two or three branches, with ſmall leaves of the ſame ſhape with the others, and terminated by looſe panicles of large, ſingle, purple flowers, very fragrant.

It flowered at the end of june 1757.

3. [*Scentleſs Rocket* reſembles the foregoing ſpecies ſo much, as ſcarcely to be diſtinguiſhed except by a ſkilful botaniſt. The leaves however are almoſt haſtate with the baſe tranſverſe; they are finely toothed, eſpecially at the baſe, ſofter, and not ſo ſcabrous. The calyx is not coloured. The petals are blunt, without any point. The ſtamens are not prominent beyond the tube of the flower[c].]

It riſes with an upright ſtalk near two feet high. Leaves dark-green, ſeſſile. The flowers grow in looſe ſpikes on the top of the ſtalks; in ſome they are white, in others purple, and ſometimes both colours ſtriped in the ſame flower; theſe having no odour, are not ſo deſerving of a place in gardens.

From this ſort, the double white and purple Rockets have been accidentally obtained, which are much eſteemed for the beauty of their flowers; and if they had the agreeable odour of the Garden Rocket, they would be ſome of the beſt furniture for the borders of the flower-garden, but they are without ſcent; however, for the beauty of their flowers, they are by ſome greatly eſteemed.

4. [The ſtem, leaves, and pods of this plant are rough with three-barbed hairs. The flowers are fleſh-coloured, with narrow, ſublanceolate, bluntiſh, petals. The pods are ſeſſile, ſtiff, round, ſomewhat flatted, blunt with a ſharp point[d].]

It is an annual plant, with a very branching ſtalk, about nine inches high; terminated by looſe panicles of ſmall purple flowers, which appear in june and july, and are ſucceeded by long pods ſitting cloſe to the ſtalks, and filled with ſmall ſeeds, which ripen in ſeptember. It is a native of Africa.

5. This alſo is an annual plant, ſending out ſeveral heart-ſhaped leaves from the root, which ſpread on the ground. The ſtalk riſes nine inches high, branching towards the top, with leaves of the ſame ſhape, but embracing. The flowers are produced in looſe panicles at the ends of the branches; they are of a lively purple colour, and thoſe plants which riſe in the autumn, flower early in the ſpring. It is a native of the South of France.

[Cultivated in 1739, by Mr. Miller[e].

6. Leaves naked, narrow. Calyxes hairy. Flowers of a dull colour, and unpleaſant ſmell. Pods knotty and three-cuſped[f].]

It is a low annual plant, with pointed leaves, having the borders indented as if torn. The corolla is purple. It is a native of Portugal, [and the South of France: and occurs twice, under this name, and that of Cheiranthus lacerus.

7. Root biennial. The whole plant villoſe with ſhort hairs. Stalks round. Leaves ſeſſile, lanceolate, deeply and unequally toothed, ſoft, and ſubcinereous green. Calyx cylindric, converging, green, a little gibbous at the baſe, the leaflets linear, acute, concave. Corolla ſpread out flat, claws ſcarcely the length of the calyx, border linear, ovate at the end and ſpreading wider, not acute, ſlightly emarginate, without ſcent, greeniſh towards the claws underneath. Anthers ſulphur-coloured, haſtate, two-furrowed. Pods flatted. The peduncles are ſhorter than the calyx and upright; the flowers at firſt form an umbel, but afterwards a raceme. The root-leaves are on a ſhort petiole, ſcarcely equal to half the length of the leaf, convex underneath and flat above. Theſe leaves are firmer than thoſe on the ſtem, ſucculent, ovate, obſcurely and rather angularly toothed.

Native of Piedmont, about *la Briga* and *Soſpello*, on rocks expoſed to the ſun[g].]

PROPAGATION AND CULTURE.

1. This is propagated by ſeeds in the ſame manner with the Garden Rocket. It is not quite ſo hardy, and very ſubject to rot in winter, eſpecially in a moiſt ſoil, or in rich land; it ſhould be planted therefore in a dry poor ſoil, and a warm ſituation. If ſome plants be ſet in pots, and placed under a common frame in winter, it will be a ſure way to preſerve them.

2. This being biennial young plants ſhould be raiſed every year to ſupply the place of thoſe which decay: if the ſeeds are permitted to ſcatter, the plants will come up without trouble in the ſpring; and if the ſeeds are ſown, the beſt ſeaſon for it is in the autumn; becauſe thoſe which are ſown in the ſpring often fail if the ſeaſon proves dry, or will remain a long time in the ground before they vegetate. This plant ſhould have a loamy undunged ſoil, in which it will thrive better than in rich land.

There is a variety of this with double flowers, in ſome of the gardens in France; but that which we have in England, is a variety of the third ſort with unſavoury flowers.

3. Being naturally biennial, the plants with ſingle flowers rarely ſurvive the ſecond year; nor will thoſe with double flowers continue much longer; ſo that unleſs young plants are annually raiſed to ſupply the place of the old ones, there will ſoon be a want of them, which is what few perſons are careful enough to obſerve; but thinking the roots to be perennial, truſt to their putting out offsets, or the plants remaining after they have flowered; and finding them decay, are apt to think their ſoil very improper for them, and are at a loſs to account for their decaying; whereas, when the plants have flowered, they have finiſhed their period, and ſeldom continue to flower a ſecond time

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[b] Lin. ſpec.

[c] Ibid.

[d] Linn. ſpec.

[e] Hort. kew.

[f] Linn. ſyſt.

[g] Allioni.

from the ſame root; though in poor land, they will often put out a few weak offſets, which may flower again, but ſeldom ſo ſtrong as the principal root; therefore thoſe who are deſirous to propagate theſe plants, ſhould do it in the following manner:

There ſhould be ſome ſtrong roots of each ſort kept apart for this purpoſe, which are not intended to flower; when theſe have ſhot up their flower-ſtalks about ſix inches high, they ſhould be cut cloſe to the bottom; each of theſe may be divided in the middle to make two cuttings, which ſhould be planted in a ſoft, gentle, loamy ſoil, to an eaſt expoſure, where they may have only the morning ſun; and theſe may be planted pretty near together, ſo as to be covered with hand or bell-glaſſes, which ſhould be put over them after the cuttings have been well watered, and cloſely ſhut down, drawing the earth round the rim of the glaſſes to exclude the air; then the glaſſes ſhould be ſhaded with mats every day when the ſun is hot; and if the cuttings are gently refreſhed with water once in ſeven or eight days it will be ſufficient, for too much moiſture will cauſe them to rot: when theſe are watered, the glaſſes ſhould be cloſely ſhut down again as before; with this management the cuttings will put out roots in five or ſix weeks, and will begin to ſhoot above; then the glaſſes ſhould be gently raiſed on one ſide to admit the air to them, and ſo gradually harden them to the open air, to prevent their drawing up weak. When theſe have made good roots, they ſhould be carefully removed, and planted in an eaſt border at about eight or nine inches aſunder, obſerving to ſhade and water them till they have taken new root; after which they will require no other care, but to keep them clean from weeds till the autumn, when they may be tranſplanted into the borders of the pleaſure-garden, where they are deſigned to flower.

The roots which are thus cut down, will ſend up more ſtalks than before; and when theſe are of a proper height, they may be cut off and treated in the ſame way; ſo that if the roots are ſound, there may be two or three crops of theſe cuttings taken from them, and by ſo doing, the old roots may be continued much longer than if they are permitted to flower; and by this management, there may be always a ſupply of good plants for the flower-garden.

Theſe plants are very ſubject to canker and rot when they are planted in a light rich ſoil, but in poor ſtrong ground, I have ſeen them thrive and flower in the utmoſt perfection, where the ſtems of flowers have been as large, and the flowers as fair as the fineſt double Stock-gilliflowers. Their ſeaſon of flowering is in the beginning of june, and young plants may be raiſed from the ſtalks after the flowers have decayed, by cutting them in lengths, and planting them in the manner before directed; but theſe ſeldom make ſo good plants as the young cuttings, nor are they ſo certain to grow.

4. This is rarely cultivated, except in botanic gardens. If the ſeeds are permitted to ſcatter, the plants will come up without care, and only require to be kept clean from weeds; or they may be ſown in ſpring or autumn, where they are to ſtand, for they do not bear tranſplanting well.

5. If the ſeeds are ſown in the autumn, they ſucceed much better than in the ſpring.

6. If the ſeeds are ſown in the ſpring upon ſheltered borders, where the plants are to remain, and they are thinned and kept clean from weeds, the plants will flower in july, and produce ripe ſeeds in autumn.

[Hesperis. See *Cheiranthus, Eryſimum, Siſymbrium.*]

HEUCHERA. (*From Jo. Henr. de Heucher, Archiater and Profeſſor of Medicine at Witteberg, author of Hortus Wittebergenſis, which he deſcribed in* 1711 *and* 1713.)

Lin. gen. n. 320. *Reich.* 349. *Schreb.* 447. *Gærtn. t.* 36. *Juſſ.* 308.

Claſſ. 5. 2. Pentandria Digynia.

Nat. order of *Succulentæ. Saxifragæ,* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, five-cleft, rounded, narrow: *clefts* obtuſe.

Cor. *Petals* five, inſerted into the edge of the calyx, oval-linear, the length of the calyx.

Stam. *Filaments* five, ſubulate, upright. *Anthers* roundiſh.

Pist. *Germ* roundiſh, half-five-cleft, ending in two, ſtraight *ſtyles,* the length of the ſtamens, (permanent, ſubulate-ſetaceous, long, diverging, *G.*). *Stigmas* blunt.

Per. Capſule ovate, acuminate, half-five-cleft, two-beaked, two-celled, the beaks bent back, (inferior, cloſely barked by the calyx, opening by a hole within the ſtyles, *G.*)

Seeds many, ſmall.

ESSENTIAL CHARACTER.

Petals five. *Capſ.* two-beaked, two-celled.

SPECIES.

1. Heuchera americana. *American Heuchera* or *Sanicle.*
Lin. ſpec. 328. *ſyſt.* 266. *Reich.* 1. 634. *hort. cliff.* 82. *Gron. virg.* 29. *Murr. in nov. com. gott.* 3. 66. *Gærtn. fruct.* 177.
Cortuſa americana, flore ſqualide purpureo. *Herm. par. t.* 131. *Pluk. alm. t.* 58. *f.* 3. *Raii hiſt.* 3. 509.
Scapes almoſt naked, thyrſe elongated, root-leaves ſeven-lobed, on long petioles, doubly and ſharply crenate.

[2. Heuchera dichotoma.
Lin. ſyſt. 266. *Murr. in com. gott.* 1772. *p.* 64. *t.* 1.
Stem branched, peduncles two-flowered axillary, leaves linear-lanceolate oppoſite entire on the ſtem.]

DESCRIPTIONS, &c.

1. Root perennial, ſending out many cordate-ovate leaves, four or five-lobed, of a lucid green, and ſmooth, from among theſe come out the ſcapes, a foot high, dividing at top into a looſe panicle, ſuſtaining many ſmall hairy flowers, of an obſolete purple colour. It is a native of Virginia; flowers in may, and the ſeeds ripen in auguſt.

[Gærtner remarks, that the capſule may be regarded as of the circumciſed kind; for if it be ſlightly preſſed with the fingers, the horns, together with the partition and lid fall off, leaving the upper margin ſmooth and quite entire.

It appears by the ſupplemental volume to Ray's hiſtory, that it flowered in the Engliſh gardens before 1704.

2. This is a ſpecies which recedes a little in point of the appearance of the flower from the characters of the genus; yet not ſo much ſo as juſtify the inſtitution of a new genus for it. The whole plant is hairy: the ſtem at firſt proſtrate, then obliquely aſcending; roundiſh; about a palm and half long, with many ſcattering branches towards the baſe; dichotomous above: the leaves are linear-lanceolate, entire, ſharp, pubeſcent, eſpecially at the baſe, oppoſite, ſomewhat ſtem-claſping, an inch and half long, very ſpreading. Peduncle emerging laterally from the boſom of the divarications of the branches, erect, long, dilated at the baſe; two-flowered; with two ſmall pedicels, of which one is longer than the other. Calyx one-leafed, hairy, pentagonal, five-parted; the inciſures very ſharp; corolla pentapetalous, yellow; petals erect, ovate. Stamens five, half the length of the corolla; anthers ovate: piſtils two; germ ſingle, ovate: crowned with the diviſions of the calyx. Styles two, ſubulate, divaricated. Stigmas ſomewhat cornered. Pericarp a two-beaked capſule, ovate and two-celled. Seeds many, minute.—Native place uncertain [a].]

PROPAGATION AND CULTURE.

It is propagated by parting the roots in autumn, and ſhould be planted in a ſhady ſituation. There is little beauty in this plant, but being hardy enough to thrive in the open air in England, it is preſerved in ſome gardens for the ſake of variety.

[Hevea. See *Siphonia.*]

HIBISCUS. (Ἰβισκος *of Dioſcorides. Derivation unknown.*)

Lin. gen. n. 846. *Reich.* 911. *Schreb.* 1139. *Cavanill. diſſ.* 3. 143. *Gærtn. t.* 134. *Juſſ.* 273.

Ketmia. *Tournef.* 26.

Solandra. *Murr.* & *Juſſ.*

Claſſ. 16. 6. Monadelphia Polyandria.

Nat. order of *Columniferæ.—Malvaceæ,* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* double. *Outer* many-leaved, permanent; *leaflets* linear: more rarely one-leafed, many-cleft.

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[a] Murr.

Inner one-leafed, cup-ſhaped, half-five-cleft, permanent; or five-toothed, deciduous.

Cor. *Petals* five, roundiſh-oblong, narrower at the baſe, ſpreading, faſtened at bottom to the tube of the ſtamens.

Stam. *Filaments* very many, united at bottom into a tube, at top (in the apex and ſurface of this) divided and looſe. *Anthers* kidney-form.

Pist. *Germ* roundiſh. *Style* filiform, longer than the ſtamens, five-cleft at top. *Stigmas* headed.

Per. *Capſule* five-celled, five-valved: *partitions* contrary, doubled.

Seeds ſolitary or ſeveral, ovate-kidney-form.

Obs. Ketmia T. *has the capſule ovate, and ſeveral ſeeds.*
H. pentacarpos *has the capſule globular, and the ſeeds ſolitary.*
H. populneus *has the capſule globular, berried and cloſed; the outer calyx three-leaved and caducous; the inner obſcurely five-toothed, and permanent.*
H. tiliaceus *has the outer calyx one-leafed, crenate.*
H. trionum *has the inner calyx inflated.*
H. micranthus, rigidus, hirtus, phoeniceus *have the ſeeds woolly on all ſides.*
H. ſyriacus *has ſeeds woolly in the circumference. The capſule in ſome is ovate, in others long; the outer calyx is from three to twelve-leaved.*
H. Solandra *has no outer calyx.*

ESSENTIAL CHARACTER.

Cal. double: outer many-leaved. *Capſ.* five-celled, with many ſeeds.

SPECIES.

1. Hibiſcus Moſcheutos.
Lin. ſpec. 975. *Reich.* 3. 357. *hort. upſ.* 205. *cliff.* 349. *Gron. virg.* 102.
H. populneus. *Mill. dict. n.* 17.
Althæa roſea peregrina, forte Roſa moſcheutos Plinii. *Corn. canad.* 144. *t.* 145. *Mor. hiſt.* 2. 532. *ſ.* 5. *t.* 19. *f.* 6. *Raii hiſt.* 602. *Park. theat.* 303. *n.* 3. 304. *f.* 2. *n.* 3.
Leaves ovate acuminate ſerrate, ſtem very ſimple, petioles floriferous.

2. Hibiſcus paluſtris. *Marſh Hibiſcus.*
Lin. ſpec. 976. *Reich.* 357.
Althæa paluſtris. *Bauh. pin.* 316.—Cytini flore. *Park. theat.* 305. *f.* 1. *n.* 7.
A. hortenſis ſ. peregrina. *Dod. pempt.* 655.
A. Sida. *Bauh. hiſt.* 2. 957. *f.* 1. *Raii hiſt.* 1066. 1.
Stem herbaceous very ſimple, leaves ovate ſlightly three-lobed tomentoſe underneath, flowers axillary.

[3. Hibiſcus micranthus. *Minute-flowered Hibiſcus.*
Lin. ſyſt. 628. *ſuppl.* 308.
Leaves roundiſh entire ſerrate, corollas reflex-oblique.

4. Hibiſcus microphyllus. *Minute-leaved Hibiſcus.*
Vahl ſymb. 1. 50. *Forſk. deſcr.* 126.
Leaves oval rough-haired ſerrate in front, ſtem ſhrubby.

5. Hibiſcus urens.
Lin. ſyſt. 628. *ſuppl.* 309.
Tomentoſe; leaves kidney-ſhaped crenate, calyxes woolly.

6. Hibiſcus præmorſus. *Round-leaved Shrubby Hibiſcus.*
Lin. ſyſt. 628. *ſuppl.* 309. *Jacqu. ic. collect.* 1. 81. *Ait. hort. kew.* 2. 454.
Pavonia cuneifolia. *Cavan. diſſ.* 3. 139. *t.* 45. *f.* 1.
Urena præmorſa. *L'Herit. ſtirp. nov.* 2. *t.* 51.
Leaves roundiſh tooth-ſerrate retuſe pubeſcent.

7. Hibiſcus cordifolius. *Heart-leaved Hibiſcus.*
Lin. ſyſt. 629. *ſuppl.* 309.
Arboreous, tomentoſe, leaves cordate ovate ſerrate, flowers peduncled terminating, calyx many-leaved linear long.

8. Hibiſcus rigidus.
Lin. ſyſt. 629. *ſuppl.* 310.
Suffruticoſe, hirſute, branches ſimple, leaves oblong ſerrate, limb of the corolla reflex, ſeeds woolly.

9. Hibiſcus ſororius.
Lin. ſyſt. 629. *ſuppl.* 311.
Leaves cordate crenate ſcabrous, outer calyxes round dilated at the end.

10. Hibiſcus cancellatus.
Lin. ſyſt. 629. *ſuppl.* 311.
Stem weak rough with hairs, leaves cordate ſerrate, calyxes globular, having twenty ſubulate rays rough with hairs.]

11. Hibiſcus populneus. *Poplar-leaved Hibiſcus.*
Lin. ſpec. 976. *ſyſt.* 629. *Reich.* 3. 358. *fl. zeyl. n.* 258. *Loureiro cochinch.* 418.
H. bacciferus. *Forſt. fl. auſtr. n.* 260.
Alcea malabarica Abutili folio, fl. majore, ex albo flaveſcente. *Raii hiſt.* 1069.
Novella litorea. *Rumph. amb.* 2. 224. *t.* 74.
Bupariti. *Rheed. mal.* 1. 51. *t.* 29.
Leaves cordate quite entire, ſtem arboreous.

12. Hibiſcus tiliaceus. *Lime-tree leaved Hibiſcus.*
Lin. ſpec. 976. *ſyſt.* 629. *Reich.* 358. *fl. zeyl. n.* 259. *Gærtn. fruct.* 2. 251. *Loureiro cochinch.* 418. *Forſt. eſcul.* 73. *Burm. zeyl.* 136. *ind.* 150. (Ketmia). *Rumph. amb.* 2. 218. *t.* 73. *Rheed. mal.* 1. 53. *t.* 30.
Alcea malab., Abut. fol., fl. minore ex albo-flaveſcente, exterius ſubaſpero. *Raii hiſt.* 1070.
Leaves cordate roundiſh undivided acuminate crenate, ſtem arboreous, outer calyx ten-toothed.

[13. Hibiſcus ſimplex.
Lin. ſpec. 977. *Reich.* 359.
Leaves cordate three-lobed repand quite entire, ſtem arboreous entirely ſimple.

14. Hibiſcus ovalifolius.
Vahl ſymb. 1. 50. *Forſk. deſcr.* 124.
Leaves oval and ſubangular, outer calyxes five-leaved.]

15. Hibiſcus Roſa ſinenſis. *China Roſe Hibiſcus.*
Lin. ſpec. 977. *ſyſt.* 629. *Reich.* 359. *fl. zeyl. n.* 260. *Cavan. monadelph. diſſ.* 3. 158. *t.* 69. *f.* 2. *Loureiro cochinch.* 419. *Smith ſpicil. t.* 8. *Curtis magaz. t.* 158. *Breyn. cent.* 121. *t.* 56. *Raii hiſt.* 1068. *n.* 11. (Alcea). *Rumph. amb.* 4. 24. *t.* 8. *Rheed. mal.* 2. 25. *t.* 17.
H. javanica. *Mill. dict. n.* 7.
Leaves ovate acuminate ſerrate, ſtem arboreous.

[16. Hibiſcus braſilienſis. *Braſilian Hibiſcus.*
Lin. ſpec. 977. *Reich.* 359. *Plum. ic.* 160. *f.* 1?
Leaves cordate toothletted, outer calyx double the length of the other, ſtem ſhrubby, branches rough with hairs.

17. Hibiſcus hirtus. *Hairy Hibiſcus.*
Lin. ſpec. 977. *Reich.* 359. *Pluk. alm. t.* 254. *f.* 3. (Alcea).
Leaves lanceolate-ovate acuminate ſerrate, branches ſcabrous, ſtem herbaceous.

18. Hibiſcus phoeniceus.
Lin. ſyſt. 629. *ſuppl.* 310. *Jacqu. hort.* 3. 11. *t.* 14.
Leaves ovate acuminate ſerrate, peduncles jointed thickened above the joints, lobes longer, calyxes naked, ſeed woolly.]

19. Hibiſcus mutabilis. *Changeable Roſe Hibiſcus.*
Lin. ſpec. 977. *Reich.* 3. 360. *hort. upſ.* 205. *cliff.* 349. *Loureiro cochinch.* 419. *Brown. jam.* 286. *n.* 7. *Rumph. amb.* 4. 27. *t.* 9. *Rheed. mal.* 6. 69. *t.* 38—41.
H. ſinenſis. *Mill. dict. n.* 2.
Althæa arborea Roſa ſinenſis. *Mor. hiſt.* 2. 530. *ſ.* 5. *t.* 18. *f.* 2.
Roſa ſinenſis. *Ferr. flor.* 493. *t.* 497. *Merian, ſur. t.* 31.
Malva roſea arborea indica. *Park. theat.* 301. 8. *f.* 300. 8. *Raii hiſt.* 1069.
Leaves cordate-five-angled obſcurely ſerrate, ſtem arboreous.

[20. Hibiſcus ſpinifex. *Prickly-fruited Hibiſcus.*
Lin. ſpec. 978. *ſyſt.* 629. *Reich.* 361. *Jacqu. amer.* 196. *hort.* 2. 46. *t.* 103. *pict.* 96. *t.* 185. *Plum. ſpec.* 2. *ic.* 1. (Abutilon).
Leaves cordate crenate undivided, capſules ſet with ſpines ſtanding out.

21. Hibiſcus Solandra. *Maple-leaved Hibiſcus.*
L'Herit. ſtirp. nov. 5. 103. *t.* 49. *Ait. hort. kew.* 2. 455.
Solandra lobata. *Murr. in comm. gott.* 6. (1784) *p.* 20. *t.* 1. *Syſt. veget.* 623.
Triguera acerrifolia. *Cavan. diſſ.* 1. 41. *t.* 11.
Leaves ſubcordate three-cuſped ſerrate, calyxes uncalycled.]

22. Hibiſcus ſyriacus. *Syrian ſhrubby Hibiſcus,* or *Althæa Frutex.*
Lin. ſpec. 978. *Reich.* 361. *hort. cliff.* 350. *upſ.* 205. *Curtis magaz. t.* 83. *Loureiro cochinch.* 420.

Ketmia ſyriaca. *Scop. carn. n.* 863.

Alcea arboreſcens. *Cam. hort. t.* 3, 4.—ſyriaca. *Bauh. pin.* 316.—glabra, Ketmia dicta. *Bauh. hiſt.* 2. 957. *f.* 2. *Raii hiſt.* 1066.

Althæa frutex. *Park. parad. t.* 367. *f.* 5.—arboreſcens. *Ger. emac. t.* 933. *f.* 3. *Park. theat. t.* 305. *f.* 2.

Leaves wedge-form-ovate, gaſh-ſerrate towards the end, ſtem arboreous.

23. Hibiſcus ficulneus. *Fig-leaved Hibiſcus.*

Lin. ſpec. 978. *ſyſt.* 630. *Reich.* 361. *hort. cliff.* 498. *Fl. zeyl. n.* 263. *Forſk. ægypt. cent.* 4. 125.

Ketmia zeylanica fici folio, perianthio oblongo integro. *Dill. elth.* 190. *t.* 157. *f.* 190. *Burm. zeyl.* 137.

Leaves palmate-five-cleft, ſtem prickly, flowers peduncled.

[24. Hibiſcus ſpecioſus. *Smooth Hibiſcus.*

Ait. hort. kew. 2. 456. *Scop. inſubr.* 3. 35. *t.* 17?

Leaves palmate ſmooth, ſegments lanceolate ſerrate; ſtem, peduncles and calyxes even.]

25. Hibiſcus Sabdariffa. *Various-leaved Hibiſcus.*

Lin. ſpec. 978. *ſyſt.* 630. *Reich.* 361. *hort. cliff.* 350. *fl. zeyl. n.* 262. *Jacqu. obſ.* 2. 10. *t.* 35. *Swartz obſ.* 269. *Brown. jam.* 285. 5. *Pluk. alm. t.* 6. *f.* 2. (Alcea).

Althæa indica, goſſypii folio, acetoſæ ſapore. *Herm. lugdb.* 25. *Raii hiſt.* 1900.

β. Alcea indica magno flore. *Bauh. pin.* 317.

A. americana. *Cluſ. hiſt.* 2. 26.

Sabdarifa. *Ger. herb.* 791. *f.* 2. *emac.* 936. *f.* 2. *Park. theat.* 302. *f.* 4. *parad.* 368. 5. *t.* 367. *f.* 3. *Raii hiſt.* 1067.

Leaves ſerrate, the lower ovate undivided, the upper ſeven-parted, ſtem unarmed, flowers ſeſſile.

26. Hibiſcus cannabinus. *Hemp-leaved Hibiſcus.*

Lin. ſpec. 979. *ſyſt.* 630. *Reich.* 362. *Comm. hort.* 1. 35. *t.* 18. (Alcea). *Ehrët, pict. t.* 6. *f.* 1. (Ketmia). *Joan. Miller ic. t.* 43.

H. vitifolius. *Mill. dict. n.* 8.

Ketmia indica, cannabinis foliis, Bangue dicta. *Burm. zeyl.* 135. *ind.* 152.

Leaves ſerrate, the upper palmate five-parted, having one gland underneath, ſtem prickly, flowers ſeſſile.

27. Hibiſcus ſurattenſis. *Prickly-ſtalked Hibiſcus.*

Lin. ſpec. 979. *ſyſt.* 630. *Reich.* 363. *mant.* 436. *Burm. ind.* 152. *zeyl.* 135. 2. (Ketmia). *Rumph. amb.* 4. 46. *t.* 16. *Loureiro cochinch.* 420.

β. *Lin. zeyl. n.* 264. *Pluk. alm. t.* 5. *f.* 4. (Alcea). *Rheed. mal.* 6. 75. *t.* 44. *Raii hiſt.* 1901. (Alcea).

Prickly with prickles curved back, leaves five-lobed, outer calyxes appendicled, ſtipules half cordate, flowers peduncled.

[28. Hibiſcus pedunculatus.

Lin. ſyſt. 630. *ſuppl.* 309.

Hirſute; leaves five-lobed toothed, peduncles axillary one-flowered elongated.]

29. Hibiſcus Manihot. *Palmated-leaved Hibiſcus.*

Lin. ſpec. 980. *Reich.* 3. 363. *hort. cliff.* 350. *upſ.* 206. *Sabb. hort.* 1. *t.* 56. *Burm. ind.* 152. *Dill. elth.* 189. *t.* 156. *f.* 189. (Ketmia). *Pluk. amalth. t.* 355. *f.* 2. (Alcea).

Leaves palmate-digitate ſeven-parted, ſtem and petioles unarmed.

30. Hibiſcus Abelmoſchus. *Target-leaved Hibiſcus.*

Lin. ſpec. 980. *Reich.* 363. *hort. cliff.* 349. *upſ.* 206. *fl. zeyl. n.* 261. *mat. med.* 167. *Burm. ind.* 153. *zeyl.* 134. 2. *Brown. jam.* 285. *n.* 4. *Marcgr. braſ. t.* 45. (Alcea). *Merian ſurin. t.* 42. *Rumph. amb.* 4. 38. *t.* 15. *Rheed. mal.* 2. 71. *t.* 38.

Alcea ægyptiaca villoſa. *Bauh. pin.* 317. *Raii hiſt.* 1066.

Althæa ægypt. villoſa. *Mor. hiſt.* 2. 533. *f.* 5. *t.* 18. *f.* 9.

Leaves ſubpeltate cordate ſeven-angled ſerrate, ſtem hiſpid.

31. Hibiſcus eſculentus. *Eatable Hibiſcus.*

Lin. ſpec. 980. *ſyſt.* 630. *Reich.* 634. *Jacqu. obſ.* 2. 11. *t.* 35. *Burm. ind.* 153. *Comm. hort.* 1. 37. *t.* 19. *Raii ſuppl.* 518. *Sloan. jam.* 1. 223. *t.* 133. *f.* 3. *Brown. jam.* 285. *n.* 3. (Alcea). *Loureiro cochinch.* 421.

H. ficifolius. *Mill. dict. n.* 15. *R.*

Okra. *Kalm. itin.* 2. 209.

Quingambo. *Marcgr. braſ.* 31.

Leaves five-parted pedate, inner calyxes burſting at the ſide.

[32. Hibiſcus clypeatus.

Lin. ſpec. 980. *Reich.* 364. *Swartz obſ.* 270. *Sloan. jam.* 1. 216. *t.* 135. *f.* 1. (Malva.) *Plum. ſpec.* 3. *t.* 160. *f.* 2. (Ketmia).

Leaves cordate angular, capſules turbinate truncate hiſpid.

33. Hibiſcus vitifolius. *Vine-leaved Hibiſcus.*

Lin. ſpec. 980. *ſyſt.* 630. *Reich.* 364. *mant.* 569. 980. *fl. zeyl. n.* 265. *Gærtn. fruct.* 2. 250. *Herm. lugdb.* 26. *t.* 28. (Althæa). *Rheed. mal.* 6. 79. *t.* 46. *Raii hiſt.* 1880. (Abutilo).

Leaves five-angled ſharp ſerrate, ſtem unarmed, flowers drooping.

34. Hibiſcus zeilanicus.

Lin. ſpec. 981. *ſyſt.* 630. *Reich.* 365. *mant.* 436. *fl. zeyl. n.* 266. *Burm. ind.* 153. *t.* 48. *f.* 2. *Seba muſ.* 2. *t.* 18. *f.* 3. (Ketmia). *Pluk. alm. t.* 125. *f.* 3.

Leaves cordate-haſtate, peduncles alternate one-flowered jointed.

35. Hibiſcus virginicus.

Lin. ſpec. 981. *ſyſt.* 631. *Reich.* 366. *Gron. virg.* 102. *Pluk. phyt. t.* 6. *f.* 4. (Alcea).

Lower leaves cordate acuminate ſerrate, upper haſtate.]

36. Hibiſcus pentacarpos.

Lin. ſpec. 981. *Reich.* 366. *hort. cliff.* 350. *Micheli flor.* 54. *Tozzetti itin.* 2. 309. *Zannich. venet.* 155. *t.* 91.

Lower leaves cordate angular, upper ſubhaſtate; flowers nodding a little, piſtil drooping.

[37. Hibiſcus haſtatus.

Lin. ſyſt. 631. *ſuppl.* 310.

Hoary; leaves oblong ſimple, three-lobed at the baſe, quite entire; raceme terminating.

38. Hibiſcus fraternus.

Lin. ſyſt. 631. *ſuppl.* 311. *Merian ſurin. t.* 37.

Leaves three-lobed, outer calyxes with round rays, mucronate and concave at the tip.

39. Hibiſcus æthiopicus. *Dwarf wedge-leaved Hibiſcus.*

Lin. ſyſt. 631. *Reich.* 366. *mant.* 258. *Pluk. alm. t.* 254. *f.* 2. (Alcea).

Leaves ſubcuneate ſlightly three-toothed, the upper ones oppoſite; flowers terminating.]

40. Hibiſcus Trionum. *Bladder Hibiſcus.*

Lin. ſpec. 981. *ſyſt.* 631. *Reich.* 367. *hort. upſ.* 206. *Sabb. hort.* 1. *t.* 55. *Curtis magaz. t.* 209. *Gærtn. fruct.* 2. 250.

Ketmia Trionum. *Scop. carn. n.* 862.

Trionum. *Lin. hort. cliff.* 349.

Alcea veſicaria. *Bauh. pin.* 317. *Cam. epit.* 806. *Beſl. eyſt. æſt.* vi. *t.* 2. *f.* 1.—ſ. Veneta. *Park. theat.* 302. *f.* 2. *Raii hiſt.* 1067.—peregrina ſ. veſicaria. *Park. parad.* 368. 3.—veneta. *t.* 367. *f.* 2.—peregrina. *Ger.* 791. *f.* 1. *emac.* 936. *f.* 1.—peregrina ſoliſequa. *Lob. ic.* 650.

β. H. africanus. *Narrow-leaved African Bladder Hib.* *Mill. dict. n.* 20.

Alcea veſicaria capitis b. ſpei. *Mor. prælud.* 227. *hiſt.* 2. 533.

Ketmia veſic. africana. *Tournef. inſt.* 101.

γ. H. hiſpidus. *Broad-leaved African Bladder Hibiſcus.* *Mill. dict. n.* 21.

Leaves three-parted gaſhed, calyxes inflated.

[41. Hibiſcus elatus.

Swartz prodr. 102. *Brown. jam.* 284. 1. *Sloan. jam.* 1. 215. *t.* 134. *f.* 1, 2, 3.

Leaves cordate roundiſh entire, peduncles very ſhort one-flowered, calyx ten-toothed.

42. Hibiſcus clandeſtinus.

Cavan. hiſp. 1. *t.* 2.

Stem virgate rough with hairs ſhrubby, leaves ovate ſharp ſomewhat three-lobed, flowers minute cloſed.]

43. Hibiſcus tomentoſus.

Mill. dict. n. 5. *Sloan. cat. jam.* 95. (Malva).

Leaves heart-ſhaped angular-ſerrate tomentoſe, ſtem arboreous.

44. Hibiſcus cordifolius.

Mill. dict. n. 13.

Ketmia americana muteſcens foliis ſubrotundis crenatis hirſutis, flore luteo. *Houſt.*

Leaves heart-ſhaped hirſute crenate, flowers lateral, ſtem arboreous branched.

45. Hibiſcus bahamenſis.
Mill. dict. n. 14.
Leaves oblong-cordate ſmooth toothletted hoary underneath, with very large flowers.

DESCRIPTIONS, *&c.*

[Much the greater part of the numerous ſpecies in this genus are perennials. Many of them have ſhrubby ſtalks, but ſome are only herbaceous. The leaves are alternate, and commonly of a ſoft texture: in ſome of the ſpecies they are glandulous beneath, eſpecially on the midrib. The flowers are of the Mallow kind, axillary and terminating. The bark in ſeveral is capable of being drawn into threads and manufactured for packthread and ropes: and the capſule in ſome is eatable: others are much eſteemed for their ornamental flowers.]

1. Root perennial. Stalk ſingle, two feet high or more. Flowers large, purple.

[It is remarkable in this ſpecies, that the flower ſprings from the petiole of the leaf, as in *Turnera ulmifolia*[a].

The native place of growth is in Virginia and Canada. Cornutus affirms, and from him Ray and Moriſon, that it came from the woods of Africa; and we are informed by the latter, that it was introduced into the Royal (now no longer Royal) garden at Paris, in 1644.

2. *Marſh Hibiſcus* has the habit of the foregoing. The root is perennial. The ſtems are a foot and half in height, unbranched and annual. The leaves are broad ovate, bluntly ſerrate, three-nerved, acuminate[b], bright green on their upper ſide[c], but tomentoſe on their under. The peduncles come ſingly from the axils of the upper leaves; they are longer than the petiole, but do not ſpring from it, ſupport but one flower, and are jointed. The flower is very large[d], and of a bright purple colour[e].—Native of Virginia and Canada, in moiſt ground[f]. It flowers here in july and auguſt: and was cultivated by Mr. Miller in 1759[g].

3. Root annual. Stem round, upright, ſimple, a foot in height. Leaves alternate, petioled, without any angles. Flowers minute, on the ſummit of the ſtem. Seeds lanuginous.—Native of the Eaſt Indies, where it was found by Koenig[h].

4. This is a ſhrub, with the younger branches, leaves and calyxes rough with ſtellate hairs. Leaves roundiſh, ſerrate from the middle, veinleſs, five-nerved, more hairy underneath. Petioles longer than the leaves. Stipules minute, briſtle-ſhaped. Peduncles axillary, ſolitary, the length of the leaves, jointed towards the top, thicker. Outer calyx ten-leaved, with briſtle-ſhaped leaflets: inner five-leaved, with lanceolate leaflets, ſhorter than the outer[i].

5. This has the ſize and appearance of *Alcea roſea*. The herb is tomentoſe, ſlightly ſtinging. Stem herbaceous. Leaves rounded, ſcarcely lobed, unequally crenate, underneath more tomentoſe and paler. Peduncles uſually longer than the leaf. Flowers axillary, two or three together, ſubſeſſile, glomerate. Outer calyx a little ſhorter than the inner, conſiſting of ten linear, villoſe leaflets; the inner angular, thick, villoſe within and without. Corolla ſmall in proportion to the calyx, purple. Filaments narrow: anthers yellow. Found at the Cape of Good Hope, by Bach[k].

6. This is a beautiful ſhrub. The leaves are as it were truncate in the middle, crenulate, five-nerved, and ſoft. The flowers are ſmall and yellow. The capſules ſmall, five together, tubercled with a point. It differs from *H. æthiopicus* (n. 39). in the calyx not being hiſpid[l].

Native of the Cape of Good Hope. Gathered there by Mr. Fr. Maſſon, and introduced into the royal garden at Kew in 1774. It flowers from june to auguſt[m].

7. The figure of the leaves in this is the ſame as in *H. populneus*, without any angles. The calyx as in *H. Malvaviſcus* (*Achania*), but much longer, and having a greater number of leaflets. The flowers rank among the middle-ſized ones.—Native of South America, where it was obſerved by Mutis[n].

8. The twigs long, filiform, quite ſimple, ſtiff. The leaves ſmall and petioled. The ſtipules erect, briſtle-ſhaped, ſtiff. The peduncles axillary, one-flowered.—Found by Koenig, in graſſy ſpots of the iſland of Ceylon[o].

9. Stem herbaceous or ſuffruticoſe, columnar, hairy all over, ſupported by trees. Leaves alternate, petioled, cordate without angles, remote. Stipules awl-ſhaped, minute. Peduncles axillary, the length of the leaves, ſolitary, pubeſcent, one-flowered. Calyx hirſute: the outer conſiſting of ten, diſtant rays, ſhorter than the inner calyx, ſpreading at the end into a cordate, obtuſe, cowled leaf: the inner bell-ſhaped, larger, angular, five-cleft; the clefts ovate. The corolla, ſtamens, and piſtils as in *H. Manihot*. Capſule ſmooth, hairy, ſhorter than the calyx. Seeds ſmooth,—Found at Surinam, by Dahlberg[p].

10. Stem herbaceous, filiform, proſtrate, hairy; as is likewiſe the whole plant. Leaves alternate, petioled, ſagittate-cordate, toothed. Peduncles axillary, one-flowered, longer than the petioles. Outer calyx inflated: inner ſmall, five-cleft. Stigmas ten. Capſule half-five-grained; with five cells. Seeds very many. This alſo was found in Surinam by Dahlberg[q].

11. This is a tree, fifteen feet high or more, with a trunk larger than a man can encompaſs; the wood white and ſoft; and the bark like that of the Lime-tree: the branches long and ſpreading. Leaves acuminate, of a ſoft ſolid texture, ſmooth, paler underneath and marked with three ſtrong nerves running from the petiole to the edge; petioles long, round, and ſlender[r]. Peduncles axillary, ſolitary, one-flowered[s]. Outer calyx commonly one-leafed, almoſt quite entire, altogether undivided[t]: but ſometimes three-leaved. Corolla large yellowiſh white, inclining to green, becoming red as it decays; without ſcent.—Native of the Eaſt Indies, in ſandy ſoils, where it produces flowers plentifully the greateſt part of the year[u]. It has alſo been found in the South Sea-Iſlands; and was introduced into Kew garden in 1770, by Monſ. Richard[x].

This cannot be the *Hibiſcus populneus* of Miller, which ſeems to be the firſt ſpecies or *H. moſcheutos*.]

12. This riſes with a woody, twiſted, pithy ſtem, from eight or ten [to twelve or fifteen feet in height, ſmaller than a man may encompaſs,] dividing into ſeveral ſpreading branches towards the top, which are covered with a brown bark and a woolly down. Leaves alternate, of a lucid green on their upper ſide, and hoary on their under, full of large veins; [they are broader and rounder than thoſe of the foregoing, of a more ſolid and thicker texture, and ſmooth, on petioles of a middling length, underneath like velvet[y]. The younger leaves are ſubtrilobate, with three pores underneath. The ſtipules are large and rounded[z]. The flowers are produced towards the upper part of the twigs from the axils, on peduncles an inch long, branched, and ſupporting ſeveral flowers, forming all together looſe ſpikes. In figure and colour they reſemble the foregoing, but they are ſmaller, and roughiſh on the outſide, nor are they ſo curled and wrinkled; on the lower part of the neck, inſtead of the five-leaved roſe which there is in that, we have a large, round ſpot of a duſky red purple colour[a]. Both calyxes are one-leafed; the outer cloven half way into ten parts, the clefts alternately larger and ſmaller; the inner cloven half way into five parts, the clefts equal and the length of the capſule. Capſule ovate, pointed at the top, ſilky, ten-celled, opening ſpontaneouſly in ten parts when ripe: cells cloſed on every ſide, fiſſile at the central angle; and five ſeeds in each[b].

Gærtner agrees with Adanſon in the propriety of making a diſtinct genus of this ſpecies, under the name of *Pariti*. Thus there would be no end of dividing every large genus.

Native of the Eaſt Indies; and almoſt every where within the Tropics.—Cultivated by Mr. Miller in 1739[c].

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[a] Linn. ſpec.
[b] Ibid.
[c] Miller dict.
[d] Linn. ſpec.
[e] Miller dict.
[f] Linn. ſpec.
[g] Hort. kew.
[h] Linn. ſuppl.
[i] Vahl.
[k] Linn. ſuppl.
[l] Ibid.
[m] Hort. kew.

[n] Linn. ſuppl.
[o] Ibid.
[p] Ibid.
[q] Ibid.
[r] Ray hiſt.
[s] Linn. zeyl.
[t] Linn. ſpec.
[u] Ray hiſt.
[x] Hort. kew. 454.
[y] Hort. malab. Ray hiſt.
[z] Linn. ſyſt.
[a] Hort. malab. Ray hiſt.
[b] Gærtner.

In the iſland of Otaheite they make matting of the bark, as fine as our coarſe cloth. Alſo ropes and lines, from the ſize of an inch to that of a ſmall pack-thread: and fiſhing nets[d].

In the iſland of Otaheite, as Forſter informs us, they alſo ſuck this bark for food, when the bread fruit fails them: and in New Caledonia the inhabitants frequently ſubſiſt on it, though it is an inſipid food, affording very little nouriſhment.

13. Stem undivided, ſtraight, thickiſh. Leaves bluntiſh, ſmooth with an unequal margin, having a honied pore on the nerves underneath[e].—Linneus informs us that his plant was three years old, and that he had not ſeen the flowers. He aſſigns Aſia for its native place, and yet refers to Sloane. Swartz is of opinion that this is a doubtful plant. See *H. elatus.* (n. 41.)

14. The ſtellate hairs are placed on minute tubercles, towards the tops of the branches they are more crowded, below they are ſcattered. The leaves underneath are more hairy, they are acute at both ends, and the uppermoſt are ſomewhat angular. Stipules briſtle-ſhaped. The leaflets of the outer calyx are lanceolate, nerved, terminated by a briſtle ſhorter than the leaflet: the ſegments of the inner are ovate-acuminate. The flowers have the ſize and appearance of thoſe in H. vitifolius. The cells of the capſule are many-ſeeded, and therefore it is not an Urena. The ſeeds are villoſe[f].

15. The *China Roſe* grows in India to the ſize of an ordinary tree: with us it is ſhrubby, the *ſtem* round, erect, with alternate, ſpreading branches, that are wandlike, leafy, browniſh green and nearly ſmooth. *Leaves* alternate, ſpreading, unequally and coarſely ſerrate, entire at the baſe, five-nerved, bright green, very ſmooth, except the young ones, which are ſlightly downy; their petioles are round, downy on the upper ſide. *Stipules* in pairs, oppoſite, at the baſe of the petioles, linear, acute, deciduous. *Flowers* axillary, ſolitary, peduncled, large, of a deep ſcarlet colour. *Peduncles* twice as long as the petioles, round, ſtraight; thicker towards the top, with a joint beyond the middle. *Calyx* ſmooth: the outer generally in ſix linear acute ſegments, ſpreading; the inner longer, bell-ſhaped, divided half way down into four or five ſegments, angular, ribbed. *Petals* three times as long as the inner calyx, obovate, bluntiſh, waved, furniſhed with ſeveral ribs, paler on the outſide, yellow at the baſe. *Stamens* and *Piſtils* longer than the corolla, bent downwards, red except the anthers which are yellow. *Tube* of the *Filaments* cylindric, with five notches at the top. *Germ* ovate, ſmooth. *Stigmas* five, divaricate, blunt, ſilky, blood-red. The *Fruit* is hitherto unknown.

It is extremely common in the gardens of China and the Eaſt Indies; but its native country is unknown. Loureiro however affirms that it is ſpontaneous as well as cultivated both in China and Cochinchina; and that it is ſo common in the latter, that they have entire hedges of it to their gardens. It has been long known from its appearance on Chineſe ſcreens and paper hangings. The variety with double flowers is moſt frequently cultivated both in the Eaſt and in European hot-houſes: it is indeed rarely ſeen with ſingle ones[g].

Rumphius informs us that it varies with white flowers: but this is not eſteemed, for the inhabitants of India are extremely partial to whatever is red, which they conſider as a colour tending to exhilarate.

Loureiro remarks, that the double-flowered white variety is more difficult to cultivate, and differs a little from the others in having gaſh-ſerrate leaves, approaching in form to thoſe of *H. ſyriacus.* He alſo mentions another variety with large, double, brick-coloured flowers. But in ſo favourite a plant we ſhould not be ſurprized if there were many more varieties.

They make theſe handſome flowers into garlands and feſtoons on all occaſions of feſtivity, and even in their ſepulchral rites. They are put to a uſe which ſeems little conſiſtent with their elegance and beauty, that of blacking ſhoes, whence their names of *Roſæ calceolariæ*, and Shoe-flower[h]. The women alſo employ them to colour their hair and eyebrows black.

Mr. Miller cultivated it ſo long ſince as the year 1731[i]: but he informs us that he had never had it with ſingle flowers. It is even now rarely ſeen with ſuch in our ſtoves. With double ones it is common, thrives well, and is in blow during the greateſt part of the ſummer. The ſingle flowers are of very ſhort duration, but this defect is compenſated by their curious and beautiful ſtructure[k].

16. Braſilian Hibiſcus is a ſmall ſhrub, with the ſtem, branches, petioles, peduncles, and calyxes all rough with hairs. Stipules awl-ſhaped. Peduncles one-flowered, longer than the leaves. Outer calyx eight-leaved, linear, ſpreading. Capſule pentacoccous, not longer than the inner calyx. It has the appearance of *H. mutabilis*: and is a native of Braſil[l].

17. This is a ſmall plant. The ſtalk, but eſpecially the peduncles, as alſo the leaves and calyxes, are rough with ſtiffiſh hairs. Leaves broad lanceolate, finely ſerrate. Corolla purple. Capſules roundiſh. Seeds woolly.—Native of the Eaſt Indies[m].

Suppoſed, but without reaſon, to be a variety of *H. phoeniceus*[n].

18. This is a very beautiful ſhrub; a native of Ceylon. It blows in our ſtoves the whole ſummer, and is very ornamental with its deep red flowers[o]. It is ſet down in Linneus's ſyſtem (edit. 14.) and Supplement, as a variety of the foregoing, ariſing from culture; but it ſeems to be a diſtinct ſpecies.

19. Stem pale, ſingle, ſmooth, ſpreading out wide into leafy branches at top; the wood reſembling that of the Fig. Leaves the ſame ſize with thoſe of the Vine, having the roughneſs of Fig leaves, and the form of both, or rather of the angular leaves of Ivy; whitiſh underneath. Petioles rough, thick, three or four inches in length. Peduncles thicker towards the top, ſometimes tinged with red, ſuſtaining large handſome flowers[p].] Theſe alter in their colour, for at their firſt opening they are white, then they change to a bluſh roſe-colour, and as they decay they turn to a purple. In the Weſt Indies all their alterations happen the ſame day, but in England where the flowers laſt near a week in beauty, the changes are not ſo ſudden. It is a native of the Eaſt Indies (and Japan). The French firſt carried the ſeeds to their ſettlements in the Weſt Indies; and the inhabitants of the Britiſh colonies there, being ſupplied with the ſeeds from them, have given it the name of Martinico Roſe. It varies with double flowers, from which the ſingle is frequently produced; but the ſeeds of the ſingle ſeldom vary to the double.

[It is much cultivated in the gardens of China and Cochinchina.

The time of its blowing in our ſtoves is november and december. It was introduced here in 1690, by Mr. Bentick[q].

20. Outer calyx five-cleft. The capſule has one ſpine at the end, and two on the ſides, approximating to the oppoſite one, ſo that five only appear in the circumference[r].

Native of the Weſt Indies. Introduced in 1778, by William Wright, M. D. It flowers here in july[s].

21. *Maple-leaved Hibiſcus* has the air of *Napæa.* The *root* is annual. The *ſtalk* upright, branched on every ſide, round, hollow, villoſe, herbaceous, a foot and half in height: the branches alternate, ſpreading, round, hirſute. *Leaves* alternate, uſually three-lobed, generally entire at the baſe, the nerves prominent on both ſides; they are villoſe, ſcabrous, bright green, little or nothing paler underneath, ſpreading, three or four inches in length and breadth. The lower ones are ſcarcely three-cuſped; the upper ones of the branches ſinuate-three-lobed, or ſometimes but ſeldom five-lobed. *Petioles* ſpreading, round, hirſute, in the

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[c] Hort. kew. [d] Hawkſ. voy. 2. 217. [e] Linn. ſpec. [f] Vahl. [g] Smith ſpicil.

[h] Rumph. and Curtis mag. [i] Hort. kew. [k] Curtis mag. [l] Linn. ſpec. [m] Ibid. [n] Retz. obſ. 5. 5. [o] Linn. ſuppl. [p] Ray hiſt. [q] Hort. kew. [r] Linn. ſyſt. [s] Hort. kew.

older leaves the ſame length with the leaf. *Stipules* linear, ſharp, villoſe, ſpreading very much, but ſcarcely reflex. *Racemes* terminating, upright, villoſe, two inches long. *Flowers* alternate, ſtiff, four or five lines wide. *Peduncles* upright, round, villoſe, jointed at the tip, becoming twice or thrice longer when in fruit. *Bractes* two, like the ſtipules, at the ſide of each peduncle. *Perianth* ſingle, one-leafed, half-five-cleft or five-parted, villoſe; ſegments narrow lanceolate, ſharp, ſpreading a little, three or four lines in length and breadth. Petals white, blunt, ſpreading a little, united at the baſe, inſerted into the receptacle, longer than the calyx. *Filaments* ſhorter than the corolla. *Anthers* peltate, one-celled, whitiſh. *Germ* ovate, acuminate, marked with lines. *Stigmas* large, pubeſcent, white, cernuous. *Capſule* fixed to the calyx which is preſſed cloſe to it, oblong, acuminate, toruloſe, villoſe; from ſix to eight lines in length, and three or four in breadth. *Seeds* very many, angular, brown, faſtened both to the edges of the partitions and the central receptacle, which is a five-cornered column, awl-ſhaped at the top.

Murray has conſtituted a new genus of this, under the name of *Solandra*; but it agrees in the pericarp and all other reſpects with *Hibiſcus*, except in the want of an outer calyx, which is not ſufficient alone to warrant us in ſeparating this from the other ſpecies.

It is a native of Bourbon: where it was found by Commerſon. It was cultivated in the Paris garden before 1775[t]: and was introduced here in 1786, by Mr. Zier. It flowers in july and auguſt[u].]

22. This riſes with a ſhrubby ſtalk to the height of ſix or ſeven feet, ſending out many woody branches, covered with a ſmooth, gray bark; the leaves have the upper part frequently divided into three lobes, are placed alternately on the branches, and ſtand on ſhort foot-ſtalks. The flowers come out from the wings of the ſtalk at every joint of the ſame year's ſhoot; they are large, and ſhaped like thoſe of the Mallow, having five large roundiſh petals, which join at their baſe, ſpreading open at the top in the ſhape of an open bell: theſe appear in auguſt, and if the ſeaſon is not too warm, there will be a ſucceſſion of flowers part of ſeptember; the early flowers are ſucceeded by ſhort capſules; but unleſs the ſeaſon proves warm, they will not ripen in this country.

It is commonly called Althæa frutex by the nurſery gardeners, who propagate the ſhrubs for ſale; there are four or five varieties, which differ in the colour of their flowers; the moſt common has pale purple flowers with dark bottoms; another has bright purple flowers with black bottoms; a third, white flowers with purple bottoms; a fourth, variegated flowers with dark bottoms; and a fifth pale yellow flowers with dark bottoms; but the laſt is very rare at preſent in the Engliſh gardens; there are alſo two with variegated leaves, which are by ſome much eſteemed. [To theſe we may add another, introduced ſince the time of Miller, with double flowers.—It is a native of Syria, and is cultivated in Japan very much for hedges, and in Cochinchina, &c.

The Althæa frutex was cultivated in England in 1629, as we learn from Parkinſon[x], and was probably then a new ſhrub; for he ſets it down as tender, and to be kept in a large pot or tub, in the houſe or in a warm cellar.]

23. This is a native of Ceylon. It riſes with an herbaceous, upright, prickly ſtalk, from two to three feet high, dividing into ſmall branches at top. The flowers come out ſingly from the axils; they hang down, are ſmall, and white with purple bottoms, and are ſucceeded by ſhort obtuſe capſules.

[The prickles of the ſtem are placed on red warts, and are frequently bent back, which is not the caſe in *H. Sabdariffa*[y].

The leaves reſemble thoſe of the Fig-tree, but are ſmaller; they are rough, ſomewhat paler underneath, and have a few hairs; the lower ones are broader and commonly divided into five ſegments; the upper ones narrower and uſually three-lobed. Calyx oblong entire, divided only at the tip into ſmall jags reſembling threads, ſo that when the corolla expands the calyx generally burſts on one ſide. The flowers open only when the ſun ſhines; and that but for a few hours, in the morning, or about noon, they nod or hang down, and the petals ſpread irregularly; as in ſome Geraniums. The calyxes, ſeed-veſſels, &c. have a fine down on them[z].

It flowers from june to auguſt. The ſeeds were ſent from J. Ph. Breynius of Dantzick, to Mr. Miller and Dr. Sherard, and was cultivated by them in the botanic gardens at Chelſea and Eltham.

24. Perennial. Very nearly allied to *H. lævis*, deſcribed by Scopoli, in his *Flora Inſubrica*, only the leaves are all five-lobed in this, whereas in Scopoli's plant they are only three-lobed.—It is a native of South Carolina, and was cultivated in 1778, by Dr. Fothergill. It flowers in ſeptember[*].

25. *Root* annual, ſingle, deſcending. *Stalk* herbaceous, from one to three feet high, upright, ſubdivided, round, ſmooth, of a blood-red colour. *Leaves* alternate, broad-ovate, acuminate, blunt at the end, crenate, nerved, ſmooth on both ſides, the upper ones three or five-parted, upright. *Petioles* the length of the leaves, ſpreading, round, ſmooth, coloured. *Flowers* axillary, ſolitary, largiſh; on very ſhort, round, thick peduncles. *Outer calyx* has ten linear, awl-ſhaped, upright leaflets, of a dark purple colour: *inner* cup-ſhaped, the clefts broad-lanceolate, ſharp, pale with three purple lines, ciliate at the edge. *Petals* connate at the baſe, obcordate, larger on one ſide, veined, of a very pale ſulphur colour with a dark blood-red bottom. *Capſule* cloſed by the calyx, ovate. *Seeds* angular, black. Sometimes the leaves are entirely undivided.—The petioles in cultivation are without prickles; probably in their native growth they may be prickly[a]; as deſcribed in *Lin. ſyſt.*

In the Weſt Indies it is called *Red Sorrel*. The calyxes and capſules freed from the ſeeds make very agreeable tarts; and a decoction of them ſweetened and fermented is commonly called there *Sorrel cool drink*. It is a ſmall diluting liquor, much uſed in our ſugar-colonies, and reckoned very refreſhing in thoſe ſultry climates[b].

It is a native of India, and is cultivated in gardens both in the Eaſt and Weſt Indies. Among us it has been long known; being among the plants of Gerarde's garden in 1596. It flowers from june to ſeptember[c]. Gerarde laments, that having with great induſtry nouriſhed up ſome plants from the ſeed, and kept them unto the midſt of may, one cold night deſtroyed them all. He and Parkinſon call it *Thorny Mallow*. Ray mentions it as one of the plants which he had ſeen in the garden of Compton Biſhop of London at Fulham.

Mr. Miller makes two ſpecies of this, under the names of *Sabdariffa* and *goſſypifolius*, n. 9. & 10.

26. *Root* annual. *Stalk* five feet high or more, with a few upright prickles ſcattered about it. Branches few, ſimple. *Petioles* ſpreading, the length of the leaves, having ſtraight prickles ſcattered over their backs. The lower *leaves* are undivided and ovate; the middle ones three-lobed; the uppermoſt divided almoſt to the footſtalk into five lanceolate ſegments, theſe have no prickles, but the midrib has a gland at the baſe underneath. *Outer calyx* awl-ſhaped, upright, prickly; *inner* hiſpid, with a gland on each leaflet.] *Flowers* axillary; the corolla large, of a pale ſulphur colour, with a dark purple bottom. [*Capſule* roundiſh, hairy or prickly, covered with the calyx.—It agrees with *H. Sabdariffa* in ſtructure, appearance, ſerratures, and the gland under the leaves[d]. According to Miller, this is a taller plant, and the flowers are larger.

It was cultivated by Mr. Miller in 1759; and is a native of the Eaſt Indies.]

The bark of this and the foregoing ſpecies is full of ſtrong fibres, which the inhabitants of the Malabar coaſt prepare and make into cordage; and it ſeems as if it might be wrought into fine ſtrong thread of any ſize.

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[t] L'Heritier.

[u] Hort. kew.

[y] Linn. ſyſt.

[x] Parad. 369. n. 7.

[z] Dillen. elth.

[b] Browne jam.

[*] Hort. kew.

[c] Hort. kew.

[a] Swartz obſ.

[d] Linn. ſpec. and ſyſt.

27. *Stem* round, upright, ſtiff, two feet high, ſpotted with purple towards the top. *Petioles* horizontal, round, the length of the leaves: both they and the ſtem have hairs ſcattered over them, and abundance of crooked prickles underneath. *Leaves* ſpreading, palmate, half-five-cleft: clefts lanceolate, ſerrate, ſprinkled with little briſtles ariſing from a dot, and having little crooked prickles on the ribs underneath. *Stipules* kidney-ſhaped, ſtem-claſping, ſmooth and even, ciliate. *Peduncles* prickly, rough with hairs at the tip. *Corolla* yellow, with a dark purple baſe. Calyx as it were radiate[e].

Loureiro's deſcription is ſomewhat different, and ſupplies ſeveral particulars not in Linneus's. It is a *ſhrub* ſix feet in height, climbing, and branched: the ſtem, leaves, petioles, calyx, and peduncles are all prickly. *Leaves* ſome three-lobed, others five-lobed, ſerrate, ſcattered, on long petioles. *Flower* lateral, ſolitary, middle-ſized, on a long peduncle: *corolla* ſaffron-coloured within, and very red on the outſide. Both *calyxes* permanent: *outer* wheel-ſhaped, ten-leaved; leaflets ovate-oblong, pedicelled: *inner* five-cleft; the clefts ſharp, converging, keeled at the back and on the edge. *Corolla* bell-ſhaped, petals blunt, ſlightly cohering at the baſe. Tube of the *filaments* longer than the calyx: *anthers* oblong, curved inwards. *Germ* conical, five-cornered. *Styles* reflex, equal to the ſtamens. *Capſule* a broad cone, without prickles, ſilky; incloſed by the inner converging calyx; and containing many angular ſcabrous ſeeds[f].

Native of the Eaſt Indies, and Cochinchina. It is an annual, and flowers with us in july. Cultivated in 1768, by Mr. Miller[g], who ſays that the ſeeds were ſent him by Dr. Juſſieu from Paris.

The leaves are gratefully acid, and are eaten. In cataplaſms they aſſiſt in diſſolving hard tumours, &c. for which purpoſe the root is eſteemed to be more efficacious[f].

28. This was found at the Cape of Good Hope by Thunberg[h].]

29. This ſort riſes with an herbaceous ſmooth ſtalk three or four feet high, with leaves which are divided into ſeven ſegments almoſt to the bottom; the middle ſegment being four inches long and half an inch broad, the upper lateral ſegments about three inches long and the ſame breadth; theſe are indented at their extremities, but the lower ſegments are not much more than an inch long, and have foot-ſtalks four inches long. The flowers are produced from the wings of the ſtalks toward the top, ſtanding on ſhort peduncles; they are compoſed of five large ſulphur-coloured petals, which, when open, ſpread five inches wide; they have a dark purple bottom; and are ſucceeded by large, pyramidal, five-cornered, erect ſeed-veſſels, which are filled with pretty large ſeeds, having little ſmell or taſte.

[In Japan they uſe the mucilage of the root for giving conſiſtence to paper, as Thunberg informs us.

Native of China and Japan. It was cultivated in the Chelſea garden in 1712; and flowers in auguſt[i].]

30. This ſort grows naturally in the Eaſt Indies; the Society Iſles; and alſo in the Weſt Indies, where it is commonly known by the title of Muſk; the French cultivate theſe plants in their American iſlands, the ſeeds of which are annually ſent to France in great quantities, ſo that they certainly have ſome way of rendering it uſeful, as it ſeems to be a conſiderable branch of trade. This riſes with an herbaceous ſtalk about three or four feet high, ſending out two or three ſide branches, garniſhed with large leaves cut into ſix or ſeven angles, which are acute; they ſtand on long foot-ſtalks, and are placed alternately. The ſtalks and leaves of this are very hairy. The flowers come out from the wings of the ſtalk upon pretty long peduncles, which ſtand erect; they are large, of a ſulphur colour, with dark purple bottoms, and are ſucceeded by pyramidal five-corned capſules, filled with large ſeeds of a very muſky odour.

[A few of theſe ſeeds are ſufficient to perfume a whole room. They may undoubtedly be uſed in ſcenting powders and pomatums, inſtead of the animal Muſk, which is a ſcarce and dear commodity[k]: and are accordingly put to that uſe abundantly at Paris. In Arabia and Egypt they grind theſe ſeeds, and mix the powder with their coffee, to render it more agreeable to the head and ſtomach.

The officinal names are *Abelmoſchus*, from the Arabic Ab-El-Moſch, which ſignifies grain or ſeed of Muſk; and *Bamia moſchata*. Theſe ſeeds ſeem to have a claim, as a medicine, to the cordial and nervine virtues experienced from moſt other ſubſtances of that claſs[l].

This ſpecies was cultivated among us by John Tradeſcant, jun. in 1656[m].]

31. This riſes with a ſoft herbaceous ſtalk from three to five feet high, dividing at top into many branches. The flowers are axillary, of a pale ſulphur colour with dark purple bottoms, ſmall and of very ſhort duration, opening in the morning with the riſing ſun, but fading long before noon in warm weather. Capſules of different forms in different varieties: in ſome not thicker than a man's finger, and five or ſix inches long; in others very thick, and not more than two or three inches long; in ſome erect, in others rather inclined.

[The ſtem, according to Loureiro, is ſomewhat ſhrubby, ſix feet high, round, unequal, nearly upright: branches herbaceous, diffuſed, reclining, hiſpid. Leaves crenate, tomentoſe, on long hiſpid, ſcattered petioles. Flower ſolitary. Outer calyx eight-leaved: inner oblong, ſpathaceous, four-toothed at the tip. Capſule oblong, with five ſharp corners.—In *Syſt. veg.* the outer calyx is ſaid to be twelve-parted, and to fall with the corolla, except the baſe which continues. The inner is five-toothed. The remarkable circumſtance of its burſting on the ſide is mentioned by both authors.]

This ſort is common in the Weſt Indies, where the inhabitants cultivate it for the capſules, which they gather green to put into their ſoups and pepper-pots.

[They are generally boiled ſeparately, and added juſt before theſe meſſes are taken off the fire: but the ſeeds may be boiled in broth, like barley or any other ingredient, for they are not ſo mucilaginous. The pods, boiled and buttered, make a rich plate: but they are uſed only in private families in this form. They are full of a nutritive mucilage. It is known in Jamaica by the name of the *Okro* plant[k]. In China and Cochinchina it is cultivated in gardens, for the beauty and colour of the flower, though it is void of ſcent[n]. With us it has been known ſince the year 1692, when it grew in the royal garden at Hampton-court. Here it is annual, and flowers in june and july[o].

32. This is a ſhrub the height of a man and upwards. *Stem* upright, branched, round, pubeſcent. *Branches* ſubdivided, ſtiff, upright, tomentoſe. *Leaves* alternate, acuminate, toothletted, nerved, hirſute and ſomewhat ſcabrous, ſoft-tomentoſe underneath. *Petioles* longer, ſtiff, round, tomentoſe. *Peduncles* from the terminating axils, upright, thicker than the petioles, ſtiff, long, round, white-tomentoſe, one-flowered. *Corollas* pale, ſometimes duſky yellow[p]. *Calyx*—outer ten-cleft at the baſe; leaflets reflex, hirſute: inner unequal, thick, five-parted; the three hinder parts upright, broad-ovate, acuminate, nerved, wrinkled, rough with hairs. *Petals* unequal; the three hinder ones more erect, the two front ones bent down, united at the baſe, broad-lanceolate, blunt, thick, tomentoſe on the outſide. *Filaments* united above the middle. *Anthers* oblong, ſmall, fulvous. *Germ* hirſute, ovate, depreſſed. *Stigmas* red. *Capſule* large, roundiſh, furrowed, extremely hirſute, with ten blunt angles. *Seeds* roundiſh, large, whitiſh.

It grows, but rarely, in the iſland of Jamaica, in coppices near the coaſt. Its common name there is *Congo Mahoe*; the negroes affirming that it came ori-

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[e] Linn. ſpec.
[f] Loureiro cochinch.
[g] Hort. kew.
[h] Linn. ſuppl.
[i] Hort. kew.

[k] Browne jam. who calls it *Muſk Okro.*
[l] Lewis's mat. med. *Bamia.*
[m] Hort. kew.
[n] Loureiro.
[o] Hort. kew.
[p] Yellowiſh carnation colour, *Sloane.*

ginally from Africa[q]. Sir Hans Sloane ſays it grows on the Red hills, very plentifully.

33. This is an annual plant. *Stem* upright, round, a foot and half in height, nearly the thickneſs of a finger, green, ſomewhat tomentoſe, rough with a few minute dagger-points. *Leaves* like *Malva ſylveſtris*, cordate, bluntly ſerrate, veined, green on both ſides, ſpreading. *Peticles* round, ſpreading, the length of the leaf. *Stipules* briſtle-ſhaped, ſhort, hairy, ſpreading a little. *Peduncles* axillary, ſolitary, one-flowered, leafleſs, the length of the leaves, drooping before the flowers open. *Calyx*—outer of eight awl-ſhaped, ſpreading leaves. *Corolla* large, yellow with a dark purple baſe. *Stamens* and *piſtil* purple. *Stigmas* dark purple. *Capſule* with five blunt angles, very much flatted, rounded at the tip and ſides[r].

Gærtner deſcribes the capſule as being of the ſubſtance of paper, rufeſcent, ſubvilloſe, flatted a little; the five angles compreſſed and winged; gaping at the wings. *Seeds* about four in each of the five cells, kidney-ſhaped, powdered with very ſmall raiſed dots, and of a dirty ferruginous colour. Embryo curved, yellowiſh.—Native of the Eaſt Indies.

34. This alſo is an annual plant. *Stem* herbaceous, upright, round, rough with hairs: branches alternate, the lower ones longeſt. *Leaves* alternate, remote, deeply trifid, gaſh-crenate, blunt, gummous-arenaceous underneath. *Petioles* ſpreading, longer than the leaves, flatter above. *Stipules* awl-ſhaped, ſpreading. *Peduncles* ſolitary, axillary (at the ſide of the branchlet), extended ſideways, having a bent joint below the flower. Outer calyx as it were inflated in proportion to the capſule, ovate as in *Atractylis cancellata*. *Corolla* fleſh-coloured, the ſize of *Potentilla anſerina*. It differs from the other ſorts in the outer calyx; the flatneſs of the corolla; and in having the five outer ſtamens frequently diſtinct. The capſule is pentacoccous, parting by joints as in *Malva*[r]. In *Fl. zeyl.* it is ſaid to have the ſize and appearance of *Verbaſcum Blattaria:* with a twelve-leaved outer calyx; the leaflets linear and hiſpid.—Native of the iſland of Ceylon.

35. Stem green, upright. Stem-leaves cordate-oblong, finally haſtate, ſomewhat tomentoſe, three-nerved, very finely ſerrate. Peduncles one-flowered, ſolitary, axillary, forming ſomething of a naked raceme at top[s]. It is very nearly related to the next ſpecies, and perhaps only a variety[t].—Native of Virginia, in ſalt marſhes.

36. Root perennial. Stem three feet high, narrow. Stem-leaves cordate-oblong, upper ones haſtate, ſlightly three-nerved, tomentoſe underneath, very finely ſerrate. Peduncles axillary, on the top of the plant ſolitary, naked, longer than the petiole, one-flowered. Outer calyx ſpreading, with awl-ſhaped rays, ſcarcely the length of the inner. Corolla ſpreading, pale red, nodding a little. The whole of the ſtamens yellow; the anthers of a fuller colour. Style with the ſtamens drooping, white. Stigmas fleſh-coloured[s].—It grows near Venice, in marſhy places: and was found by Lerche near Aſtracan. Cultivated by Mr. Miller in 1759.

Linneus doubts whether this be really different from the foregoing, though it differs from it a little in the fruit. He ſuſpects that it may owe its origin to that ſpecies[s].

37. The whole of this is hoary with a white pubeſcence. Leaves petioled, elongate, broad-linear, ſome with appendicled lobes at the baſe, others exactly three-lobed, larger, ſmooth. Stipules oblong, quite entire, blunt, large, caducous. Raceme elongate, few-flowered. Bractes in pairs, ſtipule-ſhaped, oblique, at the exit of the pedicels. Calyxes ſimply cleft, without ſpines or appendicle. Capſule globular, ſmooth and even, hoary[u].—Native of the Society Iſles.

38. Stem herbaceous, ſmooth and even, as is the whole plant. Leaves petioled, deeply trifid; clefts ſerrate, lanceolate, the middle one largeſt; the midrib underneath has a glandular pore. Inner calyx five-parted, angular, twice as long as the other; the parts ovate-oblong, upright, edged, ſtiff. Corolla yellow. Capſule ſubglobular, pubeſcent, ſhort.—Native of Surinam[x].

Swartz ſuſpects it to be the ſame with *Hib. Sabdariffa.*

39. This is a ſmall ſhrub. Leaves alternate, except the uppermoſt, which are oppoſite, on very ſhort petioles, oblong, blunt, three-toothed at the end (ſometimes, but ſeldom five-toothed,) even with very few hairs above, but hiſpid underneath. Stipules aceroſe, ſcarcely longer than the petioles. Flowers peduncled, ſolitary: the peduncle ſhorter than the leaf. Outer calyx eight or ten-leaved, linear-lanceolate, hiſpid. Petals obovate, the ſize of the Strawberry flower, longer than the ſtamens.—Native of the Cape of Good Hope, where it was obſerved by Koenig[y]. It was introduced into the royal garden at Kew in 1774, by Mr. Francis Maſſon: and flowers here in auguſt[z].]

40. It riſes with a branching ſtalk a foot and a half high, having many ſhort ſpines which are ſoft, uſually, the leaves are divided into three lobes, which are deeply jagged almoſt to the midrib; theſe jags are oppoſite, and the ſegments are obtuſe: the flowers come out at the joints of the ſtalks upon pretty long peduncles; the outer calyx is compoſed of ten long narrow leaves, which join at their baſe; the inner is of one thin leaf, ſwollen like a bladder, cut into five acute ſegments at the top, having ſeveral longitudinal purple ribs, and is hairy; both theſe are permanent, and incloſe the capſule after the flower is paſt. The flower is compoſed of five obtuſe petals, which ſpread open at the top, and form an open bell-ſhaped flower; theſe have dark purple bottoms, but are of a pale ſulphur colour above [tinged ſometimes partially with pale purple on the outſide, where they are alſo ribbed. The leaves vary in their diviſion, the lower ones being ſometimes almoſt entire, and the uppermoſt next the flower moſt deeply cut, almoſt to the midrib, and the lobes moſt jagged; the two ſide lobes of theſe are ſometimes ſo deeply cut, that it may be ſaid to be a ſubquinquelobate leaf. At the baſe of each peduncle is a pair of long linear bractes. The corolla becomes wholly purple after it has folded up again.

The capſule is ovate, the conſiſtence of paper, puſtuled with protuberances occaſioned by the ſeeds, villoſe, black. The partitions inſerted into the middle of the valves. Receptacle none; the ſeeds fixed in a double row to the central edge of the partitions: there are from eight to twelve in each cell, kidney-ſhaped a little compreſſed, blackiſh-brown ſprinkled with very ſmall callous dots of a cinereous ferruginous colour[a]. According to Scopoli there are only five ſeeds in each cell. The outer calyx is eight-cleft and tubercled. The corolla on a peduncle longer than the leaf; with ovate acute bractes. Some of the leaves are five-lobed; and the petioles are ſemicolumnar.]

This is an annual plant, growing naturally in ſome parts of Italy and Auſtria. It has been long known in the Engliſh gardens by the title of *Venice Mallow.* Gerarde, (who cultivated it in 1596) and Parkinſon, call it alſo *Mallow* or *flower of an hour*, [and *Good night at noon;* or *Good night at nine*: for Gerarde affirms that it opens about eight of the clock, and ſhuts up again at nine.—On the 16th of auguſt 1796, the day being dry and fine, the thermometer at 66°, the barometer nearly at 30°, ſunſhine and clouds alternately, with a cool gentle breeze at N. E. The plants in a ſouthern expoſure, but open, in the border of a ſhrubbery, the flowers began to open ſoon after eight o'clock in the morning, and were not finally cloſed till after four. Being obſerved every day to the 6th of ſeptember, they continued opening uſually at nine or ſoon after, if the weather was fair. The 31ſt of auguſt being wet, they did not open all day. The 5th of ſeptember being very cloudy, they did not open till half after ten, and were never quite expanded all day. They cloſed from four to half after five, according to the weather; and the afternoon of ſept. 5th, being very fine, they did not cloſe till half after ſix.] The flowers certainly are of ſhort duration, and in hot weather continue but few hours open: however there is a ſucceſſion of them daily for a conſiderable time, in june, july, and auguſt.

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[q] Swartz obſ.
[r] Linn. mant.
[s] Linn. ſpec.
[t] Linn. ſyſt.
[u] Linn. ſuppl.

[x] Linn. ſuppl.
[y] Linn. mant.
[z] Hort. kew.
[a] Gærtner.

β. This reſembles the former, but the ſtalks grow more erect, are of a purpliſh colour, and very hairy; the leaves are compoſed of three lobes, which are divided almoſt to the foot-ſtalk; theſe are narrow, the middle lobe ſtretching out more than twice the length of the two ſide lobes, and they are but ſlightly indented on their edges, whereas thoſe of the former are cut almoſt to the midrib; the flowers are larger, and their colour deeper.

[Linneus adds that the ſtalk is more ſimple as well as more upright; that the uppermoſt leaves are five-lobed; and that the peduncles are longer than the petioles. He fancies it to be a daughter of *Hibiſcus Trionum* by *Malva capenſis* [b].]

γ. This alſo has at firſt ſight ſome reſemblance of the others; but it riſes with ſtrong hairy branching ſtalks, with much broader leaves than either of the former, the lower being divided into three, and the upper into five obtuſe lobes, which are crenated on their edges; the flowers are large, but of a paler colour than thoſe.

[Both theſe are natives of the Cape of Good Hope: and were cultivated by Mr. Miller, the latter in 1758.

41. This is a tree growing to a conſiderable ſize. The wood is of a dark olive colour; the bark pretty ſmooth; the trunk tall and ſtraight. The flowers are large and open, not unlike thoſe of the yellow Lily, either in ſize or appearance.

It is reckoned excellent timber. All the tender parts of the tree abound with a delicate mucilage, which may be uſed inſtead of the more common medicines of this tribe [c]. The bark is made into ropes of all ſorts [d].

Native of Jamaica, where it is called *Mahot* or Mahoe-tree.

42. *Stems* round, branched, ſcabrous, three feet high; covered with little, ſharp, divaricating briſtles, growing by threes. *Leaves* alternate, ciliate, ſomewhat ſcabrous, longer than the petioles. *Stipules* awl-ſhaped. *Flowers* very ſmall, axillary, ſolitary. *Peduncles* longer than the leaf, upright, jointed and thicker towards the tip. *Calyx* outer of ſix little briſtles, ſcarcely half a line in length: inner a little longer, half-five-parted, hairy. *Corolla* whitiſh, villoſe, ſcarcely larger than the calyx: becoming violet-coloured as it withers: petals ovate, never expanding. Tube of the ſtamens very ſhort, not viſible without a glaſs, covered with ovate yellow anthers. *Capſule* globular, the ſize of a pea, ſmooth, with five whitiſh furrows. *Seeds* blackiſh, with a very white wool drawn over them.—In the fruit, peduncles, and general air it approaches to *H. hirtus* and *phoeniceus*; but among other circumſtances differs from them in the flowers being extremely ſmall, and never opening.—Native of Senegal [e].

43, 44, 45. There are three ſpecies in Miller from the Weſt Indies: which I give as I find them, not knowing whether they are diſtinct from thoſe which are already ſet down or not.]

43. Stem woody, ſeven or eight feet high, ſending out many ſide branches towards the top covered with a whitiſh bark. Leaves about four inches long, and three broad towards their baſe, ending in acute points, and having ſeveral longitudinal veins. Flowers axillary on long peduncles. Petals roundiſh, yellow turning red as they decay. Capſules large, obtuſe, five-cornered, hairy.—Native of the Weſt Indies.

44. This ſort was diſcovered by the late Dr. Houſtoun in the iſland of Cuba, from whence he ſent me the ſeeds. This riſes with a woody ſtalk twelve or fourteen feet high, ſending out many lateral branches; the flowers come out ſingle from the wings of the leaves; they are of a very bright yellow colour, but not large, and are ſucceeded by ſhort capſules ending in acute points.

45. This has a perennial root but an annual ſtalk. The ſeeds were ſent me from the Bahama iſlands, and ſucceeded in the Chelſea garden, where the plants produced plenty of flowers, but did not ripen their ſeeds. This riſes with ſeveral ſtalks from the root, four feet high, with leaves, ending in acute points, of a light green on their upper ſide, but hoary on their under, and ſlightly indented on their edges, ſtanding upon long foot-ſtalks; the flowers are produced at the top of the ſtalks; they are very large, and of a light purple colour with dark bottoms, and are ſucceeded by ſhort capſules.

PROPAGATION AND CULTURE.

[The greater part of this genus of *Hibiſcus* are natives either of the Eaſt or Weſt Indies, and muſt be treated accordingly.

The firſt, ſecond, twenty-ſecond, thirty-fifth, thirty-ſixth, and fortieth are hardy enough to bear the open air in England. But of theſe, the firſt, ſecond, and thirty-fifth] ſeldom flower in the open air here, unleſs the ſummer proves very warm, though the roots will live, if they are planted in a ſheltered ſituation.

The only way to have theſe plants flower in this country, is to keep the roots in pots, and to ſhelter them under a frame in winter, and in the ſpring plunge them into a gentle hot-bed, which will cauſe them to put out their ſtalks early; and when the ſtalks are ſo high as to reach the glaſſes, the pots may be removed into a glaſs-caſe; where, if they are duly ſupplied with water, and have plenty of air in hot weather, they will flower very well in july, and in warm ſeaſons will ripen their ſeeds.

22. *Syrian Hibiſcus*, commonly called *Althæa Frutex*, is propagated by ſeeds, which ſhould be ſown in pots filled with light earth the latter end of march; and if they are plunged into a gentle heat, it will greatly forward the growth of the ſeeds. When the plants are come up, they muſt be inured to the open air, and in may the pots may be plunged into the ground, in a border expoſed to the eaſt, where they may have the morning ſun: the reaſon of my adviſing the pots to be plunged into the ground, is to prevent the earth from drying ſo faſt as it would do when the pots ſtand on the ſurface, ſo that the plants will not require ſo much water in ſummer: theſe plants will require no other culture, but to keep them clean from weeds, and in very dry weather to refreſh them with water during the firſt ſummer, but in autumn it will be proper to remove the pots under a common frame to ſcreen them from the froſt; or where there is not ſuch conveniency, they may be plunged cloſe to a hedge, pale, or wall, to a good aſpect; and in ſevere froſt, they ſhould be covered with mats, ſtraw, or other light covering; for although theſe plants, when they have obtained ſtrength, will reſiſt the cold of our winters, yet the young plants, whoſe ſhoots are tender, are very often injured by the firſt froſt of autumn: ſo that if they are not ſcreened the firſt year, they are often killed to the ground. Toward the latter end of march will be a good time to tranſplant theſe plants, at which time a ſpot of light ground muſt be prepared to receive them, which ſhould be divided into beds four feet broad, with paths of two feet broad between; then the plants ſhould be ſhaken out of the pots with the earth about them, and ſeparated with care, for their roots are very tender, and apt to break with little force; theſe ſhould be planted at about nine inches aſunder in the beds; ſo that if four rows are planted in each bed, there will be ſix inches allowed between the outſide rows and the paths. The ground ſhould be gently cloſed about the roots to prevent the air penetrating to them; and if a little old tanners bark, or mulch, is laid over the ſurface of the beds, it will prevent the earth from drying, and be of great uſe to the plants; during the following ſummer they muſt be kept clean from weeds, and if the following winter prove ſevere, it will be prudent to cover the plants again in autumn, eſpecially if they ſhoot late in the ſeaſon, or the autumn prove cold and moiſt, for then the plants will be in great danger of having their tops killed: in theſe beds the plants may remain two years, by which time they will be fit to tranſplant where they are deſigned to remain; for if they are

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[b] Linn. ſyſt.

[c] Brown. jam.

[d] Sloane.

[e] Cavanilles.

kept longer in the nurſery, they will not remove ſo well. The beſt time for tranſplanting theſe plants is the end of march, or the beginning of april, for they ſeldom begin to ſhoot till the end of april, or the beginning of may; they ſhould have a light ſoil, not too wet, for in ſtrong land their ſtems grow moſſy, and they never thrive after.

Theſe plants may alſo be propagated by layers; and by cuttings, which, if planted the latter end of march, in pots filled with light earth, and plunged into a gentle heat, will take root; but the plants ſo raiſed, are not ſo good as the ſeedlings. The ſeveral varieties may be increaſed by grafting upon each other, which is the common method of propagating thoſe with ſtriped leaves.

40. This ſort is propagated by feeds, which ſhould be ſown where the plants are deſigned to remain, for they do not bear tranſplanting well; if the ſeeds are ſown in autumn, the plants coming up early in the ſpring, will flower in the ſummer, and thoſe which are ſown early in the ſpring will ſucceed them; ſo that by ſowing them at three different ſeaſons, they may be continued in ſucceſſion till the froſt ſtops them. Theſe require no other culture but to keep them clean from weeds, and thin them where they are too cloſe; and if the ſeeds are permitted to ſcatter, the plants will come up full as well as when ſown, ſo that it will maintain its ſituation unleſs it is weeded out.

[The fifth, ſixth, twenty-fourth, twenty-eighth, and thirty-ninth, require the protection of the Greenhouſe, Cape-ſtove, or Glaſs-caſe. Theſe being natives of the Cape of Good Hope, except the twenty-eighth, which is from South Carolina.

The reſt, being the far greater number, or three-fourths of the whole, muſt be kept in the bark-ſtove, where ſome of them will make a ſplendid figure; particularly the fifteenth and nineteenth.

The principal mode of propagating theſe is by ſeeds,] ſown on a good hot-bed in the ſpring; and the plants afterwards put into pots filled with light earth, and plunged into a freſh hot-bed: treating them afterwards in the ſame way as the Amaranths. The more tender ſorts muſt be plunged in autumn into the tan-bed, there to remain, and to be treated as other tender plants from the Weſt Indies; giving them but little water in winter.

[Several of the ſorts will produce ſeeds here with care in a good hot-houſe; for thoſe which will not, we muſt have recourſe to the countries where they grow naturally. Moſt of them are perennial, and may alſo be propagated by cuttings; particularly the China Roſe, which is the moſt ornamental of them all.]

12. *H. tiliaceus* will flower the ſecond year, if the plants are brought forward; otherwiſe not before the third or fourth. It will bear the open air in ſummer, in a warm ſituation, but will not make any great progreſs.

19. The plants of this ſort ſhould not be quite expoſed to the open air the firſt ſeaſon, and the firſt winter will require the warmth of a moderate ſtove; but as they get more ſtrength, they may be treated with leſs care, for they will bear the open air in ſummer, in a warm ſheltered ſituation, and will live through the winter in a very good green-houſe, provided they have not too much wet; but the plants thus hardily treated, will not make ſo great progreſs, nor flower ſo well as with a little additional warmth; and if they are too tenderly managed, they will draw up weak, and be leſs likely to flower. This ſort uſually flowers in England in november, ſo that it keeps to the uſual time of flowering in its native country.

29. *H. Manihot* will produce flowers and perfect ſeeds the firſt ſeaſon. The plants may be continued through the winter in a moderate warmth, though few perſons are at the trouble of preſerving the plants after they have ripened their ſeeds, becauſe the young plants make a better appearance.

30. *H. Abelmoſchus* ſeldom lives more than one year in England, though it is biennial in its native country.

31. *H. eſculentus* will live in a warm border, and thrive for a time in a good ſeaſon, but with the firſt cold or bad weather the leaves drop off; it ſeldom flowers, and never perfects ſeeds; ſo that it muſt be ſheltered, at leaſt in bad weather.

36. Though the roots will live in the open ground, yet our ſummers are not warm enough to bring it to flower. The ſeeds therefore ſhould be ſown in a hot-bed, and when the plants are fit to remove, they ſhould each be planted in a ſeparate ſmall pot, and plunged into a moderate hot-bed, allowing them ſufficient air in warm weather. This may ſtand in the open air in ſummer, but will ſeldom flower; to do this it muſt be kept in a deep frame, where it will continue and flower ſeveral years.

[Hibiscus Malvaviscus. See *Achania.*

Hickery. See *Juglans.*

Hicracioides. See *Crepis.*]

HIERACIUM. (Ιερακιον, *Accipitrina, becauſe Hawks were ſuppoſed to ſharpen their ſight with the juice. Hence alſo the Engliſh name* Hawkweed, *and the French Eperviere* or *Herbe à l'Epervier.*)

Lin. gen. n. 913. *Reich.* 992. *Schreb.* 1238. *Tournef.* 267. *Vaill. mem. acad.* 1721. 3, 46, 49, 57, 58, 59, 60. *Gærtn. t.* 158. *Juſſ.* 169.

Piloſella. *Vaill. mem. acad.* 1721. 57.

Claſſ. 19. 1. Syngeneſia Polygamia Æqualis.

Nat. order of *Compoſitæ Semifloſculoſæ. Cichoraceæ,* Juſſ.

GENERIC CHARACTER.

Cal. *common* imbricate, ovate: *ſcales* ſeveral, linear, very unequal, longitudinal and incumbent.

Cor. *Compound,* imbricate, uniform: *corollules* hermaphrodite, numerous, equal.

Proper monopetalous, ligulate, linear, truncate, five-toothed.

Stam. *Filaments* five, capillary, very ſhort. *Anther* cylindric, tubulous.

Pist. *Germ* ſubovate. *Style* filiform, the length of the ſtamens. *Stigmas* two, bowed back.

Per. none. *Calyx* converging, ovate.

Seeds ſolitary, obtuſely four-cornered, ſhort. *Down* capillary, ſeſſile.

Rec. naked.

Obs. Hieracium V. *has the ſtem branched.* Piloſella T. *has a ſimple ſcape.*

ESSENTIAL CHARACTER.

Cal. imbricate (or calyculate) ovate. *Down* ſimple, ſeſſile. *Recept.* naked.

SPECIES.

* *With a one-flowered ſcape.*

[1. Hieracium incanum. *Hoary Hawkweed.*
Lin. ſyſt. 716. *Reich.* 3. 635. *Jacqu. auſtr.* 3. 47. *t.* 287. *Pollich pal. n.* 738. *Cluſ. hiſt.* 141. *Bauh. hiſt.* 2. 1038.
Apargia incana. *Scop. carn.* 2. *n.* 982.
Leontodon pyrenaicum. *Gouan illuſtr.* 55. *t.* 22. *f.* 1, 2.
L. hiſpidum β. *Lin. ſpec.* 1124.
Picris *n.* 25. β. *Hall. helv. De la Chenal, act. helv.* 8. 133.
Leaves quite entire, ſomewhat toothletted, lanceolate, ſcabrous.

2. Hieracium pumilum. *Dwarf Hawkweed.*
Lin. ſyſt. 716. *Reich.* 3. 636. *mant.* 279. *Jacqu. auſtr.* 2. *t.* 189? See n. 48. *Hall. helv. n.* 42.
Leontodon dentatum. *Lin. mant.* 107.
H. prunellæfolium. *Gouan illuſtr.* 57. *t.* 22. *f.* 3. *Retz. obſ.* 5. *n.* 118. *Allion. pedem. n.* 784. *t.* 15. *f.* 2. *Villars dauph.* 122.
Crepis pygmæa. *Lin. ſyſt.* 719.
Leaves ovate, petioles dilated, ſcapes with one or two flowers.

3. Hieracium alpinum. *Alpine Hawkweed.*
Lin. ſpec. 1124. *Reich.* 3. 636. *fl. lapp. n.* 283. *ſuec. n.* 696. *Hudſ. angl.* 343. *Wither. arr.* 844. *Lightf. ſcot.* 434. *t.* 18. *Hall. helv. n.* 49. *Scop. carn. n.* 967. *Krock. ſileſ. n.* 1274. *Villars dauph.* 103. *Allion. pedem. n.* 771. *t.* 14. *f.* 2. *Petiv. herb. brit. t.* 11. *f.* 2. *Mor. hiſt. ſ.* 7. *t.* 7. *f.* 5. (Piloſella).
H. alp. pumilum, fol. lanuginoſo. *Bauh. pin.* 129.
H. villoſum alp. flore magno ſingulari. *Raii ſyn.* 169. *t.* 6. *f.* 2.

H. pumilum 2. *Col. ecphr.* 2. 30. *Raii hiſt.* 241.
Leaves oblong entire toothed, ſcape almoſt naked, calyx hairy.

4. Hieracium Taraxaci. See *Apargia Taraxaci.*
Lin. ſpec. 1125. *Reich.* 3. 637. *Retz. obſ.* 4. 30. *t.* 2. *Wither. arr.* 845. *Lightf. ſcot.* 435.
Picris *n.* 27. *Hall. helv.*—taraxaci. *Allion. pedem. n.* 769. *t.* 31. *f.* 1.
Hedypnois autumnale Taraxaci. *Hudſ. angl.* 341. 2. ε.
Leaves lanceolate toothed ſmooth, ſcape almoſt naked, calyx hirſute.

5. Hieracium alpeſtre.
Lin. ſyſt. 716. *Jacqu. auſtr.* 2. *t.* 191. *Krock. ſileſ. n.* 1275.
Picris ſaxatilis. *Allion. pedem. n.* 766. *t.* 14. *f.* 4.
Leaves lanceolate toothed ſmooth, ſcape with a leaf and a flower or two, calyx hirſute cylindric.

6. Hieracium venoſum. *Vein-leaved Hawkweed.*
Lin. ſpec. 1125. *Reich.* 3. 637. *Gron. virg.* 114. *Cold. noveb.* 175. 2. *Baniſt. virg.* 1926.
Leaves wedge-ſhaped rough with hairs, ſcape very thick upright.

7. Hieracium Piloſella. *Mouſe-ear Hawkweed.*
Lin. ſpec. 1125. *Reich.* 3. 638. *hort. cliff.* 388. *fl. ſuec. n.* 697. *mat. med.* 179. *Hudſ. angl.* 343. *Wither. arr.* 845. *Curtis lond.* 4. *t.* 54. *Lightf. ſcot.* 436. *Hall. helv. n.* 55. *Pollich pal. n.* 740. *Neck. gallob.* 329. *Gærtn. fruct.* 2. 360. *Krock. ſileſ. n.* 1276. *Allion. pedem. n.* 772. *Villars dauph.* 98.
Piloſella minor. *Cam. epit.* 709. *Dod. pempt.* 67. *Fuchſ. hiſt.* 605. *Lob. ic.* 1. 479. 1. *Blackw. t.* 365.—vulgaris repens. *Park. theat.* 690. *f.* 1.
P. repens. *Ger.* 513. 2. *emac.* 638. 2. *Raii ſyn.* 170. *hiſt.* 242. *Petiv. brit. t.* 11. *f.* 1.
P. major repens hirſuta. *Bauh. pin.* 262. *Mor. hiſt. ſ.* 7. *t.* 8. *f.* 1, 3.
P. majori fl. ſ. vulgaris repens. *Bauh. hiſt.* 2. 1039.
Leaves quite entire ovate tomentoſe underneath, ſtem throwing out runners.

* *With a many-flowered ſcape.*

8. Hieracium dubium. *Creeping Hawkweed.*
Lin. ſpec. 1125. *ſyſt.* 716. *Reich.* 3. 638. *fl. ſuec. n.* 698. *Hudſ. angl.* 344. *Wither. arr.* 846. *Hall. helv. n.* 53. *Pollich pal. n.* 741. *Leers herborn. n.* 614. *Krock. ſileſ. n.* 1277. *Villars dauph.* 99.
Piloſella major 1. *Tabern.* 196.—repens minus hirſuta. *Bauh. pin.* 262.—media vulgaris erecta. *Park. theat.* 689. *n.* 3. *t.* 690. *f.* 2.—minor fol. anguſtiore minus piloſo, repens. *Bauh. hiſt.* *Raii hiſt.* 243.
Leaves entire ovate-oblong, runners creeping.

9. Hieracium Auricula. *Narrow-leaved Hawkweed.*
Lin. ſpec. 1126. *Reich.* 3. 638. *fl. lapp. n.* 282. *ſuec. n.* 699. *hort. cliff.* 388. *Hudſ. angl.* 344. *Wither. arr.* 846. *Hall. helv. n.* 52. *Neck. gallob.* 330. *Pollich pal. n.* 742. *Leers herborn. n.* 615. *Krock. ſileſ. n.* 1278. *Villars dauph.* 99.
Piloſella major erecta altera. *Bauh. pin.* 262.
P. repens minor, caule pedali, polyanthos, fol. anguſtis oblongis. *Raii ſuppl.* 147.
Leaves quite entire lanceolate, runners creeping.

10. Hieracium cymoſum. *Small-flowered Hawkweed.*
Lin. ſpec. 1126. *Reich.* 3. 639. *Hall. helv. n.* 51. *Pollich pal. n.* 743. *Leers herborn. n.* 616. *Krock. ſileſ. n.* 1279. *Villars dauph.* 101.
H. murorum anguſtifolium non ſinuatum. *Bauh. pin.* 129. *prodr.* 67. *ic.*—item, Piloſella montana hiſpida, parvo flore. *Bauh. pin.* 262.
Piloſ. minori fl. hirſutior & elatior non repens. *Bauh. hiſt.* 2. 1040.
P. major macrocaulos umbellifera. *Column. ecphr.* 1. 249.
Leaves lanceolate entire hairy, ſcape almoſt naked hairy at the baſe, flowers in a kind of umbel.

11. Hieracium præmorſum. *Truncate-root Hawkweed.*
Lin. ſpec. 1126. *Reich.* 3. 639. *fl. ſuec. n.* 700. *Hall. helv. n.* 51. *Pollich. pal. n.* 744. *Gmel. ſib.* 2. 32. *t.* 13. *f.* 2. *Amm. ruth.* 210. *Krock. ſileſ. n.* 1280.
H. pratenſe latifolium non ſinuatum majus & minus. *Bauh. pin.* 129.—item Piloſella major erect. *pin.* 262. *Raii hiſt.* 241.
H. latif., præmorſa radice, caule ſingulari piloſellæ majori affine. *Bauh. hiſt.* 2. 1035.
Leaves ovate ſomewhat toothed, ſcape branched, upper flowers coming out firſt.]

12. Hieracium aurantiacum. *Orange-flowered Hawkw.*
Lin. ſpec. 1126. *Reich.* 3. 640. *hort. cliff.* 388. *upſ.* 238. *Hall. helv. n.* 50. *Jacqu. auſt.* 5. *t.* 410. *Krock. ſileſ. n.* 1281. *Allion. pedem. n.* 778. *t.* 14. *f.* 1. *Villars dauph.* 102.
H. hortenſe flor. atro-purpuraſcentibus. *Bauh. pin.* 128. *prodr.* 65.—item, alpinum non laciniatum, fl. fuſco. *pin.* 128. *prodr.* 65.—hort. latifolium. ſ. Piloſella major. *Ger. emac.* 305. f. 3.
H. germanicum 1. *Col. ecphr.* 2. 28. *t.* 30.
Piloſella polyclonos, &c. *Mor. hiſt.* 3. 78. *ſ.* 7. *t.* 8. *f.* 7.
Auricula muris hiſpanica, ſ. H. pannonicum fl. ſaturate croceo. *Bauh. hiſt.* *Raii hiſt.* 243.
Leaves entire, ſtem almoſt naked quite ſimple hairy corymbiferous.

[13. Hieracium Gronovii. *Gronovius's Hawkweed.*
Lin. ſpec. 1127. *Reich.* 3. 640. *Gron. virg.* 114. & 90; *edit.* 1. *Pluk. mant. t.* 420. *f.* 2. *Krock. ſileſ. n.* 1282?
Stem panicled almoſt naked, root-leaves obovate quite entire hairy.

14. Hieracium Gmelini. *Gmelin's Hawkweed.*
Lin. ſpec. 1127. *Reich.* 3. 640. *Gmel. ſib.* 2. 23. *t.* 8. *f.* 2.
Stem panicled, root-leaves ovate ſerrate ſmooth.

15. Hieracium ſanctum. *Paleſtine Hawkweed.*
Lin. ſpec. 1127. *Reich.* 3. 641. *amœn.* 4. 328.
Crepis nemauſenſis. *Gouan illuſtr.* 60. *Allion. pedem. n.* 809. *t.* 74. *f.* 1.
H. dentis leonis fol. monoclonon ſubaſperum. *Bauh. pin.* 37.
H. intybaceum ſ. ſextum. *Tabern. ic.* 183.
Leaves lyrate blunt toothed.

16. Hieracium capenſe. *Cape Hawkweed.*
Lin. ſpec. 1127. *Reich.* 3. 641. *amoen.* 6. *afr.* 45.
Lower peduncles higher, leaves oblong toothed ſcabrous.

*** *With a leafy ſtem.*

17. Hieracium pontanum.
Lin. ſyſt. 717. *Hall. helv. n.* 38.
H. montanum. *Jacqu. auſtr.* 2. *t.* 190. *Allion. pedem. n.* 770. *Krock. ſileſ. n.* 1286? *Raii ſuppl.* 142. *n.* 59. *Bocc. muſ. t.* 113.
Hypochæris pontana. *Lin. ſpec.* 1140. *Reich.* 3. 661. *Vaill. act.* 1721. *p.* 215.
Andryala pontana. *Villars dauph.* 67. *t.* 23.
Stem with one or two flowers, leaves lanceolate toothed.

18. Hieracium paniculatum. *Panicled Hawkweed.*
Lin. ſpec. 1127. *Reich.* 3. 641. *Krock. ſileſ. n.* 1283?
Stem upright, leaves alternate lanceolate naked toothed, panicle capillary.

19. Hieracium porrifolium. *Leek-leaved Hawkweed.*
Lin. ſpec. 1128. *Reich.* 3. 642. *mant.* 458. *Hall. helv. n.* 48. *Scop. carn. n.* 969. *Jacqu. vind.* 275. *t.* 6. *auſtr.* 3. *t.* 286. *Ger. prov.* 167. 5. *Seguier veron.* 2. 270. *n.* 6. *Villars dauph.* 115. *Krock. ſileſ. n.* 1285.
H. tragopogonis folio. *Bauh. pin.* 129.—& murorum anguſtifolium non ſinuatum. *Bauh. pin.* 129. *prodr.* 67. *n.* 22.
H. phalangii foliis. *Vaill. act.* 1701. *p.* 184.
H. montanum aſphodeli fol. acuminatis. *Bocc. muſ.* 147. *t.* 106. *Raii ſuppl.* 142. *n.* 58.—ſee *hiſt.* 242. 15.
Stem branched, leaves lanceolate-linear almoſt entire.

20. Hieracium chondrilloides. *Gum-Succory Hawkweed.*
Lin. ſpec. 1128. *Reich.* 3. 641. *Jacqu. vind.* 273. *t.* 7. *auſtr.* 5. *t.* 429. *Villars dauph.* 114. *Krock. ſileſ. n.* 1284.
H. alpinum pumilum, chondrillæ folio. *Bauh. pin.* 129. *prodr.* 64. *Raii hiſt.* 236. *Park. theat.* 796. *n.* 3.
Stem branched, ſtem-leaves elongate-toothed ſmooth root-leaves lanceolate entire.

21. Hieracium murorum. *Wall Hawkweed.*

Lin. ſpec. 1128. *Reich.* 3. 642. *hort. cliff.* 388. *fl. ſuec.* 701. *lapp. n.* 284. *Hudſ. angl.* 344. *Wither. arr.* 847. *Lightf. ſcot.* 437. *Hall. helv. n.* 46. *Scop. carn. n.* 970. *Pollich pal. n.* 745. *Neck. gallob.* 330. *Leers herborn. n.* 617. *Krock. ſileſ. n.* 1288. *Villars dauph.* 124. *Allion. pedem. n.* 785. *t.* 28. *f.* 1.

α. H. piloſiſſimum.

H. fol piloſiſſimo. *Bauh. pin.* 129. *Raii hiſt.* 239. *ſyn.* 168. *Ger. emac.* 304. *f.* 1. *Petiv. brit. t.* 13. *f.* 2. *Mor. hiſt. ſ.* 7. *t.* 5. *f.* 54.

β. H. ſylvaticum. *Gouan illuſtr.* 56. *Villars dauph.* 125. *Retz. obſ.* 1. 27. *n.* 90. *Hall. helv. n.* 46. β, δ. *Hudſ.* β, ε.

H. murorum laciniatum minus piloſum. *Bauh. pin.* 129. *Lob. ic.* 1. 587. 1. (Pulmonaria). *Bauh. hiſt.* 2. 1034. 3. (Piloſella). *Ger. emac.* 304. 2. *Park. theat.* 801. *f.* 2. *Petiv. brit. t.* 13. *f.* 4, 5. (Pulmonaria).

γ. H. macrocaulon hiſutum, fol. longiore. *Raii ſyn.* 169. *Hudſ.* δ. *With.* γ.

δ. Pulmonaria gallica rotundifolia. *Barrel. ic.* 342. *Hall. helv. n.* 46. ε. *Hudſ.* γ. *With.* δ.

Stem branched, root-leaves ovate toothed, ſtem-leaf ſmaller.

22. Hieracium humile.

Lin. ſyſt. 717.

Stem few-flowered, ſcarcely higher than the lower leaves, which are hirſute and gaſhed.

23. Hieracium paludoſum. *Marſh Hawkweed.*

Lin. ſpec. 1129. *Reich.* 3. 643. *fl. lapp. n.* 285. *ſuec. n.* 702. *Hudſ. angl.* 345. *Wither. arr.* 849. *Lightf. ſcot.* 438. *Hall. helv. n.* 45. *Scop. carn. n.* 973. *Pollich pal. n.* 746. *Neck. gallob.* 330. *Leers herborn. n.* 618. *Krock. ſileſ. n.* 1290. *Allion. pedem. n.* 788. *t.* 28. *f.* 2. & *t.* 31. *f.* 2. *Villars dauph.* 129.

H. montanum latifolium glabrum minus. *Bauh. pin.* 129. *Mor. hiſt. ſ.* 7. *t.* 5. *f.* 47.

H. mont. cichorei folio. *Raii ſyn.* 166. *hiſt.* 235. *Petiv. brit. t.* 13. *f.* 9.

H. latif. glab. ex valle Grieſsbachiana. *Bauh. hiſt.* 2. 1026. *f.* 3.—& 1033. *f.* 1.—*Ger.* 236. *emac.* 300. *Mor. hiſt. ſ.* 7. *t.* 5. *f.* 47.

β. H. mont. latif. glab, majus. *Bauh. pin.* 129. *Bauh. hiſt.* 2. 1032. *Raii hiſt.* 233. 13.

Stem panicled, leaves claſping toothed ſmooth, calyxes hiſpid.

24. Hieracium lyratum. *Siberian Hawkweed.*

Lin. ſpec. 1129. *Reich.* 3. 644. *Gmel. ſib.* 2. 24. *t.* 9. *Krock. ſileſ. n.* 1291.

Stem many-flowered, leaves lyrate ſmooth, calyx and peduncles hiſpid.]

25. Hieracium cerinthoides. *Honeywort Hawkweed.*

Lin. ſpec. 1129. *Reich.* 3. 644. *hort. upſ.* 238. *Gouan illuſtr.* 58. *t.* 22. *f.* 4. *Scop. carn. n.* 971. *Villars dauph.* 110. *t.* 32. *Allion. pedem. n.* 789.

Root-leaves obovate toothletted, ſtem-leaves oblong half-claſping.

26. Hieracium amplexicaule. *Heart-leaved Hawkweed.*

Lin. ſpec. 1129. *ſyſt.* 717. *Reich.* 3. 644. *mant.* 458. *hort. cliff.* 387. *Gouan illuſtr.* 58. 6. *Hall. helv. n.* 36. *Krock. ſileſ. n.* 1293. *Villars dauph.* 131. *Allion. pedem. n.* 792. *t.* 15. *f.* 1. & *t.* 30. *f.* 2.

Leaves ſtem-claſping heart-ſhaped ſomewhat toothed, peduncles one-flowered hirſute, ſtem branched.

27. Hieracium pyrenaicum. *Pyrenean Hawkweed.*

Lin. ſyſt. 718. *Reich.* 3. 645.

α. H. blattarioides. *Lin. ſpec.* 1129. *hort. cliff.* 387. *amæn.* 1. 151. *Mill. dict. n.* 3.

Crepis blattarioides. *Villars dauph.* 136.

[β. H. piloſum. *Lin. ſyſt.* 718. γ.

Picris pyrenaica. *Lin. ſpec.* 1115. *Gouan illuſtr.* 53.

H. pyren. blattariæ fol. minus piloſum. *Herm. par. t.* 184.

γ. H. auſtriacum. *Lin. ſyſt.* 718. δ.

Crepis auſtriaca: *Jacqu. vind.* 270. *auſtr.* 5. 20. *t.* 441. *Allion. pedem. n.* 808. *t.* 30. *f.* 1.

δ. H. helveticum. *Lin. ſyſt.* 718. ε. *Hall. helv. n.* 40.

H. conyzæfolium. *Gouan illuſt.* 59. *Villars dauph.* 137. B. *Mor. hiſt. t.* 5. *f.* 50. *Park. theat.* 788.

H. alpinum aſperum conyzæ facie. *Bauh. pin.* 128.

Leaves ſtem-claſping obovate-lanceolate toothed backwards, ſtem ſimple, calyxes looſe.

28. Hieracium molle. *Soft-leaved Hawkweed.*

Lin. ſyſt. 718. *Jacqu. auſtr.* 2. 12. *t.* 119. *Allion. pedem. n.* 787.

Leaves lanceolate almoſt entire ſoft, the lower ones petioled, flowers on peduncles forming a kind of corymb.

29. Hieracium ſtipitatum.

Lin. ſyſt. 718. *Jacqu. auſtr.* 3. *t.* 293.

Stem branched, with only a leaf or two; leaves toothed; down ſtiped.

30. Hieracium villoſum. *Villoſe Hawkweed.*

Lin. ſyſt. 718. *Reich.* 3. 646. *Jacqu. vind.* 271. *auſtr.* 1. 55. *t.* 87. *Hall. helv. n.* 44. *Krock. ſileſ. n.* 1295. *Villars dauph.* 105. *Pluk. alm. t.* 194. *f.* 2.

H. alpinum latifolium villoſum magno flore. *Bauh. pin.* 128.

H. villoſum alp. V. *Cluſ. hiſt.* 141. *Raii hiſt.* 239. *Ger. emac.* 301. 2.

β. H. valde piloſum. *Villars dauph.* 106.

Piloſella ſ. Pulmonaria lutea anguſtiori folio, valde piloſa, duplex. *Bauh. hiſt.* 2. 1034. *Raii hiſt.* 240.

γ. H. caule unifloro, fol. lævibus, radicalibus lingulatis obiter dentatis, caulinis ovato-lanceolatis amplexicaulibus. *Hall. helv. n.* 44. δ.

δ. Variatio glabris foliis. *Seguieu. ſuppl.* 269.

Stem branched, leaves hirſute, root-leaves lanceolate-ovate toothed, ſtem-leaves claſping heart-ſhaped.

31. Hieracium glutinoſum. *Clammy Hawkweed.*

Lin. ſpec. 1130. *Reich.* 3. 646.

Leaves lanceolate runcinate ſomewhat ſcabrous, flowers in umbels.

32. Hieracium Kalmii. *Kalm's Hawkweed.*

Lin. ſpec. 1130. *Reich.* 3. 647.

Stem upright many-flowered, leaves lanceolate toothed, peduncles tomentoſe.

33. Hieracium undulatum. *Wave-leaved Hawkweed.*

Ait. hort. kew. 3. 124.

Stem branched, leaves elliptic toothed waved hairy, hairs plumoſe.

34. Hieracium ſprengerianum. *Branched Hawkweed.*

Lin. ſpec. 1130. *ſyſt.* 718. *Reich.* 3. 647. *Krock. ſileſ. n.* 1294?

H. pulchrum ramoſum ſprengerianum. *Bauh. hiſt.* 2. 1026. *Mor. hiſt. ſ.* 7. *t.* 5. *f.* 17. *Raii hiſt.* 234.

Stem branched, leaves half-ſtem-claſping oblong repand hiſpid.

35. Hieracium ſpicatum. *Hairy Hawkweed.*

Ait. hort. kew. 3. 125. *Hall. helv. n.* 43. *Allion. pedem. n.* 795. *t.* 27. *f.* 1, 3.

H. prenanthoides. *Villars dauph.* 108.

Stem many-flowered, leaves ſtem-claſping hairy thinly toothed.]

36. Hieracium ſabaudum. *Shrubby Hawkweed.*

Lin. ſpec. 1131. *Reich.* 3. 647. *hort. upſ.* 238. *fl. ſuec. n.* 703. *Hudſ. angl.* 345. *Wither. arr.* 849. *Lightf. ſcot.* 439. *Engl. bot. t.* 349. *Hall. helv. n.* 35. *Scop. carn. n.* 972. *Pollich pal. n.* 747. *Neck. gallob.* 331. *Gmel. ſib.* 2. *n.* 30. *t.* 14. 2. *Fl. dan. t.* 872. *Krock. ſileſ. n.* 1296. *Villars dauph.* 127. *Allion. pedem. n.* 796. *t.* 27. *f.* 2.

H. fruticoſum latifolium hirſutum. *Bauh. pin.* 129. *Park. theat.* 802. *Mor. hiſt. ſ.* 7. *t.* 5. *f.* 59. *Raii hiſt.* 238. *ſyn.* 167. *Petiv. brit. t.* 13. *f.* 7.

H. ſabaudi varietas altera. *Bauh. hiſt.* 2. 1030.

β. H. fruticoſum latifolium glabrum. *Bauh. pin.* 129. *prodr.* 67. *Park. theat.* 801. *Raii hiſt.* 238. *ſyn.* 168. *Petiv. brit. t.* 13. *f.* 9.

H. majus latif. pannonicum 2 Cluſii. *Bauh. hiſt.* 2. 1027.

γ. *Raii ſyn.* 170. 14. *Pluk. phyt. t.* 37. *f.* 3. *Petiv. brit. t.* 11. *f.* 6.

δ. *Petiv. brit. t.* 13. *f.* 8.

Stem upright many-flowered, leaves ovate-lanceolate toothed half-ſtem-claſping.

37. Hieracium umbellatum. *Umbelled* or *Buſhy H.*

Lin. ſpec. 1131. *Reich.* 3. 647. *mant.* 459. *fl. lapp. n.* 287. *ſuec. n.* 704. *hort. cliff.* 387. *Hudſ. angl.* 346. *Wither. arr.* 850. *Curtis lond. n.* 67. *Lightf. ſcot.* 439. *Hall. helv. n.* 34. *Pollich pal. n.* 748. *Neck. gallob.* 330. *Leers herborn. n.* 620. *Fl. dan. t.* 680. *Krock. ſileſ. n.* 1297. *Villars dauph.* 128.

H. fruticoſum anguſtifolium majus. *Bauh. pin.* 129. *Park. theat.* 801. 4. *Raii hiſt.* 238. *ſyn.* 168.

H. majus anguſtif. *Cluſ. hiſt.* 2. 40.

H. ſabaudum. *Dalech. hiſt.* 570. *Dod. pempt.* 638. 2. *Lob. ic.* 1. 240. 1. *Bauh. hiſt.* 2. 1030. 1.

H. intibaceum. *Ger.* 234. 6. *emac.* 298. 5.

Pulmonaria. *Petiv. brit. t.* 13. *f.* 10.

β. H. frut. anguſtif. minus. *Dill. eph. nat. cur.* 5. 6. *app. t.* 13. *f.* 1. *Vaill. par. t.* 48.—Pulmonaria anguſtifolia glabra. *Raii ſyn.* 168. *Pet. brit.* 13. *f.* 11.

γ. H. frut. anguſtiſſimo incano folio. *Vaill. Villars* B.

Pulmonaria graminea. *Pet.* 13. *f.* 12. *Raii ſyn.* 168.

Leaves linear, ſomewhat toothed, ſcattered, flowers in a kind of umbel.

Other Species from Villars and Allioni.

38. Hieracium Halleri.

Villars dauph. 104. *t.* 34.

Leaves lanceolate, toothed, obſcurely villoſe, ſtem ſomewhat branched, ſtiff.

39. Hieracium valde piloſum.

Villars dauph. 106. *t.* 30. v. H. villoſum, n. 30. β.

Stem ſtraight, almoſt ſimple, leaves ſtem-claſping woolly, calyxes imbricate.

40. Hieracium cydoniæfolium.

Villars dauph. 107. *Hall. helv. n.* 45.

Stem ſtraight, branching from the axils, leaves oblong-elliptic, half-ſtem-claſping, toothed, calyxes hiſpid, blackiſh.

41. Hieracium ſcorzoneræfolium.

Villars dauph. 111. *Hall. helv. n.* 44.

H. glaucum. *Allion. pedem. n.* 781. *t.* 28. *f.* 3. & *t.* 81. 1.

β. H. ſaxatile. *Jacqu. obſ.* 2. 30. *t.* 50.

Leaves linear-lanceolate, glaucous and hairy, ſtem oblique, hairy and hoary, few-flowered.

42. Hieracium glaucum.

Villars dauph. 116.

Leaves lanceolate, glaucous, ſtem branched, ſtiff.

43. Hieracium ſtaticifolium.

Villars dauph. 116. *t.* 27. *Allion. pedem. n.* 782. *t.* 81. *f.* 2. *Hall. helv. n.* 48.

H. montanum anguſtifolium nonnihil incanum. *Bauh. pin.* 129.—fol. oblongo non diſſecto. *Bauh. phytop.* 213. *n.* 20.—tragopogi fol. *Bauh. pin.* 129. *Tourn. herb.*

H. macroſtenophyllon. *Rich. icon.*

Chondrilla fol. non diſſecto, caule nudo & foliato. *Bauh. hiſt.* 2. 1041.

Stem almoſt naked, leaves ligulate, obtuſe, flower ſulphur-coloured.

44. Hieracium ſaxatile.

Villars dauph. 118. *t.* 29. *Pluk. app. alt. t.* 194. *f.* 3.

Piloſella incana ſaxatilis lutea. *Bauh. pin.* 263. *Raii hiſt.* 241. *n.* 18.

Auricula muris altera incana ſaxatilis. *ColumCN. ecphr.* 250.

Leaves roundiſh, quite entire, ſtem almoſt naked, receptacles hirſute.

45. Hieracium Lawſonii.

Villars dauph. 118. *t.* 29. *Dill. elth.* 180. *t.* 149. *f.* 179.

H. leptocaulon hirſutum fol. longiore. *Raii ſyn.* 169.

Leaves oblong, villoſe, quite entire, ſtem ſtraight, many-flowered.

46. Hieracium andryaloides.

Villars dauph. 121. *t.* 29.

H. profunde ſinuatum pubeſcens. *Bauh. pin.* 129. *prodr.* 67.

Leaves denſely tomentoſe, curled or ſinuate at the baſe, ſtem ſpreading.

47. Hieracium Liottardi.

Villars dauph. 121. *t.* 29.

Leaves lanceolate, toothed, ſtem upright, two-flowered.

48. Hieracium Jacquini.

Villars dauph. 123. *t.* 28.

H. pumilum. *Jacqu. auſtr. t.* 189. See n. 2.

Leaves pinnatifid at the baſe, hirſute, green, calycine hairs glandular, ſtem with about two flowers.

49. Hieracium lanceolatum.

Villars dauph. 126. *t.* 30.

Stem ſtraight, ſtiff, leaves lanceolate, toothed, flowers in a kind of corymb.

50. Hieracium pulmonarioides.

Villars dauph. 133. *t.* 34. See Allioni n. 792.

Leaves lanceolate, tooth-ſinuate, thoſe on the ſtem ſeſſile; peduncles proliferous.

51. Hieracium albidum.

Villars dauph. 133. *t.* 31. *Hall. helv. n.* 41.

H. intybaceum. *Allion. pedem. n.* 793.

Leaves gnawn, ligulate, hiſpid, ſtem ſubdichotomous, few-flowered.

52. Hieracium pappoleucon.

Villars dauph. 134. *t.* 31. *Hall. helv. n.* 40 ?

H. grandiflorum. *Allion. pedem. n.* 794. *t.* 29. *f.* 2, 3.

Leaves lyrate-ſpatulate, toothed, ſtem-leaves with two ears embracing the ſtem on both ſides, ſtem ſtriated, viſcid, few-flowered.

53. Hieracium florentinum.

Allion. pedem. n. 775. *Hall. helv. n.* 54.

Stem brachiate, few-flowered; leaves lanceolate, long-haired; calyxes ſmooth.

54. Hieracium capillaceum.

Allion. pedem. n. 779. *t.* 31. *f.* 3. *Bauh. prodr.* 21. *p.* 62.

Stem almoſt naked, one-flowered, leaves nerved, graſſy, quite entire.

55. Hieracium ſucciſæfolium.

Allion. pedem. n. 786. *Hall. helv. n.* 47.

Leaves ſmooth, quite entire, root-leaves elliptic, on long petioles, ſtem-leaves claſping, with blunt hooks.

DESCRIPTIONS, &c.

1. *Root* thick, perennial, blackiſh on the outſide, white within. *Stems* round, upright, twice or thrice the length of the leaves, with only one or two ſubſetaceous leaflets on them, and a ſingle flower at the end. *Leaves* all next the root, narrow lanceolate, ſomewhat attenuated at the baſe into the petiole, from two to ſix inches in length, erect, thickiſh, hoary on both ſides, with a cloſe nap of white hairs ſtellate at the tip; the ſtem alſo has the ſame ſort of ſtellate hairs, only ſeſſile. *Calyx* hiſpid, with like hairs, aſcending; the ſcales of the calyx are acuminate. Corolla yellow. The *receptacle* is cloathed with very ſhort, villoſe hairs. *Down* ſeſſile and plumoſe. [a] Native of Auſtria, Carniola, the Palatinate, &c. on mountains; flowering in may, and ripening its ſeeds in june.

2. *Root* perennial, creeping, branched. Stems half a foot in height, generally procumbent and reddiſh. Leaves ovate or ovate-lanceolate, toothed, on a petiole an inch and half in length, which is ſet here and there with ſmall leaves, ſo that the whole approaches to a lyrate leaf. Scapes ſimple, ſuſtaining one flower, or at moſt two, and about the ſame length with the leaves. Calyx cylindric, upright; ſcales in three rows, ovate-lanceolate, about thirteen in number, tomentoſe on the outſide. Corolla pale yellow, broadiſh, with five teeth at the end. Seeds ruſſet, down longer than the ſeeds, ſimple, ſeſſile; the hairs white, and a little toothed. On the Alps, and near the glaciers; in Switzerland, Savoy, Dauphiné, among pebbles and fragments of rocks[b]. This has been mentioned before, under the name of Crepis pygmæa.

3. This ſpecies is principally diſtinguiſhed by the whole of the plant, but eſpecially the calyx, being covered with long white hairs; and the ſcales of the calyx being remarkably looſe.

The root is perennial and fibrous. The root-leaves are many, varying in form from bluntly ovate to ovate-lanceolate; they are moſt frequently entire about the

[a] Jacquin.

[b] Haller. Lin. mant. Allion. Villars.

edge, but ſometimes they are ſlightly toothed: they are always ſprinkled on both ſides with white woolly hairs. The ſtalk is generally about five inches high, with hairs ſcattered over it, which are white except at the baſe, where they are fuſcous: it is uſually quite naked, or has only a ſmall lanceolate bracte or two at top. It is terminated by one large flower, ſometimes two, ſeldom more. Calyx ſwelling, before it opens globoſe, black, with white hairs ſtanding out. Corolla pale yellow[c]. Seeds oblong, five-cornered, rufous or brown, crowned with a ſimple, ſeſſile, brittle down[d].

Native of Lapland, Switzerland, Dauphiné, Savoy, Carniola, Sileſia, and the mountains both of Wales and Scotland. Flowering in july and auguſt.

4. According to Lightfoot, the leaves are ſometimes pinnatifid or jagged half way down to the rib, which is reddiſh; the petioles alſo red. The ſtalk ſix inches high, ſmooth towards the baſe, but hairy near the top, bearing a ſingle yellow flower. Calyx black, covered with fuſcous hairs. Seeds crowned with a ſeſſile, *plumoſe* down, which character does not belong to this genus, and therefore Haller has placed it under his genus of *Picris*; Gærtner under *Virea*; Hudſon under that of *Hedypnois*; and it has already been deſcribed under *Apargia Taraxaci*.

Native of the mountains of Switzerland, Scotland and Wales: flowering in july. Perennial.

5. Root-leaves on ſhort petioles, having large teeth about the edge, almoſt linear, broader at the end. Scape entirely ſimple, a ſpan high, naked. Calyx in proportion to the plant, large, ſmooth, formed of unequal ſcales. Corolla ſhort, not large, yellow[e]. Native of Auſtria and Sileſia. Perennial.

6. Shrubby. Stem branched, leafleſs. Leaves radical, marked with blood-red dots and veins. Flowers ſmall, yellow. Native of Virginia and Maryland.

7. *Root* perennial, creeping. Cloſe to the ground come forth barren ſtalks or runners, procumbent, round, leafy, thickly covered with down and hairs: beſides theſe, one ſolitary ſtalk generally ariſes from each plant or off-ſet, from four to ſeven inches or more in height, upright, round, ſimple, naked, hollow, hairy below, and hirſute above, having ſome little ſcales upon it, and ſupporting one flower at the top. *Leaves* on ſhort petioles, ovate or oblong, on the runners lanceolate; perfectly entire, white beneath, with a thick cloſe down, beſides which they have numerous long hairs, each ariſing from a gland; the upper ſurface green, without down, but having many ſcattered hairs, which ariſe alſo from glands. *Flowers* near an inch in diameter. Calyx thick ſet with black hairs, which are globular at the end. Corolla pale yellow or ſulphur colour, compoſed of about fifty florets, the outer having a broad purple ſtripe on the under ſide: each floret has five teeth at the end. *Seeds* oblong, blackiſh, ſtriated; crowned with a ſeſſile, ſimple down, twice the length of the ſeed[f].

It is obſerved by Pollich, that the leaves have frequently teeth round the edge, but ſo ſmall as ſcarcely to be viſible.

Mr. Woodward remarks, that he has never obſerved the Mouſe-ear with more than one flower on a peduncle: Haller ſays that it has rarely two flowers; but Pollich affirms that it is ſometimes found with two or three. According to Linneus, the flowers commonly open at eight in the morning, and cloſe about two in the afternoon. An inſect of the *Coccus* or *Cochineal* kind is found at its roots[g]; but it has not been obſerved in England[h]. It differs from other milky plants of this claſs, in being leſs bitter, and more aſtringent[i]. On account of this aſtringency it was admitted into the ſhops as a medicine, under the name of *Auricula muris*; but is now little regarded[k].

It is very common in dry paſtures, on ſunny banks, and on walls: flowering from may to ſeptember.

8. In aſcertaining this doubtful plant, it will perhaps be moſt ſatisfactory to give the opinions and deſcriptions of reſpectable writers ſeparately. Linneus only ſays, that the ſtem is rough with hair; that the leaves are the ſame, eſpecially underneath[l]; that it is larger in all its parts than *H. Auricula*, and does not creep[m].—According to Mr. Hudſon, it has many things in common with *H. Piloſella*, but is larger, and has the leaves hairy, not tomentoſe underneath. The ſcape bears from three to ſix flowers; is from ſix to nine inches high, and ſmooth.—Leers deſcribes it thus. Runners creeping, ſeveral, leafy. Leaves naked underneath, ſomewhat hairy on the upper ſurface, ciliate at the baſe. Scape a ſpan high, ſmooth and even, naked, with a ſingle lanceolate leaflet at the baſe. Umbellar peduncles three or four, ſimple, involucred with as many ſhort bractes. Flowers like thoſe of *H. Piloſella*, nearly equal in height. Corollas pale yellow on both ſides.—Krocker diſtinguiſhes this from *H. Auricula* by the following circumſtances. The number of flowers is fewer, being only two or three; the ſtature leſs; leaves entire, or having very few teeth, more ovate-oblong, (whereas thoſe of *H. Auricula* are lanceolate, longer, and quite entire), having a very few long hairs, in other reſpects ſmooth; they are on very ſhort petioles. Scape upright, a ſpan long, ſomewhat hirſute, frequently tinged with duſky purple, as are alſo the runners: theſe are decumbent and creep, the leaves on them are alternate, and glaucous green; but the ſcape is naked, or has at moſt a ſingle leaf or two. Calyx ſwelling at the baſe, ſet with black hairs. Corollas more lemon-coloured. Down white.—Haller gives from five to eight flowers to the ſcape; and Villars ſays there are three or five to ſeven, or even ten.

Mr. Woodward thus deſcribes a plant, which he received and cultivated for the *dubium*, and which he thinks is probably that ſpecies a little varied, though it does not perfectly accord with the ſpecimens either of *dubium* or *Auricula*, as preſerved in the Linnean herbarium.—It differs from *H. Piloſella*, in having leaves oblong wedge-ſhaped, very little concave, hairy on both ſides, but more ſparingly above, grayiſh, but not tomentoſe beneath. The firſt flowering-ſtems ariſe from the ſtolones erect, moſtly two-flowered, rarely one, with equal divaricated fruit-ſtalks. The calyx and fruit-ſtalk cloathed with hairs terminated each by a black globule; the lower part of the ſtem nearly ſmooth. The florets pale yellow on both ſurfaces. Such was its appearance at midſummer; in the autumn, the ſtolones threw out branches which did not root, each again bearing alternate branches, and terminated by a declining ſtem, bearing five or ſix flowers each on a fruit-ſtalk, alternate, ſimilar in every reſpect to the former; at the baſe of each, a lanceolate bracte, and ſimilar ones on the fruit-ſtalks. Seeds oval, ſtriated: feather ſeſſile, with few rays, ſimple, as long as the calyx.

Native of Sweden, Switzerland, Germany, Dauphiné, England, in moiſt places on mountains, as near Rydall in Weſtmoreland. It flowers in july and auguſt.

Sheep are reported to eat this, and yet the foregoing ſpecies is ſaid to injure them. But is it probable that two plants hardly to be diſtinguiſhed, ſhould thus differ in their properties?

9. Root præmorſe, with numerous, ſimple fibres. Runners creeping, leafy. Scape upright, naked, ſcarcely half a foot high, having a few ſcattered hairs on it. Leaves lanceolate, moſtly quite entire, ſharp, naked. Flowers in a panicle, from three to ſix. Leaflets of the calyx linear, hairy[n].—Leaves lanceolate, acute, hiſpid, with very ſmall hairs. The ſtem and calyx have black briſtles ſcattered over them. Being tranſlated into the botanic garden at Upſala in 1742, the year following it grew to the height of three feet, and bore flowers in a ſort of umbel, on long peduncles[o].

Leers deſcribes it thus.—Runners few, creeping, leafy. Leaves broad-lanceolate, ſlightly toothed, dark green, ſcabrous on both ſides. Scape a foot high, the whole muricated with black briſtles; theſe are more crowded at the baſe, above which is a ſingle leaf.

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[c] Lin. lapp. & ſuec. Haller, Lightf.
[d] Scopoli.
[e] Krocker.
[f] Curtis lond. Pollich. Woodward Mſ.
[g] Lin. ſuec.
[h] Curtis.
[i] Withering.
[k] Curtis.
[l] Syſt. veg.
[m] Fl. ſuec.
[n] Hudſon.
[o] Lin. ſuec.

Flowers terminating, in cymes, crowded. Peduncles five or ſix, branched, thickiſh, ſhort, having unequal briſtles, black at the baſe, ſcattered over them. Corolla deeper yellow on both ſides. Receptacle ſomewhat hairy. It frequently varies with a ſingle flowering-branch coming out from the middle of the ſcape.

Krocker diſtinguiſhes this from the foregoing ſpecies, by its having a higher ſtalk, and more flowers; longer, narrower leaves, more hirſute, with ſhorter hairs; the flowers ſulphur-coloured; the calyx, like the ſtalk, having black briſtles ſcattered over it.

According to Villars this differs eſſentially from *H. dubium*; for the leaves are glaucous, lanceolate, more hairy; and it has no runners: the ſtalk is about half a foot high, divides into two or three ſpreading branches, each bearing one flower, except the middle one, which has two or three: theſe are larger, and their calyx much more rude than that of the preceding ſort. He can ſcarcely believe that his plant is the ſame with that of Linneus and other authors; but that his is a diſtinct ſpecies, and theirs only a variety.

Haller thinks that this (n. 52.) is ſcarcely a diſtinct ſpecies from *H. dubium* (n. 53.) though it be a higher plant, and bears more flowers. Pollich is of the ſame opinion; ſeeing that this differs only in ſize, having a loftier ſtem, with a greater number of flowers; and the leaves more hirſute, larger, ſharper, and approaching nearer to a lanceolate form.

Native of Lapland, Sweden, Switzerland, Germany, Dauphiné, England, on mountains: as on Dalehead, not far from Graſs-mere, Weſtmoreland. It flowers in july, and is perennial.

10. *Root* præmorſe. *Leaves* longiſh, acute, quite entire, erect, hiſpid on both ſides, with ſtiff hairs. *Scape* a foot high, having fewer hairs ſcattered over it, but they are more crowded towards the bottom; it has a ſingle leaflet above the baſe. *Flowers* almoſt umbelled, but with the pedicels branched; in which circumſtances it differs from *H. præmorſum*: it is diſtinct from *H. Auricula*, in not having the leaves ſmooth on the upper ſurface [p].

Haller has two ſpecies numbered fifty-one; this is the ſecond of them. He deſcribes the leaves as having ſhort hairs, and as being blunt at the end; in number two or three on the ſtalk; which is two feet high, not branched, except the peduncles be conſidered as branches, hirſute all over. Peduncles crowded on the top of the ſtem, branched, hirſute. Flower very ſmall, yellow, with the calyx hirſute, in which it differs from the foregoing n. 51. or *H. præmorſum*.

Leers, who doubts whether his plant be the ſame with Linneus's and Haller's, thus deſcribes it.—*Root* præmorſe. *Runners* none. *Leaves* all next the root, erect, long-lanceolate, ſharpiſh, ſmooth; the upper ſurface and keel ſomewhat hairy; hairs whitiſh, flexuoſe, purple at the baſe. *Scape* a foot and half high, ſtriated, almoſt ſmooth, with a naked, lanceolate leaflet below the middle. *Peduncles* terminating, longer than in the foregoing ſpecies, ſlenderer and more branched, cymoſe during the time of flowering, but afterwards unequal, and forming a ſort of panicle. Flowers the ſame ſize as in *Crepis tectorum*. Calyx whitiſh, with ſhort black briſtles ſcattered over it. Corollas pale yellow on both ſides.

According to Monſ. Villars, this ſpecies is eaſily diſtinguiſhed. The ſtem is ſtraight, about a foot high, terminated by a cyme of flowers ſo cloſe that the peduncles are ſeen with difficulty, though they are branched. Leaves oblong, hairy, reddiſh, rough and entire: the ſtem has one or two at the baſe; it is hairy, and marked with reddiſh glands, from which the hairs take their riſe; the calyx is alſo hairy.—Monſ. Villars doubts whether his plant and Linneus's be the ſame with that of Leers, which he refers to his *H. piloſelloides*. He alſo remarks that Haller has given ſome ſynonyms (as that of Caſp. Bauhin and Columna, whoſe figure repreſents this very well) of the ſpecies under conſideration, to his n. 52., which is *H. Auricula*.—He mentions two varieties; one with red flowers, and another with from three or four to ſix ſcattered flowers, as large again as the common ſort.

Native of Ruſſia, Denmark, Germany, Switzerland, Dauphiné. Flowering in june. Perennial.—Cultivated by Mr. Miller in 1739 [q].

11. *Root* perennial, fibrous, frequently truncate or præmorſe. All the *leaves* next the root, the firſt obovate, the reſt rather lanceolate, ſharper, ſcabrous, pale green; ſometimes, but very ſeldom having one or two teeth. *Scape* erect, naked, a foot high, ſcabrous, ſtriated. *Flowers* in a panicle containing frequently from ſixteen to twenty. Peduncles naked, having a linear leaflet at their origin, ſpreading, after flowering-time longer than the calyx: the lower ones uſually three-flowered. Calyxes with linear leaflets, not hiſpid. Down a little longer than the calyx [r].

Krocker diſtinguiſhes this from the foregoing ſpecies, by the leaves not being quite entire, but ſomewhat toothed, and alſo broader than in that, being five or ſix inches in length, and an inch, or an inch and half in breadth. The flowers are ſmall, each ſupported on a ſimple pedicel, which has a lanceolate ſtipule at the baſe; forming all together a ſort of ſpike. Stem higher, villoſe, hollow, naked, ſtriated. Root præmorſe, as in that.

Pollich deſcribes the leaves as ovate, acuminate, very ſlightly ſinuate-toothletted, running down into the petiole, three or four inches long, ſomewhat pubeſcent on both ſides.

The herb watches from ſeven o'clock in the morning to ſix in the evening, when the panicle of flowers alſo nods [s].

Native of Sweden, Germany, Switzerland, Siberia. It flowers in may and june.

12. *Root* perennial, creeping. *Stem* ſcarcely branched (except with the peduncles), bearded with white hairs placed on black glands (according to Haller the hairs are black), upright, a foot or a foot and half in height (two feet high, *Haller*). *Leaves* next the root rather ovate, on the ſtem ovate-lanceolate or lanceolate, quite entire, duſky green, narrowing into the petiole, obtuſe, alternate, the upper ones ſeſſile; the lower ones a ſpan long, and an inch broad. *Stipules* very ſmall, lanceolate. *Flowers* eight or ten, on ſhort pedicels, forming a ſhort panicle. Calyx black, hiſpid; with narrow equal ſcales. Corolla dark red. *Seeds* columnar, furrowed, black; with a white ſimple down [t].

Native of Auſtria, Switzerland, Sileſia, Dauphiné, Piedmont. It flowers from june to autumn. It varies much in the colour of the flower, from red to orange, and ſeveral ſhades of yellow. It is called by our old writers *Golden Mouſe-ear*; and, when of a dark colour, *Grim the Collier*.—Cultivated by Mr. Miller in 1739 [u].

13. This approaches very near to the Hieracium figured by Dillenius; (*elth. t.* 149. *f.* 179.) but it differs, in having the leaves more blunt, thoſe next the root almoſt ſeſſile, ſcarcely toothed; the ſtem more erect and ſlender, hairy only at bottom, and the leaves only half the ſize. The few leaves that there are on the ſtem are ovate and embracing [x]. Native of Virginia.

14. Root-leaves on long petioles, an inch in length, reckoning the petioles, three inches and more, half an inch in breadth, ending in a ſhort point. Stems a long ſpan in height, round, firm, upright, undivided for two thirds of the length, then dividing into ſubhirſute branches of various lengths, forming a ſort of umbel. At the origin of each branch there are ſhort and very narrow ſtipules, and the peduncles have a ſcale or two of the ſame ſort. Each branch is either ſimple, or divided into two or three peduncles, from an inch to two inches in length, hirſute, and all terminated by a yellow middle-ſized flower. Calyx ſimple, ſcales eight or ten, hirſute, with blackiſh hairs, and ſome ſhort little ſcales at the baſe. Native of Siberia: found by Steller [y].

15. *Root* thick, long, like Navews, with one or two branches. Leaves next the root two or three inches long, reſembling thoſe of *Barbarea*, *Lapſana*, and

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[p] Linn. ſpec.

[q] Hort. kew.

[r] Linn. fl. ſuec.

[s] Ibid.

[t] Krocker, Haller.

[u] Hort. kew.

[x] Gronovius.

[y] Gmelin.

Crepis tectorum, runcinate or lyrate, with from five to ſeven ſmall, obtuſely-triangular pinnules on each ſide, almoſt oppoſite, ſcabrous and rough, with hairs on both ſides; other very ſmall pinnules are frequently interpoſed; the extreme pinnule is near an inch long, cordate-haſtate or ovate, angular, with larger teeth, as in *Alliaria*, *Cacalia*, &c. Scapes leafleſs, coloured, one to ſix, from a palm to a foot or eighteen inches in height, hiſpid with ſpreading hairs, uſually more hirſute towards the top, at firſt bowed towards the ground, then erect. Branches or peduncles very hairy, alternate, but near to each other, an inch or two in length, one-flowered; from the top they come out three together. Calyxes calycled like *Crepis pulchra*; the lower or outer ſcales very ſmall, ovate, acute; the inner calyx conſiſts of equal, lanceolate-oblong, acute, ſmooth ſcales, membranaceous and white at the edge. Corollas yellow, the ſize of *Crepis foetida* and *tectorum*. The marginal ſeeds are thicker, ſhorter, winged, bowed inwards, with the edges a little revolute, the dorſal nerve green, and each rolled up in a ſcale of the calyx, as in *Caltha*, *Rhagadiolus*, and *Hyoſeris*; theſe have no down. The central ſeeds are narrow, longer, ſtraight; and have a hairy, ſeſſile down.—It differs much from *Hypochæris*, in having naked, but not ſcaly peduncles; from *Hieracium* in having a calycled, not an imbricate calyx. Hence Gouan has inſerted it in the genus *Crepis*.

Native of Paleſtine, the South of France, and the County of Nice [a].

16. Scape a foot high, even, with a few, very ſmall, awl-ſhaped leaves alternately ſcattered over it. Flower terminating, from the axil of the leaves. Native of the Cape of Good Hope [b].

17. Root perennial, ſingle, deep, blackiſh. Stem ſingle, undivided, ſtraight, from a foot to two and even three feet in height, in a fertile ſoil. Stem-leaves decreaſing in ſize up to the flower, the uppermoſt being nothing more than a ſcale; the others ſurround the ſtem with their rounded baſe, and end in a lengthened point. Ray ſays, that the leaves reſemble thoſe of Endive, but are narrower, that they are a ſpan long, ſmooth and ſinuated.—Flower large. Calyx very villoſe and ruſſet. Corolla yellow. Seeds ſeparated by ſilky threads, of the ſame length with themſelves [c].

Linneus had made it a *Hypochæris*, but the receptacle having no chaffs, it has been removed into this genus [d]. Monſ. Villars makes it an *Andryala*, on account of the ſilky hairs upon the receptacle.

Native of the mountains of Savoy and Dauphiné, in paſtures.

18. Stem a foot high, round, woolly-white at bottom, ſmooth at top. Leaves broadiſh, attenuated at the baſe, acuminate, remotely toothed, tender, ſmooth; the lower ones hairy underneath, eſpecially along the keel. Panicle terminating, variouſly branched, with very ſlender, divaricating peduncles. Bractes at the ramifications very ſhort, briſtle-ſhaped. Flowers ſmall. Obſerved in Canada by Kalm [e].

19. Stem a foot high, round, almoſt naked, having only a ſingle leaf or two on it, and very few leafleſs branches. Root-leaves lanceolate, upright, with one or two ſharp teeth, even, having a few villoſe hairs along the keel: ſtem-leaves minute, very few. Calyx imbricate, hoary, oblong. Corolla yellow, not one of the largeſt [f]. The whole plant, according to Villars, has the ſmell of the wild lettuce, in a greater degree than any of the Hawkweeds.

Native of the South of France, the Valais, Auſtria, Sileſia, Italy. Perennial. Introduced by Doctors Pitcairn and Fothergill in 1775 [g].

20. Stem a ſpan high, even. Root-leaves petioled, ſmooth: ſtem-leaves five or ſix, alternate, long, with long recurved teeth, like thoſe of Leontodon autumnale (Apargia autumnalis). Peduncles from the upper axils of the leaves, the ſame height with the ſtem, ſolitary, almoſt naked, one-flowered. Bractes one or two, briſtle-ſhaped, ſubvilloſe at top. Calyxes blackhiſpid, upright, imbricate, with linear leaflets. Corolla yellow [h].

Native of the South of France, Auſtria and Sileſia: flowering in june and july. Cultivated in 1640 [i].

21. This plant varies exceedingly, as appears from the different figures which are given of it. The general appearance is as follows:—Root ſimple, producing one ſlender ſtem, a foot or fifteen inches high, cylindrical, having ſoft hairs ſcattered over it, ſlightly ſtriated, reddiſh towards the baſe; ſometimes naked, or nearly ſo, ſometimes cloathed with leaves ſimilar to the others, only more acute. The root-leaves vary conſiderably, but the moſt uſual form is oval-lanceolate, pointed at both ends, and marked with a few large teeth towards the baſe, entire upwards, hairy on both ſurfaces, but the foot-ſtalk and midrib moſt ſo. Flowers in a branched panicle on ſeparate peduncles, with each an awl-ſhaped bracte. Calyx of numerous, unequal, linear-lanceolate leaves; the lower ones ſpreading. Corolla yellow. Seeds nearly cylindrical, furrowed, ſmooth, dark purple, crowned with a ſeſſile down, as long as the ſeed; rays ſimple, the length of the calyx [k].

Linneus obſerves, that the flowers open about ſix in the morning, and cloſe about two in the afternoon. Lightfoot informs us, that about eighteen days elapſe between the firſt expanſion of the flower and the ripening of the ſeed.

It is a perennial plant, is found in woods, on old walls, on ſhady banks, &c. and flowers in june and july, ſometimes in may. By our old authors it is called *French* or *Golden Lungwort*.

β. In this variety, which is made a diſtinct ſpecies by Gouan and Villars, the root-leaves are narrower, and more ſlightly toothed. Stem-leaves ſeveral [l].—Villars ſays, that it grows to the height of three or four feet; that the ſtems are ſtraight, leafy, and terminate in ſeveral branches; that the leaves are oblong, lanceolate, often toothed, duſky green, a little aſh-coloured, and ſoft to the touch. The peduncles have two ſcales next the calyx, as in the common plant, but the calyx is larger; the ſeeds oblong, channelled, very dark purple, ſhorter than in the other ſorts, very like thoſe of *H. ſabaudum*, which bears much reſemblance to this plant in other reſpects. The egret or down is ſhort, yellowiſh white or brown, brittle and ſtraight.

Retzius deſcribes a plant which he takes to be the ſame with this, as having the root almoſt præmorſe, and ſeeming to conſiſt wholly of fibres; ſeveral ſtems, which are leafy, hairy, and many-flowered; root-leaves petioled, ovate-lanceolate, either entire or toothletted, hairy, eſpecially at the edges and along the nerve, running down into very hairy petioles, which are dilated at the baſe; ſtem-leaves lanceolate and ſeſſile; bractes awl-ſhaped at the baſe of the peduncles, and on the peduncles themſelves; flowers ſmaller and paler than in the common ſort.

Johnſon relates, that it was found by Mr. William Coote, in the old Roman camp at Sidmonton near Newberry [m].

γ. With very narrow leaves, on rocks by the rivulet between Shap and Anna well in Weſtmoreland [n].

δ. With roundiſh-ovate leaves; thus deſcribed by Mr. Woodward. Root thick, woody, running deep among looſe ſtones, terminating in long dark brown fibres of the thickneſs of packthread. Root-leaves on hairy foot-ſtalks, obtuſely oval, obſcurely toothed, with a few hairs on the upper, and many on the lower ſurface, ſpotted with numerous dark-red ſpots. Stem about ſix inches high, naked, bearing one flower on the ſummit, and two imperfect ſeſſile ones a ſmall way beneath it: under the loweſt are two-awl-ſhaped bractes. The lower part of the ſtem is ſlightly hairy, the upper part and calyx more ſo. He gathered this elegant variety on Conzick Scar, near Kendal in Weſtmoreland: and it has been found at ſeveral other places in the north. Lightfoot mentions five varieties:

1. With leaves ſprinkled with white ſpots; which

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[a] Gouan. illuſtr.
[b] Linn. amoen.
[c] Villars.
[d] Murr. in ſyſt.
[e] Linn. ſpec.
[f] Linn. mant.
[g] Hort. kew.

[h] Linn. ſpec.
[i] Hort. kew. from Park.
[k] Woodw. Mſs.
[l] Stokes.
[m] Ger. emac. 305.
[n] Ray ſyn.

Ray found frequently abroad, and in the woods near Cuckfield in Suſſex [o].

2. With narrower and more lanceolate leaves: proably our γ.

3. With radical leaves roundiſh: our δ.

4. With leaves pinnatifid at the baſe.

5. With naked unbranched ſtalks, bearing two, and ſometimes only one ſingle flower. Frequent upon the highland mountains in dry rocky places. Figured by Petiver, *herb. brit. t.* 11. *f.* 4.

22. Murray ſays, that Profeſſor Jacquin has allowed this to be different from H. pumilum, n. 2.

23. Root perennial. Stem from one to two feet high, hollow, furrowed, ſmooth, generally bright purple at the baſe. Leaves alternate; the lower petioled, oval-lanceolate; the upper ſtem-claſping, lanceolate, deeply toothed towards the baſe, entire at the ſummit; the uppermoſt entire; all ſmooth; the foot-ſtalks and midrib of the lower leaves ſometimes purple as the ſtem, particularly on the under ſurface. Flowers ſingle, ſmaller than in *H. murorum*. Leaves of the calyx linear-lanceolate, covered on the back with numerous black hairs. Peduncles ſmooth [p].

The flowers open at ſix in the morning, and cloſe at five in the afternoon. Poſſibly it may be only a variety of *H. murorum*, though it has acquired, from its place of growth, ſo very different an appearance [q].

Native of many parts of Europe, in moiſt meadows and woods, and by the ſides of mountains, rivers and rivulets. With us in ſeveral parts of the northern counties of England, and in Scotland.

24. This is very nearly allied to the foregoing. Stem even. Calyxes pubeſcent, as are alſo the peduncles, which is not the caſe in that. Leaves more lyrate, petioled, with blunter angles. Native of Siberia [r]. Introduced in 1777, by Monſ. Thouin [s].

25. Root perennial, black, branched, frequently ending abruptly. Plant evergreen. Stem eighteen inches high, branched at top, bearded at the baſe only, or between the ſheaths of the root-leaves, with long white hairs, cloſely crowded together, in other parts quite ſmooth, glaucous, ſhining, ſlightly ſtriated. Leaves thin; the bottom ones of various ſizes, from three inches to a foot in length, from an inch and half to two inches in breadth, ſeldom ſharp, narrowing into the petiole and decurrent, with a few very ſmall teeth from the baſe only to the middle, thence always quite entire to the end; the younger ones are greener, only with white hairs underneath; thoſe which are more advanced are quite bald, except at the baſe of the petioles and along the midrib, of a yellowiſh green, or glaucous. Stem-leaves oblong-ovate, broader at the baſe; the uppermoſt and thoſe on the branches are more cordate and ſharper. Corymbed, alternate, many-flowered branches ſpring forth about the middle and upper part of the ſtem. Peduncles one-flowered, aſh-coloured, and hiſpid, with long hairs, ſingle from the axils, with a ſcale about the middle of them. Calyxes acute, ſcarcely pubeſcent at flowering time [t].

Linneus refers to Tournefort, and Monſ. Villars ſays, that Tournefort's plant, which he had ſeen in the Paris garden, has a ſtrong, branching ſtem; cordate, villoſe, glaucous, toothed leaves; and large flowers: ſo that it is between the *H. villoſum* and his *ſcorzoneræfolium.* He adds, that Linneus's plant, in its pointed leaves, villoſe and glaucous on both ſides, its large flowers, and its calyx, approaches to his *H. villoſum:* and that Gouan's, in the multitude and ſmallneſs of the flowers, approaches rather to his *H. prenanthoides.*

Gouan remarks, that it varies in its native place, with a ſtem ſcarcely a hand in height, with two flowers, and a ſingle leaf, if any. Native of the Pyrenees. Cultivated in 1739, by Mr. Miller [u].

26. Allied to *H. villoſum*, and ſtill more to *pyrenaicum:* The whole plant has hairs glandular at the tip, thinly ſcattered over it. Stem a foot high, ſtriated: branches uſually two-flowered from the upper axils. Leaves cordate (the lower ones oblong) green on both ſides, finely toothed. The panicle has a pile between the hairs, by which it is almoſt tomentoſe [x].

Native of the Pyrenean mountains. Cultivated in 1739 by Mr. Miller [y].

Gouan, who makes the next a variety of this, ſays that no ſpecies varies more, but that it may eaſily be diſtinguiſhed by its pleaſant balſamic ſmell whilſt young, and by the whole plant abounding in glutinous hairs, having globules at the end.

According to Villars, the conſtant characters of the ſpecies in all the varieties are, the great quantity of glandular hairs, which give it the ſmell of baum or new honey; the openneſs of the lower ſcales of the calyx; the ruſſet colour of the whole plant; the truncated root; and the hairs of the egret brittle, and elbowed at the baſe.

27. This ſpecies alſo varies ſo much as not eaſily to be determined. It partakes of this genus, Crepis and Picris; and ſeems very nearly allied to *Crepis ſibirica* [z]: Which however differs from this totally, according to Monſ. Villars: the ſtem being ſingle in Cr. ſibirica, four feet high, terminated by ſeveral ſpreading branches, the ſide ones higher than thoſe of the middle, as in Crepis biennis; the leaves three times as wide and longer, almoſt ſmooth, dark green above, the form and colour of turnep leaves; the ſtem-leaves cut, lyrate at the baſe, the upper ones linear; the calyx not double, angular, dark, with black hairs, that have no glands at the end. Seeds oblong, with a white ſeſſile egret.

α. Root perennial, fibrous, forming a tuft, whence ſpring ſeveral ſtems, a foot and half high. Leaves more or leſs villoſe; the lower oblong and toothed at their baſe; thoſe on the ſtem ſhorter and claſping. Peduncles ſeveral, ſolitary, from the upper axils, each terminated by one large, yellow flower, in which the florets are ſeparated and diſperſed. Calyx double; ſcales of the outer linear, of the ſame height with the others, but leſs villoſe; the inner black, ciliated on the back, and ſometimes glandular. Seeds long, with a white ſeſſile egret. Receptacle a little villoſe. Native of Dauphiné [a].

β. Root as in *Hypochæris radicata*. Stem two feet high, upright, ſlightly ſtriated, hairy, branched only at top; branches naked, alternate, one-flowered, forming a ſort of corymb. Leaves hiſpid on both ſides, with hairs ſtanding out; the lower ones three inches long, lanceolate, an inch broad, acuminate, narrowing at the baſe into the petiole, half-ſtem-claſping, toothed; the ſegments alſo ſometimes toothed. Stem-leaves ſeſſile, broader at the baſe, half-ſtem-claſping. Peduncles or branches three inches long, axillary, alternate, cloathed at top only with very ſmall, looſe, wandering ſcales. Calyx ovate, with the outer ſcales looſe and very ſmall; the inner twice as long; all hairy on the dorſal nerve. Corolla yellow. Down feathered, ſeſſile.—In appearance it very much reſembles *Picris hieracioides*; from which however it differs in having alternate, long, one-flowered peduncles; larger hairy calyxes, not hiſpid; and the teeth of the leaves ſpreading.—Native of the Pyrenæan mountains [b].

γ. From a woody, perennial, brown, divided root, ariſe a few, ſimple, round, ſmooth, upright ſtalks, ſtriated, and more or leſs hiſpid at top, annual, from a foot to a foot and half in height. Root-leaves very few, obverſely lanceolate, toothletted, narrowing gradually into a long petiole: on the flowering plant there are commonly none of theſe. Stem-leaves alternate at certain intervals, lanceolate or ovate-oblong, acute, toothletted, not ſinuate, ſtem-claſping, very ſlightly hirſute, the longeſt four inches in length, thin. Peduncles three or four, (ſometimes only a ſingle terminating one) axillary, ſolitary, almoſt of the ſame height, upright, hiſpid, ſtriated, leafleſs, or having only one or two ciliate bractes. Flower large and elegant, yellow. Calyx hiſpid, with long briſtles; leaflets very many, oval, acuminate, black, almoſt equal; the outer ones very looſe. Seeds oblong, crowned with a white, ſeſſile, ſimple down. It is therefore very nearly allied to *Crepis ſibirica*, differing from it principally in the leaves.—Native of Auſtria, flowering there in auguſt [c].

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[o] Ray hiſt. 239.
[p] Woodw. Mſs.
[q] Linn. ſuec. & ſpec.
[r] Linn ſpec.
[s] Hort. kew.
[t] Gouan.
[u] Hort. kew.

[x] Linn. mant.
[y] Hort. kew.
[z] Linn. ſyſt.
[a] Villars.
[b] Gouan.

δ. In habit this differs not much from *Picris pyrenaica* and *hieracioides*, but it does abundantly in having all the leaves minutely toothed. Stem-leaves much ſagittate, with very acute earlets. Peduncles long, one-flowered, ſwelling below the flower, black with hairs, without any ſuch wandering ſcalelets as there are in Picris pyrenaica. Calyxes ovate, with black hairs all over them, not at the angles only, imbricate with looſe ſcales. Down ſimple, ſeſſile [d].

Native of Switzerland, &c.

28. Root perennial, blackiſh, bitten, and furniſhed with long white round fibres: it produces annually a ſimple, upright, ſtriated, purpliſh, ſomewhat hairy, leafy ſtem, of about a foot or two in height; the top of which is divided into a few ſingle-flowered or two-flowered foot-ſtalks, of about an inch and half long, and a little hairy. The leaves are oval, obtuſe, quite entire, villoſe on both ſides, and ſoft. The upper ones are ſeſſile; the loweſt and radical ones a little narrowed into a foot-ſtalk either ſimple or ſubmarginated: in ſome individuals theſe leaves are a little toothed; and again in others lanceolate, and that either obtuſely or acutely; ſo as to differ a little from the more common appearance. The calyx is oblong, and conſiſts of leaflets diſpoſed in a ſingle ſeries, not imbricated, nearly equal, ſharp, erect, concave, blackiſh-green, and hairy. At the baſe commonly ſtands a little ſcale or two, ſcarce obſervable. Corolla deep yellow, with anthers and ſtigma of the ſame color. Seeds ſtriated, ruſeſcent, crowned with a ſeſſile down, which appears toothed when magnified: the other particulars agree with the Linnean character. It grows about the borders of the ſubalpine woods, flowering in july, and producing ſeeds in auguſt. It approaches neareſt to the Hieracium murorum, with which it often grows mixed; but is truly different, and even diſtinguiſhable at a diſtance by the number of leaves on the ſtem, and the colour of the flowers. When cultivated in a garden, it flowers about the end of may and beginning of june, and grows more branchy from the boſoms of the leaves; but in other reſpects does not change its habit.—Native of Auſtria. Was diſcovered alſo in Scotland in the year 1780 by Mr. Dickſon.

29. This plant grows a foot high or higher, on hilly meadows; flowering in june, and ſeeding in july. From a perennial, bitten, oblique, round root of about the length of an inch and half, and the thickneſs of a quill, of a paleiſh brown colour, and increaſed by ſmall fibres, it produces annually a ſolitary, round, ſomewhat ſtriated, fiſtulous ſtem, ſmooth below, and above rather hiſpid, with ſcattered dark hairs: it is either furniſhed with one leaf, or elſe is quite aphyllous, and divided into two, three, or four ſingle-flowered foot-ſtalks, which are upright, and have each a ſmall leaf or ſtipule beneath. The radical leaves are few, and are gradually attenuated and lengthened downward (or into the foot-ſtalk) from an obverſe-ovate and rather mucronated ſhape: they are thin, very ſmooth on both ſides, ſparingly dentated, and of a bright green, with pale green backs. The cauline leaf, when preſent, is oblong-lanceolate, ſeſſile, ſharp-pointed, ſomewhat dented, and according to the different height of its inſertion is ſometimes quite ſmooth, and ſometimes hiſpid, like the ſtem. The calyx is nearly equal, and blackiſh-green; with ſharp ſcales, thickly haired with black hairs. The corollules are yellow and five-toothed. Anthers brown. The calyx is reflected when in ſeed. Receptacle naked, punctated, and flat; ſuſtaining oblong, obtuſe, browniſh, ſubmuricated, oblong ſeeds, crowned with the pentaphyllous calyx, and with a ſimple ſtipitated down. It has moſt particulars common to moſt of its congeners: it recedes from Hieracium in the foot-ſtalk of the down; ſo that it might ſeem to conſtitute a ſingular genus [e].

Native of Auſtria.

30. Stem ſtriated, ſomewhat hairy. Branches the height of the ſtem. Root-leaves lanceolate, broadiſh, ſomewhat hairy, with unarmed teeth. Stem-leaves cordate, claſping, converging upwards at the baſe. Peduncles one-flowered, with a remoter calycine bracte. Calyx ſpreading, leſs imbricated, with leaflets nearly equal in length, and hairs black at the baſe, and a yellow gland at the top ſcattered over them. Seeds black, with a ſeſſile, ſimple down [f].

It varies, ſays Jacquin, ſo much in different ſoils, that it is difficult to give ſuch a deſcription as will agree with every individual.—Root knobbed, unequal, blackiſh, perennial, with round, whitiſh fibres. Stem upright, round, hairy, about half a foot in height, greeniſh-aſh-colour, often dotted with brown; it has few leaves on it, and is commonly quite ſimple, terminated only by a ſingle flower, with ſometimes, but very ſeldom another peduncle or two from the upper axils. Root-leaves few: ſtem-leaves alternate, nearer the lower they are, pale green, ſomewhat toothed, acute, ſeſſile, having long white hairs, eſpecially on the midrib and along the edges; the lower ones oblong, attenuated at the baſe; the middle ones ſubovate; the uppermoſt ſubcordate: ſometimes theſe are waved, but they are more often flat. The points of the leaves are brown. Flower large, handſome, yellow. Calyx looſe, with black dots, and much white wooll [g]. Seeds ſhort, with a ſeſſile, ſimple egret, appearing toothed with a magnifier.

The hairs on this plant are almoſt all very white, long and feathery; there are ſome, however, ſhorter, and terminated by a gland [h].

Native of Dauphiné, Switzerland, Auſtria, Bohemia, Sileſia, in mountain paſtures. Found alſo on moiſt rocks on Ben Nevis mountain in Scotland by Mr. James Dickſon, in 1789.

β. Stem ſimple, terminated by one or two flowers, higher by half than that juſt deſcribed. Scales of the calyx not open. The whole plant leſs white, more ruſſet; and the long feathered hairs, which are almoſt the only ones in that, are in this mixed with other ſingle ones, that are ſhorter and glandular, and alſo with a third ſort, very fine, branched and ſeſſile, making the calyx farinaceous [l]. Native of Dauphiné, Switzerland, &c.

γ. Stem ſtraight, eighteen inches high, with long hairs at bottom, otherwiſe ſmooth, one-flowered. Root-leaves half a foot long, lanceolate, leſs than an inch in breadth, ſmooth, except that ſometimes the midrib has very long hairs on it; they are tender, and either entire on the edge, or with a very few ſhort teeth. Stem-leaves ſeveral, oval-lanceolate, half-ſtem-claſping, not hooked. Flower large, yellow; the calyx bearded with fulvous hairs, which become hoary. Native of Switzerland [m].

δ. Jacquin mentions his having found a variety of this, in moiſt meadows, and in a lower ſituation, which was quite ſmooth and glaucous, or had very few hairs on it, which was probably the ſame with this of Seguiers.

31. This has the habit of *Crepis tectorum.* Leaves ſoft, clammy; the upper ones lanceolate, quite entire. Stem ſtriated. Root annual. Native of the South of France [n].

32. Stem erect, narrower than in *H. ſabaudum*, even. Leaves alternate, ſubſeſſile, acuminate, ſmall, naked, more finely toothed on the outſide than any of the ſorts. Peduncles at the top of the ſtalk, alternate, commonly ſimple and one-flowered, white-tomentoſe; with fewer, linear bractes. Flowers ſmall, terminating, upright. Found by Kalm in Penſylvania [o].

33. Native of Spain. Introduced in 1778, by Meſſrs. Kennedy and Lee [p].

34. The ſtem has a few ſtiffiſh hairs on it, with alternate, ſhorter, ſimple branches. Leaves claſping, ovate, bluntiſh, ciliate, thinly hairy, but more underneath. Calyxes terminating, ſeveral, peduncled, ſcatteringly haired [q].—Native of Portugal. Introduced in 1783, by Mr. John Græfer [r].

This having a plumoſe, ſtipitated egret or crown to the ſeed, cannot belong to this genus, and hence Gærtner has made it a ſpecies of *Helmintia*.

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[c] Jacqu. vind.

[d] Gouan.

[e] Jacquin.

[f] Linn. ſpec.

[g] Jacqu. vind.

[h] Villars.

[l] Ibid.

[m] Haller.

[n] Linn. ſpec.

[o] Ibid.

[p] Hort. kew.

[q] Linn. ſyſt.

[r] Hort. kew.

35. Stem firm, hirſute, three feet high. Leaves ſoft, ovate, acuminate, hairy at the edge, and on all the nerves of the lower ſurface; the lower ones are petioled, the upper ſtem-claſping, hooks blunt, teeth very ſhort, if any. Stem naked at top, many-flowered; peduncles branching, bearded with a black pile. Calyx alſo black, with hard hairs [s].

Allioni remarks, that the root-leaves indeed are toothed, but the ſtem-leaves entire, or ſcarcely toothletted, half-ſtem-claſping, rounded at the baſe, ovate-lanceolate, duſky green above, and turning black in drying. Flowering-branches axillary. Calyx ſubcylindric, bearded with black hairs. The whole plant is hirſute, with ſhort hairs.

The ſmallneſs and great number of flowers in this plant, joined to their conical form, and the diſpoſition of the branches, which ſubdivide and divaricate at right angles, diſtinguiſh this plant from all the known Hieraciums [t].

Native of Switzerland, Dauphiné, and Piedmont. Found by Mr. James Dickſon in woods in the ſouth part of Scotland, 1789.

36. Root fibrous, perennial, yellowiſh aſh-colour on the outſide, white within. Stem upright, cylindrical, from two to three feet high or more, moſtly hairy towards the baſe, ſmooth towards the top, ſtriated, green, with red dots; branched, ſometimes from half or two thirds of the way up; the uppermoſt branches often ſpringing from one point in manner of an umbel; thoſe below alternate. Leaves alternate, at their baſe cloſely preſſed to the ſtem, and half embracing it, often crowded together in one part, ſomewhat rigid, thickiſh, ſinuate-toothletted, or very diſtinctly toothed on the edge, the teeth few, ſharp, pointing forwards, a little oblique, often ſomewhat waved, dark green, and almoſt ſmooth above, pubeſcent and paler on the under ſide, ſomewhat rugged, frequently painted with bloody ſpots; the larger ones more than five inches long, and an inch and half wide; the upper ones ſhorter and narrower, with fewer toothlets; thoſe next the flowers very ſmall, and quite entire. Branches ſubdivided; and the laſt ſubdiviſions one-flowered, but not in form of an umbel, as in the next ſpecies. Peduncles erect, whitiſh with pubeſcence, a little thicker at top, having ſcales ſcattered over them, forming a thin corymb. Flowers yellow, an inch and half in diameter. Calyx almoſt cylindric, but a little wider at the baſe; ſegments (fifty-three) lanceolate, ſharpiſh; the outer ones ſhorter, unequal, ſpreading at top, but not reflex, as in *H. umbellatum*, ſlightly pubeſcent or ſmooth, dark green; the inner equal. Florets (ſeventy-ſeven) ſtriated, ſeven or eight lines long, five-toothed, blunt, above a line wide, a little hairy on the outſide about the top of the tube. Seeds linear, ſtriated, crowned with a ſimple ſeſſile down [u]. Receptacle naked, (often a little hairy) cellular: more rugged than in the other ſpecies, according to Linneus. Dr. Withering ſays, that it is thinly ſet with fine, white, taper, chaffy briſtles. According to Villars it is alveolate, as in *Leontodon hiſpidum*. The flowers open at ſeven in the morning, and cloſe between one and two in the afternoon: in july, auguſt and ſeptember.

It varies with leaves covered with a ſhort and juſt perceptible down, ſo as to have the appearance of being ſmooth; with one flower only on a ſtem; and with broad-lanceolate leaves on very ſhort foot-ſtalks.

Native of moſt parts of Europe, in woods and hedges: in Britain not very common. It flowers from july to ſeptember.

37. Root perennial, præmorſe or truncate, yellow on the outſide, white within, having many fibres in bundles. Stem from two to four feet high, upright, ſimple, round, ſtriated, hollow, nearly ſmooth, green, frequently dotted with red, alternately eſpecially towards the top, dividing into branches. Leaves numerous, alternate, ſcattered, decreaſing in ſize upwards, ſeſſile, linear-lanceolate, having a few ſharp teeth towards the baſe, the margins and nerves ſlightly hairy, ſomewhat rugged on both ſides, four inches long, and ſeven lines broad. Flowers in a kind of umbel, ſolitary on branched, pubeſcent peduncles, which thicken under the flower, and have an awl-ſhaped bracte or two on them. Calycine leaflets unequal, linear-lanceolate, (fifty-two). dark green, ſquarroſe; outer ſomewhat downy, ſhorter, reflex at the tip; inner ſmooth. Flowers large, yellow, containing as far as ninety-ſeven florets. Seeds cylindrical, ſmooth, grooved, blackiſh, crowned with a ſeſſile yellowiſh down, having ſimple rays, as long as the calyx. Receptacle naked, alveolate [x].

This ſpecies is often confounded with the preceding, by intermediate individuals that partake the characters of both, and perhaps they are more diſtinguiſhable by the eye, than by the ſpecific differences. In general this has narrower leaves, though they are not always linear, but ſometimes lanceolate, or even ovate; and the flowers grow in an umbel, or ſpring from one common centre, though the ſtem often becomes branched half way up, producing ſcattered flowers all the way; the outer calycine ſcales are more ſeparated than the inner ones, or ſquarroſe, as Linneus calls them; but this is not a conſtant character, any more than the colour of the ſeeds; ſo that there does not ſeem to be any certain mark of ſeparation between them [y]. Mr. Curtis thinks that the moſt obvious character of the ſpecies conſiſts in the narrowneſs of its leaves.

Native of moſt parts of Europe in dry paſtures. In Britain not very common. Near London, on ſandy or gravelly heaths, about Hamſtead, Barnet and Charlton; near Hilderſham and Gamlingay in Cambridgeſhire, &c. It flowers in july, auguſt and ſeptember.

It is a ſtrong-ſmelling plant, and in Scania is uſed as a dye, communicating to wooll an elegant and beautiful colour [z].

This plant varies much in ſize, ſhape, ſmoothneſs, &c. of the leaves; and in the diſpoſition of the flowers. In the ſmaller ſpecimens the leaves are leſs toothed, and frequently quite entire, with the ſtalk ſometimes ſimple and one-flowered: in the larger ſpecimens the ſtalk is much branched, and the leaves are more toothed or even jagged: it rarely has the umbellate appearance in perfection [a].

38. This plant reſembles the *alpinum*; but that has oblong, blunt, ſilky leaves; weak, thin ſtems, and a lanuginoſe calyx; this has pointed leaves, villoſe but rude, of a dirty dark green, as well as the ſtem and calyx: the ſtem is more firm and thick, and frequently ſhorter; the calyx is thicker, and the flower larger.—The ſtem is from ſix to eight inches high, ſtraight, ſtout, terminated by one, two or three flowers, hirſute, with long, lanuginoſe hairs, and others that are ſmaller, placed on a black baſe, which gives a roughneſs to the ſtem. Calyx oval; ſcales lanuginoſe, ſeparate, dirty gray, a little viſcid.—Native of Switzerland, Savoy and Dauphiné.

39. See variety β. of n. 30.

40. This is allied to the preceding in its habit and leaves, to *ſpicatum* n. 35 in its flowers, and to *amplexicaule* n. 26, in its glandular hairs. Stems from a foot to two feet in height, firm, villoſe, ſtraight, with ſome axillary, ſubdivided branches. Leaves villoſe, with long hairs both ſimple and feathered; they are oblong, whitiſh, entire or ſlightly toothed, rounded at the baſe and ſtem-claſping. Flowers middle-ſized, in a gray and blackiſh calyx. Native of Dauphiné. Perennial.

41. Root oblique, truncated, perennial. Stem from a foot to two feet in height, a little inclined at the baſe, terminated by two or three ſolitary flowers. The leaves vary much; their ſhining cinereous colour and pointed extremity are their moſt conſtant characters; they have a few long hairs, eſpecially at their baſe and on their back, which are feathered; ſome of the ſame ſort are on the ſtem, and on the upper part of it ſome others which are blacker. Calyx large and aſh-coloured, with ſcales not divaricating, as in *H. villoſum*, to which otherwiſe this is very nearly allied, but lanu-

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[s] Haller.

[t] Villars.

[u] Pollich.

[x] Pollich, Woodw. Mſs.

[y] Villars.

[z] Linn. ſuec.

[a] Curt. lond.

ginoſe or aſh-coloured. Seeds ſmall, black, ſhort, channelled, and crowned by a ſeſſile egret of brittle, toothed hairs, often elbowed at the baſe, as in *H. amplexicaule.* Native of Dauphiné, and the Alps, in the beds of torrents: alſo in Auſtria, if it be Jacquin's plant.

42. This ſpecies is intermediate between *H. porrifolium* and *murorum.* Leaves middle-ſized, lanceolate, ſmooth, with black or brown ſpots, on a glaucous or aſh-coloured ground, very ſlightly toothed. Stem firm, branched, a foot or eighteen inches in height, having little, oval, acuminate, ſeſſile leaves at the diviſion of the branches. Calyx aſh-coloured. Flowers middle-ſized. Native of Dauphiné.

43. Root very thick and deep, frequently forked at the upper part, perennial. Leaves oblong, three or four inches long, and ſix or eight lines wide, glaucous, tender, bright green, with a white nerve, and a few ſinuoſities on the edge. Stem about a foot high, ſimple, or having two or three ſpreading branches about the middle, naked except a ſingle leaflet under each branch. Flowers large, pale yellow or ſulphur-coloured, as in *H. Piloſella*; turning green in drying. Native of Dauphiné, Piedmont, Switzerland.

44. Root thick, creeping, truncated, perennial. Leaves wide, cottony, aſh-coloured. Stem thin, a few inches high, terminated by two or three flowers. There is a linear leaflet under each branch, and a ſcale or two near the calyx, which is ſmooth, or very rarely a little villoſe. Seeds blackiſh; their receptacle manifeſtly villoſe. Native of Dauphiné and Italy.

H. montanum. *Scop. carn. n.* 968. *t.* 50. ſeems to bear ſome relation to this plant.

45. Root thick, truncate, perennial, covered with ruſſet membranes. Leaves wide, oblong, villoſe, with many long branched hairs. Stems ſlender, leſs villoſe, almoſt naked, half a foot high, terminating in five or ſix unequal thin long branches, each ſupporting one flower, a little larger than in H. murorum. The peduncles have two ſcales near the calyx, and one leaf at their baſe. The hairs of the calyx are in part glandular. Native of Dauphiné. Found alſo in the north of England, and commonly ſuppoſed to be a variety of H. murorum.

46. Root oblique, thick, perennial. Leaves oval, pointed, curled on the edge, which renders them concave upwards, like the bowl of a ſpoon; they have alſo ſinuations more or leſs deep at their baſe; they are entirely white with the down that covers them; this is compoſed of hairs a line in length, with little branches on them at right angles with the main hair. Stem low, divided into two or three branches, which are of the ſame length with it, and divaricate. Each is terminated by a flower, like that of *Andryala lanata,* but ſmaller. The calyx and ſtem have hairs on them of the ſame kind. The receptacle is villoſe. Native of Dauphiné.

47. This plant is cottony, like the laſt, and ſmall. It is diſtinguiſhed by its lanceolate, toothed leaves. Native of Dauphiné.

Theſe are nearly allied to Andryala lanata, which Villars makes a ſpecies of Hieracium.

48. Root thick, oblique, fibrous, truncated, perennial. Leaves like thoſe of H. murorum, not ſeſſile, however, but growing from a winged petiole, more or leſs cut; they are villoſe, but green, and pointed at the end. Stem alſo villoſe, of different heights, terminated by two or three flowers, like thoſe of H. murorum, but larger. Calyx villoſe, blackiſh, with a few glandular hairs. Egret ſeſſile, with ſimple hairs ſlightly toothed. Native of Dauphiné. Perhaps no more than a variety of H. murorum.

49. Root perennial. Stem ſtraight, firm, from one to two feet in height. Leaves half-ſtem-claſping, all on the ſtem, which is ſimple; they are numerous, oval or lanceolate, villoſe, pale, toothed. Stem terminated by a bunch of from ſix to twelve flowers in a blackiſh calyx; they are of a middle ſize, as in H. murorum; to which, to H. ſabaudum and ſpicatum this is ſomewhat allied. Native of Dauphiné.

50. Root perennial, oblique, thick, covered with ſcales. Root-leaves lanceolate, petioled, villoſe, dark green: ſtem-leaves two or three, ſeſſile, toothed. Stem about a foot high, terminated by ſeveral middle-ſized flowers in a calyx, which is a little viſcid. Native of Dauphiné, on walls.

It is probably only a variety of H. amplexicaule, which, as Allioni obſerves, varies remarkably in the length, breadth, thickneſs and toothing of the leaves.

51. Root perennial, long, oblique, ſimple, woody. Stem about a foot high, commonly divided into two, and ſometimes into three, elongated, unequal peduncles, almoſt naked at bottom, but a little higher, having oblong, pointed leaves, of a ruſſet colour, villoſe and toothed, or ſinuated; they are three or four inches long, and about half an inch wide, but frequently narrower, and ending in a lanceolate point: they are very cloſe, embrace half the ſtem with their rounded baſe, and ſtand out at right angles with the ſtem: of the two or three peduncles, one or two are ſtraighter, or deviate leſs from the direction of the ſtem, are more villoſe, and have from four to ſix linear ſcales; they become blacker towards the calyx: the other is oblong, black, villoſe and ſcaly, the inner ſcales a little membranous on the edge. Flowers larger, reddiſh on the outſide, pale yellow within. Seeds ſhort, brown, crowned by a ſeſſile egret of ſimple hairs, but toothed and ruſſet. The whole plant is rough, of a yellowiſh green, covered with glandular hairs, that give it a diſagreeable ſmell. Native of Dauphiné, and Savoy, on high mountains, in ſunny paſtures.

52. Root perennial, ſimple, thick, dividing at top into two parts, one of which produces a ſtem without leaves at the baſe, and the other a bundle of root-leaves without ſtem for the moſt part. Root-leaves oblong, pointed, ſinuated with ſharp teeth at the baſe; but wider, more entire, and lanceolate in the other parts. Stem-leaves claſping, with lateral earlets at the baſe, which turn back, and are often divided in two at the end. Stem a foot long, firm, thick, a little inclined at the baſe, grooved, and terminated by one, two, three, and even as far as fourteen pretty large flowers, which are all on ſeparate peduncles, from an inch to two inches in length, cloathed with ruſſet hairs, which are often glandular, like thoſe on the reſt of the plant, and darker coloured, a little dilated at the end, where they have two little ſcales. Calyx black, ſcaly, covered with glandular hairs: the ſcales are unequal, the lower two or three, the upper twelve or thirteen; they make the calyx angular, always half cloſed, and they are black and ciliate on the back. Seeds oblong, channelled, ruſſet, a little ſmaller at top; the outer ones frequently lying in the channel formed by the ſcales of the calyx. Crown ſeſſile, compoſed of ſimple hairs of a ſnowy whiteneſs, and forming a very ſoft pencil. Receptacle a little alveolate. Native of Dauphiné, in alpine meadows.

This ſort is in ſome degree allied to H. amplexicaule by its glandular hairs, and to the preceding by its deep roots; its leaves are in a juſt medium between them. It is diſtinguiſhed by its beautiful egret, and by that approaches to the genus Crepis [b].

53. Plant about a foot high, with an upright ſtem, not putting out runners. Leaves narrow, ſharp, covered with long hairs. Stem dividing in the middle. Calyx very ſmooth. Flowers ſmall, heaped on the top of the ſtem [c]. Perennial. Native of Switzerland, the Valais and Piedmont.

54. Root thick, black, perennial. Scape a hand in height, almoſt naked, ſimple, one-flowered. Calycine leaflets ovate-lanceolate, ſmooth. Native of the county of Nice, about Soſpello. It ſeems to rank between this genus and Scorzonera [d].

55. Root perennial. Leaves veined, ſomewhat like thoſe of Bupleurum; the loweſt on very long petioles, the others long-ovate, blunt, with ſcarcely any teeth, the upper ones claſping, but with ſhort and very blunt hooks, the uppermoſt linear. Stem few-flowered, brachiate. Calyx black, hairy [e]. Native of Switzerland and Piedmont.

PROPAGATION AND CULTURE.

Moſt of theſe plants are reputed to be weeds, and very few of them are cultivated, except in botanic gardens. If their ſeeds are permitted to ſcatter, they will in general propagate themſelves, and being moſtly perennial, they may alſo be increaſed by parting the roots.

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[b] Villars. [c] Haller. [d] Allioni. [e] Haller.

N. 12, and 20, Orange-flowered and Gum-Succory Hawkweed have been long known in our gardens. N. 10, 25, 26, were cultivated by Mr. Miller near ſixty years ago. A few others have been introduced ſince; as N. 19, 24, 27, 33, 34.]

They may all be propagated by ſeeds, which ſhould be ſown on an eaſt aſpected border in march; and when the plants come up, they muſt be kept clean from weeds, till they are ſtrong enough to remove, which will be by the beginning of june; then they ſhould be tranſplanted to a ſhady border of undunged ground, at ſix inches diſtance, obſerving to water them if the weather ſhould prove dry, till they have taken new root; after which, if they are kept clean from weeds, they will require no other culture: in the autumn they ſhould be tranſplanted where they are deſigned to remain; the following ſummer they will flower and produce ripe ſeeds, and the roots will continue ſome years, if they are not planted in a rich moiſt ſoil, which frequently occaſions their rotting in winter.

They may alſo be propagated by parting the roots in autumn.

[HIERACIUM. See *Andryala*, *Apargia*, *Crepis*, *Hedypnois*, *Hyoſeris*, *Hypochæris*, *Lapſana*, *Leontodon*, *Pectis*, *Picris*, *Senecio*, *Sericla*, *Sonchus*, *Tragopogon*.

HIEROBOTANE. See *Veronica*.

HIEROCLOE. See *Holcus*.

HIGH-TAPER. See *Verbaſcum*.

HILLIA. (*So named by Jacquin, in honour of Sir John Hill, M.D. author of many large works in Botany, other parts of Natural Hiſtory, &c.*)

Lin. gen. n. 444. *Reich.* 479. *Schreb.* 601. *Jacqu. amer.* 96. *Swartz obſ.* 134.

Claſſ. 6. 1. Hexandria Monogynia.

Nat. order of *Contortæ.—Rubiaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* double: *lower* ſix-leaved: *leaflets* oppoſite, unequal, oblong, entire: the two inner ſmaller, embracing the germ, deciduous, coloured: *upper* two to four-leaved; leaflets lanceolate, acute, erect, permanent.

COR. monopetalous. *Tube* cylindric, very long, ſtriated, towards the border ventricoſe. *Border* ſix-cleft: *clefts* long, reflex, contorted, revolute.

STAM. *Filaments* ſix, very ſhort, inſerted below the border into the belly of the tube. *Anthers* oblong, two-celled, within the throat of the corolla.

PIST. *Germ* inferior, oblong, obſcurely ſix-cornered. *Style* filiform, thick, the length of the tube. *Stigma* thickened, compreſſed, bifid.

PER. *Capſule* elongated, angular, two-celled, opening longitudinally into two valves, crowned with the leaflets of the upper calyx.

SEEDS numerous, pappoſe, round, a linear receptacle. *Down* capillary.

OBS. H. tetrandra *takes away a ſixth and a fifth part of the number.*

ESSENTIAL CHARACTER.

Cal. double, lower ſix-leaved. *Cor.* very long, contorted. *Capſule* two-celled, two-valved, crowned. *Seeds* downy.

SPECIES.

1. Hillia longiflora.
Swartz prodr. 58. *obſ.* 135. *t.* 5. *f.* 1.
H. paraſitica. *Lin. ſyſt.* 344. *ſpec.* 1662. *Reich.* 2. 110. *Jacqu. amer.* 96. *t.* 66. *pict.* 50. *t.* 97.
Corollas ſix-cleft, clefts lanceolate, revolute, leaves ovate, acute.

2. Hillia tetrandra.
Swartz prodr. 58.
Corollas four-cleft, four-ſtamened, clefts ovate, leaves obovate.

DESCRIPTIONS, &c.

1. This is a ſhrub, with an aſcending ſtem, a fathom in height, branched, looſe, ſmooth, brittle, covered with an aſh-coloured, ſhining bark. Branches ſimple, leafy, round, ſmooth, brittle. Leaves oppoſite, decuſſated, ſpreading, entire, ſcarcely nerved, veinleſs, very ſmooth, ſomewhat rigid, on round, ſmooth, petioles. Flowers terminating, ſeſſile, ſolitary, very long, white, very ſweet. Upper calyx two-leaved, ſometimes but ſeldom four-leaved; the lower has from four to ſix leaves. Tube of the corolla three or four inches long; ſegments of the border an inch in length. Anthers whitiſh. Stigma clammy, dark green. Capſule from one to two inches long, ſlightly hexagonal, grooved. Seeds ſmall, oblong, acuminate.

Native of Jamaica, in wet coppices on the mountains, not paraſitical, but creeping among old moſſy wood: flowering in ſummer[a]. Alſo in Martinico; flowering in april[b].

2. This has a ſixth and a fifth part leſs in the fructification than in the other ſort. It is a ſhrub, native of Jamaica[c].

HINA-PARITI. See *Hibiſcus mutabilis*.

HIPPIA.

Lin. gen. Reich. n. 1077. *Schreb.* 1343. *Gærtn. t.* 164. *Juſſ.* 184.

Claſſ. 19. 4. Syngeneſia Polygamia Neceſſaria.

Nat. order of *Compoſitæ Diſcoideæ.—Corymbiferæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Common* hemiſpherical, ſomewhat imbricate, with ovate ſcales.

COR. *Compound*, diſcoid: floſcules *male*, ſeveral in the diſk; *females* ten in the circumference. *Proper* of the Males funnel-form, five-cleft, upright: of the Females obſolete, tubulous, two or three-cleft.

STAM. In the males, *Filaments* five, very ſhort. *Anther* cylindric, ſhorter.

PIST. In the females, *Germ* margined, large. *Style* bifid. *Stigmas* upright.

PER. none. *Calyx* unchanged.

SEEDS. In the *Females* oval, with a very wide rim all round, naked.

REC. naked.

ESSENTIAL CHARACTER.

Cal. hemiſpherical, ſubimbricate. *Corcllets* of the ray ten, obſolete, ſubtrifid. *Seeds* with very broad margins, naked. *Down* none. *Recept.* naked.

SPECIES.

1. Hippia integrifolia. *Annual Hippia.*
Lin. ſyſt. 795. *ſuppl.* 389. *Ait. hort. kew.* 3. 278.
Sphæranthus africanus. *Burm. ind.* 185. *t.* 60. *f.* 2.
Hiſpid, erect, leaves ovate, ſerrate, five-nerved, racemes terminating.

2. Hippia minuta. *Minute Hippia.*
Lin. ſyſt. 795. *ſuppl.* 389.
Herbaceous, procumbent, creeping, ſmooth, leaves pinnate, peduncles axillary, one-flowered.

3. Hippia fruteſcens. *Shrubby Hippia.*
Lin. ſyſt. 795. *ſuppl.* 390. *mant.* 291. *ſyſt. ed.* 13. 661. *Reich.* 3. 938. *Gærtn. fruct.* 2. 390. *Ait. hort. kew.* 3. 278.
Eriocephalus, pectinifolius. *Lin. ſyſt. ed.* 12. 579.]
Tanacetum fruteſcens. *Lin. ſpec.* 1183. *hort. cliff.* 398. *Berg. cap.* 243. *Mill. dict. n.* 4. *Comm. hort.* 2. 201. *t.* 101.
Shrubby, villoſe, leaves pinnatifid, flowers corymbed.

DESCRIPTIONS, &c.

[1. This has the flowers of Hippia, with the herb of Urtica. Native of the Eaſt-Indies[d]. Introduced in 1777, by Monſ. Thouin[e].

2. Stems procumbent, jointed, putting out rooting fibres at every joint. Leaves alternate, of the ſame form as in the third ſort; at the joints oppoſite, or frequently in threes: petioles dilated at the baſe, ſtem-claſping. Peduncles bent down, filiform, longer than the leaves. Flowers ſmall. Calyx ſimple, ſeven-leaved, with ovate-oblong ſcales. Florets of the ray fertile; of the diſk barren, few. Seeds of the ray obovate, longitudinally margined on each ſide, bifid at the tip. Receptacle naked. Found in South America by Mutis[d].]

3. Stem ſhrubby, eight or ten feet high, ſending out branches on every ſide the whole length. Segments of the leaves lanceolate, entire, blunt. The flowers are produced in ſmall roundiſh bunches at the ends of the branches; they are of a ſulphur colour,

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[a] Swartz. [b] Jacquin. [c] Swartz. [d] Linn. ſuppl. [e] Hort. kew.

and appear in may, but there is a ſucceſſion of flowers on the ſame plant great part of the ſummer.

[Scales of the calyx oblong, preſſed cloſe, membranaceous at the edge. The female corollets are continuous with the outer integument of the ſeed, exactly as in Tarchonanthus, and not ſeparate from it. Receptacle flattiſh, naked, with little depreſſed teats, having a hollowed dot in the middle, ſcattered over it. Seeds in the circumference only, elliptic, with a point at top formed by the dried corollet, narrowed towards the baſe, concavo-convex, extenuated into a ſort of wing at the ſides, pale and bald[f]. Native of the Cape of Good Hope. Cultivated by Mr. Miller in 1731[g].

Linneus originally made this a ſpecies of *Tanacetum*, when he publiſhed the twelfth edition of the Syſtema (1767) the ſtructure of the fructification appeared to him to be ſo nearly allied to *Eriocephalus*, as ſcarcely to merit a ſeparate genus. In 1771, however, when the Mantiſſa was printed, he thought that it approached nearer to Iva than Tanacetum, but was diſtinct from both, and gave it the name of *Hippia*.]

PROPAGATION AND CULTURE.

3. The ſeeds rarely ripen in England; but it is eaſily propagated by cuttings, planted in a bed of loamy earth, during any of the ſummer months. Shade them from the ſun until they have taken root, and refreſh them frequently with water. Take them up with balls of earth about their roots, plant them in pots, and place them in a ſhady ſituation until they have taken new root; then remove them to a ſheltered place, among other hardy exotics, and in october put them into ſhelter. This plant, requiring only protection from froſt, muſt not be too tenderly treated.

HIPPOCASTANUM. See *Æſculus*.

HIPPOCRATEA. (*So named by Plumier in memory of Hippocrates the famous Greek Phyſician and father of Medicine.*)

Lin. gen. n. 54. *Reich.* 60. *Schreb.* 73. *Jacqu.* 9. *Juſſ.* 251.—Coa. *Plum.* 35.

Claſſ. 3. 1. Triandria Monogynia.

Nat. order of *Acera*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-parted, very ſmall: *leaflets* roundiſh, ſpreading, incumbent, ſmaller than the corolla.

COR. *Petals* five, ovate, ſpreading, permanent, excavated at the tip, villoſe.

STAM. *Filaments* three, contiguous to the germ and ſtyle, awl-ſhaped, reflex at the tip. *Anthers* roundiſh, with a tranſverſe groove.

PIST. *Germ* roundiſh. *Style* three-ſided, awl-ſhaped, longer than the ſtamens. *Stigma* blunt.

PER. *Capſules* three, obcordate or elliptic, compreſſed, large, with two-valved cells; valves keeled and compreſſed.

SEEDS in fives or ſixes, oblong, with a membranaceous wing; at firſt ſoft, but afterwards hardening like nuts, with oblong kernels.

ESSENTIAL CHARACTER.

Cal. five-parted. *Pet.* five. *Capſ.* three, obcordate or elliptic.

SPECIES.

1. Hippocratea volubilis.
   Lin. ſpec. 50. *ſyſt.* 83. *Reich.* 1. 96. *hort. cliff.* 484. *Swartz obſ.* 28. *prodr.* 17.
   H. ſcandens. *Jacqu. amer. t.* 9. *pict.* 10. *t.* 12.
   Coa ſcandens. *Plum. gen.* 8. *ic.* 88.
   [*Racemes corymbed, leaves ovate-lanceolate, ſerrate.*
2. Hippocratea comoſa.
   Swartz prodr. 17.
   Bejuco pendulus, flor. paniculatis. *Loeſl. itin.* 314.
   Panicles comoſe, peduncles multifid, capillary, leaves ovate, acuminate, entire.

DESCRIPTIONS, &c.

1. This is a ſcandent plant (not twining, whence Linneus called it volubilis); Jacquin therefore changed the name to ſcandens.] Mr. Miller ſays it grew with him to the height of eight or ten feet, twining round ſtakes with very ſlender ſtalks.

[Branches ſubdivided, bent down, with oppoſite, rigid, arched, ſpreading branchlets. Leaves petioled, oppoſite, blunt, ſtiffiſh, ſmooth. Racemes terminating, with oppoſite racemelets; flowers terminating, ſubſeſſile, crowded, greeniſh white, minute. Capſules an inch long. Seeds compreſſed, dry, in the other ſort as big as nuts[a].

Native of Carthagena in New Spain, and ſeveral of the Weſt-India iſlands.] Mr. Miller had it by Mr. Robert Millar from Campeachy. [Swartz ſays it flowers in ſpring. Jacquin ſaw it flowering both in april and december, and gathered the fruit in july. He informs us, that in the dry ſeaſon, when all the trees loſe their leaves, this plant, with the Capers and a few others, continue flouriſhing.

2. Native of Hiſpaniola.

PROPAGATION AND CULTURE.

1. It is propagated by ſeeds brought from South-America or the Weſt-Indies. Jacquin informs us that they corrupt very ſoon, and that therefore we can hardly expect to raiſe plants from ſeeds ſent to Europe. If ſo, they ſhould be ſown whilſt freſh, and ſent over in pots or tubs.] Mr. Miller, however, raiſed ſeveral plants from ſeed, which lived two years, but did not flower. He thinks that they were rotted by having too much wet, and recommends the giving them little water in winter. They are very tender, and muſt be kept conſtantly in the bark-bed in the ſtove.

HIPPOCREPIS. (Ιππου κρηπις, *Horſe-ſhoe, from the form of the legume or pod.*)

Lin. gen. n. 885. *Reich.* 958. *Schreb.* 1200. *Juſſ.* 361.—Ferrum equinum. *Tournef.* 225.

Claſſ. 17. 4. Diadelphia Decandria.

Nat. order of *Leguminoſæ* or *Papilionaceæ*.

GENERIC CHARACTER.

CAL. *Umbel* ſimple. *Perianth* one-leafed, five-toothed (the upper toothlets joined, and leſs divided), permanent.

COR. Papilionaceous: *banner* heart-ſhaped, with a claw the length of the calyx: *wings* ovate-oblong, blunt: *keel* lunulate, compreſſed.

STAM. *Filaments* diadelphous (ſimple and nine-cleft) aſcending. *Anthers* ſimple.

PIST. *Germ* ſlender, oblong, ending in a ſubulate, aſcending *Style*. *Stigma* very ſimple.

PER. *Legume* compreſſed and membranaceous, very long, curved inwards, one of the ſutures many times cut almoſt to the top into roundiſh ſinuſes; and hence conſiſting of ſeveral *joints*, obtuſely triangular, connected by the upper ſuture.

SEEDS ſolitary in each joint, oblong, incurved.

OBS. *The eſſential character conſiſts in the horſe-ſhoe form of the legume.*

ESSENTIAL CHARACTER.

Legume compreſſed, ſeveral times emarginate along one of the ſutures, curved.

SPECIES.

1. Hippocrepis uniſiliquoſa. *Single-podded Horſe-ſhoe Vetch.*
   Lin. ſpec. 1049. *ſyſt.* 670. *Reich.* 3. 496. *hort. cliff.* 364. *upſ.* 233. *Sauv. monſp.* 236. *Gron. orient. n.* 229. *Mill. fig. t.* 278. *f.* 1. *Allion. pedem. n.* 1250.
   Ferrum equinum. *Lob. adv.* 403. *Ger.* 1056. *f.* 3. *emac.* 1235. *f.* 8. *Raii hiſt.* 930.—majus. *Park. theat.* 1091. *f.* 1.—ſiliqua ſingulari. *Bauh. pin.* 349. *Garid. t.* 114. *Mor. hiſt. ſ.* 2. *t.* 10. *f.* 1.—vulgare. *Col. ecphr.* 1. 302. *t.* 300. *Rivin. tetr. t.* 98.—fil. ſolitariis lunatim exciſis. *Hall. helv. n.* 392.
   Sferra cavallo. *Cæſalp. ſyſt.* 249.
   Legumes ſeſſile, ſolitary, ſtraight.
2. Hippocrepis multiſiliquoſa. *Many-podded Horſe-ſhoe Vetch.*
   Lin. ſpec. 1050. *Reich.* 3. 496. *hort. cliff.* 364. *upſ.* 233. *Sauv. monſp.* 239. *Villars dauph.* 3. 400. *Ait. hort. kew.* 3. 60. *Mill. fig. t.* 278. *f.* 2. *Allion. pedem. n.* 1251.

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[f] Gærtner.

[g] Hort. kew.

[a] Swartz.

Ferrum equinum ſiliqua multiplici. *Bauh. pin.* 346. —polyceraton. *Col. ecphr.* 1. *t.* 300. *Park. theat.* 1091. *n.* 3.

Legumes peduncled, crowded, circular, ſmooth, lobed on the outer margin, leaves and calyxes ſmooth.

[3. Hippocrepis balearica. *Shrubby Horſe-ſhoe Vetch.* *Lin. ſyſt.* 671. *Jacqu. ic. miſcell.* 2. 305. *Ait. hort. kew.* 2. 61.

Legumes peduncled, crowded, ſmooth, lobed on the outer margin, leaves and calyxes ſomewhat hairy, ſtems ancipital.]

4. Hippocrepis comoſa. *Tufted Horſe-ſhoe Vetch.* *Lin. ſpec.* 1050. *ſyſt.* 671. *Reich.* 3. 496. *mant.* 445. *hort. cliff.* 364. *Hudſ. angl.* 321. *Wither. arr.* 783. *Relh. cant. n.* 531. *Engl. bot. t.* 31. *Scop. carn. n.* 915. *Pollich pal. n.* 693. *Neck. gallob.* 310. *Jacqu. auſtr.* 5. 14. *t.* 431. *Villars dauph.* 3. 399. *Allion. pedem. n.* 1252. *Krock. ſileſ. n.* 1191.

Ferrum equinum ſiliquis umbellatis undulatis. *Hall. helv. n.* 391.—germanicum ſil. in ſummitate. *Bauh. pin.* 346. *Raii hiſt.* 930. *ſyn.* 325.—comoſum. *Col. ecphr.* 1. 302. *t.* 301. *Park. theat.* 1091. *n.* 4. *Rivin. tetr. t.* 97. *Mor. hiſt. ſ.* 2. *t.* 10. *f.* 3.

Ornithopodio affinis, &c. *Bauh. hiſt.* 2. 348. 1.

Legumes peduncled, crowded, arched, rugged, ſinuated on both margins.

[5. Hippocrepis barbata. *Bearded Horſe-ſhoe Vetch.* *Lour. cochinch.* 453.

Legumes ſtraight, ſpike oblong, terminating.

DESCRIPTIONS, *&c.*

Theſe are ſmall herbaceous plants, with unequally pinnate leaves; and ſmall ſtipules. Peduncles axillary and terminating, one or many-flowered, in umbels. Corollas, except the laſt, yellow. Claws of the petals as long as, or longer than the calyx.]

1. This is an annual plant, which ſends from the root ſeveral trailing ſtalks a foot long, that divide upwards into ſmaller branches. Leaves pinnate, compoſed of four or five pairs of narrow ſmall leaflets, terminated by an odd one, which are obtuſe, and indented at their ends; from the wings of the ſtalk come out ſingle flowers, which are yellow, and ſucceeded by ſingle pods ſitting cloſe to the ſtalks, which are about two inches long, and a third of an inch broad, bending inwards like a ſickle, and divided into many joints ſhaped like a horſe-ſhoe. This flowers in june and july, and the ſeeds ripen in the autumn, ſoon after which the plants decay.

[Native of Italy, and other parts of the South of Europe. Obſerved by Ray near Leghorn and Naples; and by Rauwolff near Tripoli.—It was cultivated here by Gerarde in 1596; and ſooner, namely in 1570, according to Lobel[a].]

2. This is alſo an annual plant, with trailing ſtalks like the preceding, to which it has great reſemblance; but the flowers of this are produced upon long, axillary peduncles. They are ſmall, yellow, and many cluſtered together. Pods narrower than thoſe of the preceding ſort, more incurved, and the outer border divided into lobes. It flowers and ripens its ſeeds about the ſame time with that.

[Native of the South of Europe. Cultivated in 1739, by Mr. Miller[b].

3. Root ſhort, woody, the thickneſs of a finger. Stems aſcending, or rather procumbent, ſhrubby and perennial at bottom. Leaves pinnate, ſmooth; leaflets about eight on each ſide, with an odd one, oblong, quite entire, blunt, with a ſcarcely conſpicuous point, ſeſſile. Peduncles round, ſlightly ſtriated, ſmooth and long, terminating in a many-flowered umbel, as in *H. comoſa.* The flowers have a ſmall degree of ſweetneſs. Calyx pale green, looſe, bilabiate half way; upper lip ſtraight and bifid half way; lower three-toothed, the two lateral teeth aſcending, all acuminate, and almoſt of the ſame height. Corolla yellow: banner rounded, quite entire, ſtriated, aſcending at a right angle from a long channelled claw, with the edges revolute; wings obovate, very blunt, wide, almoſt the length of the banner; keel paler, ſickle-ſhaped, ſhorter than the wings, aſcending, acuminate, with a very ſlender bifid claw. Legumes oblong, blunt, ſtraightiſh or a little incurved, once, twice, or thrice ſinuated on the upper future, ſmooth and browniſh. Seeds ſhining, brown, cylindric, bowed, blunt[c].

Native of Minorca. It flowers in may and june, and was introduced in 1776, by Monſ. Thouin[d].

Murray obſerves, that it ſo reſembles H. comoſa, as to make it difficult to find any limit between them[e].

4. Root perennial, thick, woody, fibrous, yellow on the outſide, white within. The whole plant is ſmooth. Stems trailing, aſcending, grooved, from two to nine inches long, much branched. Leaves alternate, frequently coming out in bundles from the tops of the younger branches, the larger ones ſix inches long, and ſcarcely an inch broad, unequally pinnate: leaflets four or five pairs, ſometimes ſix, ſeldom more, oppoſite (ſometimes not quite ſo), ovate (according to Linneus, oval-linear) retuſe, toothed (Pollich ſays, quite entire), having a very ſhort reddiſh ſpinule at the end, bright glaucous green underneath, ſubpetioled; the largeſt are near half an inch long, and two lines wide. Stipules in pairs, awl-ſhaped, reddiſh, as it were decurrent. Peduncles axillary, round, grooved, from two to five inches long, two or three from the upper axils, and one terminating. Flowers ſix to eight or ten, diſpoſed in a circle round the top of the peduncle, after flowering bent down; pedicels ſlightly hairy, very ſhort, with a ſmall, ovate, white, bifid bracte at the baſe of each. Calyx ſmall, ſtriated, ſlightly pubeſcent; teeth ſhort, the two upper diſtant from the lower, ſpreading, leſs deeply divided. Corolla yellow: ſtandard ovate, blunt, ſmooth, reflex at the end, and along the edges, marked with brown veins, four lines long, and rather more than two lines wide, with a long gaping claw at right angles with the border; (Linneus deſcribes it as ſomewhat arched, ſtriated underneath, not bent back at the edges, only at the baſe, which being retuſe, there ſeems to be a pore as it were on each ſide:) wings ovate, blunt, a little longer than the keel, the ſame length with the ſtandard, (or a little ſhorter), more than a line in width, with narrow claws cloſe to the keel, and enfolded with it: keel bluntiſh, whitening with age, arched, with a double, narrow claw. Legumes about an inch long, compreſſed, lobed on both ſides, the lower future having about eight ſinuſes[f].

In German *Hufeiſenpflanze.* In Dutch, *Hoefyzer.* In Daniſh, *Heſteſkoe.* In Swediſh, *Hatſko.* In French, *Fer-à-cheval.* In Italian, *Ferro di cavallo.* In Spaniſh, *Hierba de la Herredura, Herradura de caballo.* In Portugueze, *Ferradurina, Esferro cavallo.*

Native of Germany, Italy, France, Auſtria and England, in calcareous ſoils; flowering from april to july.

5. Stem ſuffruticoſe, four feet high, upright, round. Leaves ovate, quite entire, ſmooth, ternate, the middle leaflet largeſt. Flower purple, terminating in an oblong denſe ſpike. Legume peduncled, upright, flat, bearded, the outer future ſeveral times and deeply emarginate. Seeds ſquare-kidney-ſhaped, ſmall, compreſſed. Native of Cochinchina[g].]

PROPAGATION AND CULTURE.

Theſe plants are propagated by ſeeds, which ſhould be ſown in the autumn, where the plants are deſigned to remain; and when the plants come up, they muſt be kept clean from weeds, and thinned where they are too cloſe, which is all the culture they require. The two annual ſorts will decay in the autumn after they have perfected their ſeeds, but the roots of the third will continue two or three years, provided they are not in too good ground.

[The third ſort muſt be kept in the green-houſe, and the fifth has not been introduced in Europe.

HIPPOGROSTIS. See *Panicum.*]

HIPPOLAPATHUM. See *Rumex.*

HIPPOMANE. (Ἱππομανης, *the name of a plant ſuppoſed to make horſes furious; from* ιππος, *a horſe, and* μανια, *madneſs.*

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[a] Hort. kew.

[b] Ibid.

[c] Jacquin.

[d] Hort. kew.

[e] Syſt.

[f] Pollich, Linn. Relh. Woodw. Mſs.

[g] Loureiro.

"Ἱππομανες φυτον ἐστι παρ' Αρκασι, τω δ' επι πασαι
"Και πωλοι μαινονται αν ωρεα και θοαι ιπποι."

Theocr.)

Lin. gen. n. 1088. *Reich.* 1186. *Schreb.* 1471. *Loefl. Jacqu. Juſſ.* 391.

Mancanella. *Plum.* 30.

Claſſ. 21. 8. Monoecia Monadelphia.

Nat. order of *Tricoccæ.—Euphorbiæ*, Juſſ.

GENERIC CHARACTER.

* *Male* flowers in a terminating ament.

CAL. *Perianth* one-leafed, roundiſh, bellying; with the mouth converging, emarginate.

COR. none.

STAM. *Filament* ſingle, filiform, twice as long as the calyx. *Anthers* four, roundiſh, fixed croſſwiſe to the ſides of the filament towards the tip.

* *Female* flower ſolitary, terminating, in the ſame plant.

CAL. *Perianth* three-leaved, withering: *leaflets* roundiſh, concave, blunt, converging.

COR. none.

PIST. *Germ* ovate, large. *Style* very ſhort. *Stigma* ſlightly ſeven-cleft, ſharp, reflex.

PER. *Drupe* globular, very large, one-celled, crowned with the permanent ſtigmas; or a tricoccous *capſule.*

SEED. *Nut* woody, irregular, acuminate, excavated with little pits and apophyſes, ſeven-celled, ſeven-valved: *kernels* ſolitary, roundiſh.

ESSENTIAL CHARACTER.

MALE. *Ament. Perianth*, bifid. *Cor.* none.

FEM. *Perianth* trifid. *Cor.* none. *Stigma* three-parted. *Drupe* or *Capſule* three-grained.

SPECIES.

1. Hippomane Mancinella. *Manchineel Tree.*
Lin. ſpec. 1431. *ſyſt.* 866. *Reich.* 4. 195. *hort. cliff.* 484. *Swartz obſ.* 369. *Jacqu. amer.* 250. *t.* 159. *pict.* 122. *t.* 238. *Brown. jam.* 351. 1.
Mancanilla pyri facie. *Plum. gen.* 50. *Cateſb. car.* 1. *t.* 95.
Juglandi affinis, &c. *Sloan. jam.* 2. 3. *t.* 159.
Malus americana, &c. *Comm. hort.* 1. 131. *t.* 68.
Arbor venenata Mancinello dicta. *Raii hiſt.* 1646. *Pluk. phyt. t.* 142. *f.* 4.
Leaves ovate, ſerrate, biglandular at the baſe.

2. Hippomane biglandulosa. *Gum Tree.*
Lin. ſpec. 1431. *ſyſt.* 866. *Reich.* 4. 196. *Swartz obſ.* 370.
Sapium. *Brown. jam.* 338.
Mancanilla lauri foliis oblongis. *Plum. gen.* 50. *ic.* 171. *f.* 2.
Laurifolia arbor venenata, &c. *Sloan. jam.* 1. 39.
Tithymalus arbor, &c. *Pluk. phyt. t.* 229. *f.* 8.
Leaves ovate-oblong, biglandular at the baſe.

3. Hippomane ſpinoſa.
Lin. ſpec. 1432. *ſyſt.* 866. *Reich.* 4. 196.
Mancanilla aquifolii foliis. *Plum. gen.* 50. *ic.* 171. *f.* 1.
Ilex aquifolii folio americana. *Pluk. phyt. t.* 196.
Leaves ſubovate, tooth-ſpiny.

DESCRIPTIONS, *&c.*

1. The Manchineel tree is very large in the Weſt-Indies, almoſt equalling the Oak in ſize. [Jacquin ſays, it is a lofty large tree, with a very branching ſpreading head; having ſomething the air of a Pear-tree. According to Swartz, the trunk is of a middling ſize, with a gray, even, thick, milky bark, and a hard wood which is yellowiſh, with gray or blackiſh veins. Leaves rounded at the baſe, acuminate, crenate, two inches in diameter, thickiſh, dark green, ſhining, paler underneath, milky, nerved; on petioles from twelve to fifteen lines in length, margined. Flowers in aments or ſpikes. Aments cluſtered, terminating, from one to two inches in length; males ſeveral, females few, diſtinct, inſerted at the baſe, or quite diſtinct from the males, and lateral. Male flowers three or four in an ament: common perianth one-leafed, blunt; proper two-parted, turbinate, with blunt, minute teeth. Filaments one, two, three, four, connate at the baſe, longer than the calyx: anthers roundiſh, twin. Females, perianth trifid, minute, caducous; ſtyle none, ſtigmas three, two-parted, acute, reflex. Fruit a drupe, the colour, ſize and form of an Apple, ſmooth, with a ſoft ſpongy fleſh; a ſweet ſmell, and an inſipid cauſtic taſte. Within is a nut with from three to five cells, with a ſingle ſeed in each, which is three-cornered, covered with a ſhining ſilvery ſkin, and having the taſte of a hazel nut[a].] Miller ſays, the fruit is about the ſize and ſhape of a golden Pippin, and turns yellow when ripe. [It drops from the tree in great quantities, not rotting, but drying up; and does not ſeem to be eaten by any animal, except, perhaps, by a ſpecies of crab, which reſorts to theſe trees in incredible quantities, probably rather for ſhelter than for food[b]. Dr. Patrick Browne affirms, that he has known many people who have ignorantly eat of this fruit, which they had taken for crab-apples: they generally vomited in a ſhort time, and continued to complain of a burning heat in the mouth, throat and ſtomach, for many hours after. The juice of the buds of the white Cedar is eſteemed an antidote to this poiſon, and is generally uſed with ſome ſucceſs; but oily mixtures and emulſions are the moſt effectual aſſiſtants, and ſeldom fail giving relief ſoon. He adds, that he never knew any to die by this poiſon, though he has ſeen ſome who have eat nine or ten of the apples at a time.—Long ſays, that though the green fruit may be deſtructive in conſiderable quantity, yet it may be taken in ſmall quantity without danger, and is too diſagreeable, from its acrimony, to excite any deſire of eating it. When ripe, it is too inſipid to raiſe any pleaſure. He adds, that goats, ſheep and macaws feed greedily on it, in this ſtate[c].

The firſt accounts of this tree were very much exaggerated. It was ſaid to be dangerous to ſit or lie under it, and that the rain which falls from the leaves will raiſe bliſters in the ſkin. Profeſſor Jacquin informs us, that he and his companions repoſed upwards of three hours under a Manchineel tree, without receiving any injury; and that he experienced rain dropping from the leaves to be perfectly innocent. Long alſo ſays, that the Negroes do not ſuffer any inconvenience from drops of the juice accidentally falling on their ſkin, when felling this tree, or hacking off the limbs; but that if it chance to fly into their eyes, it will give them a ſevere pain for ſeveral hours: and Jacquin affirms, from his own experience, that a drop of that milky juice, with which the whole tree abounds, falling on any part of the hand, except the palm, will immediately raiſe a bliſter.

The wood of this tree is frequently of a fine grain, and very beautifully clouded;] and, taking a fine poliſh, is much eſteemed in the Weſt-Indies for making cabinets, book-caſes, &c. It is very durable, and not ſubject to be eaten by the worm. The wood-cutters make a fire round the body of the tree before they venture to fell it, to avoid the danger of loſing their ſight by the cauſtic juice flying into their eyes. If the juice fall upon linen, it will turn it black, and on being waſhed will come into holes. If any of the ſaw-duſt happens to get into the workmen's eyes, it cauſes an inflammation; to prevent which, they generally cover their faces whilſt they are working the wood.

[The Indians are ſaid to poiſon their arrows with the juice of this tree[d]: and it exudes a gum, which has been given medicinally inſtead of Gum Guaiacum[e].

The Manchineel tree is common on the ſandy coaſts of America and the Weſt-Indies, generally growing at ſome ſmall diſtance from the ſurf. It flowers in may, and the fruit ripens in july.—Mr. Miller cultivated it here in 1739[f].

The European nations have, with little variation, adopted the Spaniſh name *Mancanilla,* which ſignifies a little apple[g].

2. This tree is from twenty to fifty feet high, with an even browniſh aſh-coloured bark. Leaves on young trees frequently a foot long, but on older ones ſhorter; they are blunt, crenate-ſerrate, of a firm ſubſtance, and bright green. Spikes terminating and lateral, cluſtered, rather to be called aments. A ſingle ament

[a] Swartz obſ.
[b] Jacquin.
[c] Jamaica, 838.
[d] Browne.
[e] Long.
[f] Hort. kew.
[g] Jacquin.

of male flowers, at the beginning of the flowering-time, ſprings among other ſmall ones, flowers and falls: thick ſcales like glands cover the ament, commonly a pair oppoſite to another pair, ovate, thick, preſſed cloſe, adnate. Perianth from the ſinus of two ſcales, tubular, irregularly four-cleft, blood red. Filaments two, connate at the baſe, reflex, longer than the calyx, blood red: anthers twin, open at the upper edge; pollen yellow, with the atoms oblong, when viewed with a glaſs appearing to have two pellucid ſtreaks. After almoſt a month, the firſt ament falling and leaving a ſcar, the ſmaller aments of the baſe are elongated and flower, producing male flowers at top, and female flowers below. The ſcales and male flowers as in the other. The females have two ſcales to each flower, embracing the germ. Calyx trifid, two ſegments above the ſcales at the ſides, the other behind. Germ ovate, faſtened to the ament behind: ſtyle three-parted: ſtigmas thick, ſimple. Capſule oblong, ſlightly three-cornered, at length tricoccous, ſmall, three-celled, three-valved. Seeds orbiculate, ſmooth, ſolitary [h].

Native of the continent of America and the Weſt-India iſlands, on mountains: flowering in march and ſeptember.

The whole tree yields a great quantity of milky juice, which becomes a reſin or gum of a thick ſticky conſiſtence, dirty colour, opaque, and of little or no ſmell: this generally ſerves for the boiling-houſe lamps, in every part of the country where the tree is frequent; and is much uſed for bird-lime. The wood is ſoft and coarſe, and not much eſteemed [i]; it is uſed, however, for making hogſhead ſtaves [k].

Sapium aucuparium of Jacquin, amer. 249. t. 158. pict. t. 237., which he ſuppoſes to be the ſame as this, ſeems to be a different plant, having longer, more acuminate, ſerrate leaves, ſubcartilaginous-beaked at the tip, with ſubſolitary ſpikes.—H. biglandulоſa of Aublet, guian. 885. is the ſame with this of Jacquin [l].]

3. This is of humbler growth, ſeldom more than twenty feet high: the leaves greatly reſemble thoſe of the common Holly, and are ſet with ſharp prickles at the end of each indenture; they are of a lucid green, and continue all the year.

Native of South America. Mr. Miller had theſe two from Dr. Houſtoun, who found this at Campeachy, and the preceding at Carthagena in New Spain.

PROPAGATION AND CULTURE.

Theſe plants are preſerved in ſome of the curious gardens in Europe, where they can never be expected to riſe to any great height, for they are too tender to live in theſe northern countries, but in ſtoves; they riſe eaſily from ſeeds, provided they are good. The ſeeds muſt be ſown upon a good hot-bed, and when the plants come up, they ſhould be each planted in a ſmall ſeparate pot filled with light ſandy earth, and plunged into a good bed of tanner's bark, treating them in the ſame way as other tender plants; but they muſt not have much wet, for theſe plants abound with an acrid milky juice, and it is certain that moſt plants which do, are ſoon killed by much moiſture: theſe plants muſt be removed into the ſtove, and plunged into the tan-bed in autumn, where they ſhould conſtantly remain, giving them very little water in winter; and in ſummer when the weather is warm, they ſhould have a good ſhare of air admitted to them, and once or twice a week refreſhed with water; by this management I have raiſed many of theſe plants to the height of five or ſix feet, which have, by their ſhining green leaves, made a pretty variety during the winter ſeaſon in the ſtove.

[HIPPOMANE. See *Hura*.

HIPPOMARATHRUM. See *Cachrys* & *Seſeli*.]

HIPPOPHAE. (Ιπποφαες *or* ιπποφυες, *the name of a ſhrub in Theophraſtus and Dioſcorides*; Hippophyes *of Pliny. It is differently written, and is derived from* ιππος, *and either* φαω *or* φυω)

Lin. gen. n. 1106. *Reich.* 1210. *Schreb.* 1509. *Gærtn. t.* 42. *Juſſ.* 75.

Rhamnoides. *Tournef.* 481.

Claſſ. 22. 4. Dioecia Tetrandria.

Nat. order of *Calycifloræ.—Elæagni*, Juſſ.

GENERIC CHARACTER.

* *Male.*

CAL. *Perianth* one-leafed, two-parted, two-valved, with the bottom entire: the parts roundiſh, blunt, concave, upright, converging at the tips, and gaping on the ſides.

COR. none.

STAM. *Filaments* four, very ſhort. *Anthers* oblong, angular, almoſt the length of the calyx.

* *Female.*

CAL. *Perianth* one-leafed, ovate-oblong, tubular, club-ſhaped, with the mouth cloven, deciduous.

COR. none.

PIST. *Germ* roundiſh, ſmall. *Style* ſimple, very ſhort. *Stigma* thickiſh, oblong, upright, twice as long as the calyx.

PER. *Berry* ſuperior, ſubglobular, one-celled.

SEED ſingle, oblong, hard, ſhining.

OBS. *Hermaphrodite flowers have ſometimes been obſerved among the males.*

ESSENTIAL CHARACTER.

MALE. *Cal.* two-parted. *Cor.* none.

FEM. *Cal.* bifid. *Cor.* none. *Style* one. *Berry* one-ſeeded.

SPECIES.

1. Hippophae Rhamnoides. *Common Sea Buckthorn.*
Lin. ſpec. 1452. *Reich.* 4. 242. *fl. lapp. n.* 372. *ſuec. n.* 906. *hort. cliff.* 454. *Gærtn. fruct.* 1. 199. *Hudſ. angl.* 431. *Wither. arr.* 1114. *Hall. helv. n.* 1603. *Fl. dan. t.* 265. *Gunn. norv. n.* 14. *Pallas. roſs.* 1. 2. 43. *t.* 18. *Allion. pedem. n.* 2120. *Du Roi harbk.* 1. 306. *Duham. arb.* 1. 211. *t.* 49.
Oſyris rhamnoides. *Scop. carn. n.* 1216.
Rhamnus ſalicis folio anguſto, fructu flaveſcente. *Bauh. pin.* 477. *Raii hiſt.* 1592.
R. 2. *Cluſ. hiſt.* 1. 110. 1. *Ger. emac.* 1334. 2. *Dod.* 755. 1.
R. primus Dioſcoridis Lobelio, (*obſ.* 598. 3. *ic.* 2. 180. 1.) ſ. littoralis. *Park. theat.* 1006. 1.
R. ſ. Oleaſter germanicus. *Bauh. hiſt.* 1. 6. 33. *Cord. hiſt.* 3. *c.* 24. *p.* 186.
Rhamni ſpecies. *Camer. epit.* 81.
R. alterum genus. *Cæſalp.*
Hippophae Dioſcoridis forte. *Col. ecphr.* 1. 37.
Rhamnoides folio ſalicis, baccis leviter flaveſcentibus. *Tournef. cor.* 53. *Raii ſyn.* 445.
Leaves lanceolate.

[2. Hippophae canadenſis. *Canadian Sea Buckthorn.*
Lin. ſpec. 1453. *Reich.* 4. 243.
Leaves ovate.]

DESCRIPTIONS, &c.

1. The Sea-Buckthorn or Sallow-Thorn riſes with ſhrubby ſtalks eight or ten feet high, ſending out many irregular branches, which have a brown bark ſilvered over. Leaves narrow or linear-lanceolate, about two inches long, and a quarter of an inch broad in the middle, of a dark green on their upper ſide, but hoary on their under, with a prominent midrib; the borders are reflexed, as in the Roſemary; they are placed alternate on every ſide the branches, and ſit cloſe to them; [there are little, cluſtered, peltate, ciliate, pale ſcales ſcattered over them [a]. The branches ſpread wide, are ſtraight, ſtiff, and thorny at the ends; the leſſer ones numerous, ſcattered, ſhort and ſpreading [b]: Flowers ſolitary, appearing before the leaves, generally abortive, unleſs the ſhrub grows in its natural ſituation. Male flowers below the leaves, between a branch and a one-valved, permanent bud, the length of the flower. The female flowers are ſeſſile in the axils of the lower leaves [c]. The male flowers are ſubſeſſile, ſomewhat ſpiked, diſpoſed in four rows along the leſſer branches; the peduncles are cylindrical: bractes oblong, concave, ſpreading, as long as the calyx, reddiſh brown, ſomewhat fleſhy, falling off with the flowers, ſprinkled with ſcales ſimilar to thoſe on the leaves, circular, membranous and reddiſh brown. The calyx has alſo ſcales ſprinkled over the outſide of

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[h] Swartz.
[i] Browne.
[k] Long.
[l] Swartz.

[a] Linn. ſpec.
[b] Stokes in With.
[c] Linn. ſpec.

it. Filaments upright, inſerted in the bottom of the calyx: anthers two-celled, four-valved, browniſh yellow, after ſhedding their duſt ſtiff and angular; duſt or pollen nearly globular, angular, browniſh yellow, opaque, but when moiſtened with water globular and tranſparent [d].

The flowers come out from the branchlets of the former year. The berries are very abundant, on ſhort peduncles, ovate (or ovate-globular), mucronate with the ſtyle, yellow when ripe [e], ſucculent, ſmooth, ſprinkled here and there with callous dots; the cell is cloathed with a very thin membrane, cohering with the ſtyle. Seed oblong, attenuated below, ſomewhat compreſſed, marked on each ſide by a depreſſed longitudinal line, very ſmooth and black [f].

The berries are gratefully acid, and are much eaten by the Tartars. They are alſo the principal food of pheaſants about mount Caucaſus [g]. The fiſhermen of the gulph of Bothnia prepare a rob from them, which imparts a grateful flavour to freſh fiſh. In ſunny ſandy ſituations this ſhrub is planted for hedges; it is uſed for dyeing yellow. Kine refuſe it, goats, ſheep and horſes eat it [h].

Native of many parts of Europe on ſandy ſea coaſts. In England, near Sandwich, Deal, Folkſtone, and the iſle of Shepey in Kent; Canvey iſland in Eſſex; Cley and Sheringham cliffs, and between Yarmouth and Winterton in Norfolk; Lincolnſhire; Whitby and Lyth in Yorkſhire.

It flowers in april and may. Ray ſays, june, and Miller, july.

It varies with red berries.] Miller ſays, that he has obſerved it only with yellow berries in England, but that he had ſeen it on the ſand-banks in Holland with red berries.

[This ſhrub is named in German *Haftdorn*; in Dutch, *Duinbeſſen*; in Swediſh and Daniſh *Haftorn*; in French *Argouſſier*; in Spaniſh *Eſpino amarillo*; in Ruſſian *Rakitnik*.

2. This has the appearance of the former ſort; but the leaves are broader, only half the length, of an ovate or oblong-ovate form; on the upper ſurface they are green, with diverging hairs, in bundles, ſcarcely to be diſcerned by the naked eye: on the lower they are ſilvery with hairs and ſcales, and have ruſt-coloured dots ſcattered over them. The branches are oppoſite; and the racemes ſimple among the firſt leaves, upright, and ſhorter by half than the leaves.—Native of Canada [i].]

PROPAGATION AND CULTURE.

Theſe ſhrubs may eaſily be propagated by ſuckers from the root, taken off in autumn, and tranſplanted into a nurſery. After one year's growth, they will be fit to tranſplant where they are to remain. They may alſo be increaſed by layers, but the roots ſpread, and put up ſuch abundance of ſuckers, that there is no neceſſity to be at this trouble. There being little beauty in theſe ſhrubs, it will be ſufficient to have one or two of them in plantations.

[HIPPOPHÆSTUM. See *Centaurea Calcitrapa*.

HIPPOPODIUM. See *Buxbaumia*.]

HIPPOSELINUM. See *Smyrnium*.

[**HIPPŪRIS.** (Ιππουρις *of Dioſcorides*; Hippuris *of Pliny: from* ιππος *a horſe, and* ουρα *a tail.*)

Lin. gen. n. 11. *Reich.* 11. *Schreb.* 15. *Gærtn. t.* 84. *Juſſ.* 18. *Hellen. monogr.* Limnopeuce. *Vaill. mem. acad.* 1719. Pinaſtella. *Dill.* 168.

Claſſ. 1. 1. Monandria Monogynia.

Nat. order of *Inundatæ*. *Naiades*, Juſſ.

GENERIC CHARACTER.

CAL. a two-lobed rim, crowning the germ.

COR. none.

STAM. *Filament* one, upright, placed within the anterior lobe of the calyx. *Anther* roundiſh, compreſſed.

PIST. *Germ* oblong, inferior. *Style* one, awl-ſhaped, upright, from the hinder lobe of the calyx, longer than the ſtamen. *Stigma* ſharp.

PER. none.

SEED one, roundiſh, naked.

ESSENTIAL CHARACTER.

Cal. a two-lobed rim to the germ. *Cor.* none. *Stigma* ſimple. *Seed* one.

SPECIES.

1. Hippuris vulgaris. *Common Mare's-tail.*
Lin. ſpec. 6. *ſyſt.* 53. *Reich.* 1. 9. *Fl. lapp. n.* 1. *ſuec. n.* 2. *hort. cliff.* 3. *Gærtn. fruct.* 2. 24. *Hudſ. angl.* 2. *Wither. arr.* 2. *Lightf. ſcot.* 70. *Relh. cant. n.* 1. *Sibth. oxon. n.* 1. *Curt. lond.* 4. 1. *Pollich pal. n.* 1. *Neck. gallob.* 2. *Jacqu. vind.* 1. *Fl. dan. t.* 87. *Allion. pedem. n.* 1892. *Krock. ſileſ. n.* 2. *Villars dauph.* 2. 1.
Limnopeuce. *Cord. hiſt.* 150. *Raii ſyn.* 136. *Vaill. mem. acad.* 1719. *t.* 1. *f.* 3. *Hall. helv. n.* 1572.—vulgaris. *Scop. carn. n.* 2.
Equiſetum paluſtre brevioribus foliis polyſpermon. *Bauh. pin.* 15. *Raii hiſt.* 129.
E. pal. alterum brev. foliis. *Park. theat.* 1201. 4. *t.* 1200. 4.
Polygonum fœmina. *Matth.* 952. *Dod. pempt.* 113. *Camer. epit.* 689.
Equiſeti facie Polyg. fœm. *Bauh. hiſt.* 3. 732.
Cauda equina fœmina. *Ger.* 957. 6. *emac.* 1114. 6.
Leaves eight at a joint awl-ſhaped.

2. Hippuris tetraphylla. *Four-leaved Mare's-tail.*
Lin. ſyſt. 53. *ſuppl.* 81.
H. lanceolata. *Retz. obſ.* 3. 7. *n.* 1.
Leaves four at a joint oblong blunt.

3. Hippuris indica. *Indian Mare's-tail.*
Lour. cochinch. 16.
Cyperus dulcis. *Rumph. amb. l.* 10. *c.* 3. *t.* 3. *f.* 1.
Scape naked, root tuberous.

DESCRIPTIONS, &c.

1. Root perennial, creeping, white, jointed; the joints furniſhed with numerous capillary fibres. Stems numerous, a foot and half or more in height, upright, quite ſimple, ſmooth, ſtriated, round, jointed, ſpongy; the pith like a thread in the centre, compact, and in the roots tough. Leaves in whorls at each joint, from eight to twelve or thirteen in number, linear, ſeſſile, perfectly ſmooth and entire, acuminate, without veins, appearing hollow-dotted when magnified; thoſe under water reflex. Flowers axillary, ſeſſile, one to each leaf, in the whorls that are above water. Filament ſeated on the top of the germ, at firſt very ſhort, but on ſhedding its pollen becoming as long as the piſtil: anther two-lobed, purpliſh and rather large. Style very ſhort, naked: ſtigma tapering to a point, white and downy when magnified. Seed oblong, hard, white within, and in the centre brown, covered with a thin membrane or aril [k]. Gærtner calls it a nut, of an elliptic-globular form, on a very ſhort peduncle, ſmooth and bay-coloured: the ſhell thick, hard, white, one-celled, valveleſs: the ſeed of the ſame ſize and ſhape with the ſhell, ſoft and whitiſh.

Linneus remarks, that the flower of this plant is as ſimple as can be conceived, having neither calyx nor corolla, only a ſingle ſtamen and piſtil, and one ſeed. The ſituation alſo of the leaves, in whorls, is not uſual in European plants, except in the natural order of Stellatæ [l].

The flowers in the beginning of ſummer are moſtly hermaphrodite, but at the cloſe of it many of them are female [m].

Whilſt ſeveral botaniſts are diſcarding the claſs Gynandria from the ſyſtem, Retzius is deſirous of having this plant removed from the claſs Monandria into it, on account of the ſtamen being placed upon the germ [n].

Native of many parts of Europe, in ponds, ditches, marſhes and rivers, eſpecially where there is a depth of mud, and the froſt cannot reach the roots. In quiet waters it grows upright, in large lakes to the height of ſeveral feet; in running waters it bends with the ſtream. In ſome countries it is a troubleſome weed in rivers, and choaks up the ditches; but by abſorbing a great quantity of inflammable air it is reputed to aſſiſt in purifying the putrid air of marſhes. Gmelin ſays, that the wild-ducks in the north feed upon it.

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[d] Stokes in With.
[e] Pallas.
[f] Gærtner.
[g] Pallas.
[h] Linn.
[i] Linn. ſpec.

[k] Curtis, Relh. Linn.
[l] Linn.
[m] Curtis and Scop.
[n] Obſ. 3. p. 7. and 6. p. 18.

Goats alſo are ſaid to eat it. We do not know that it is of any other uſe. In England it is not very common; it is found however in ſeveral places in Cambridgeſhire, Oxfordſhire, Weſtmoreland, Staffordſhire, Leiceſterſhire, &c. Near London it is more rare; Blackſtone found it in Harefield river and Uxbridge moor, Hudſon in the New River near Hornſey, and Dr. Milne near Stoke Newington and Highgate. It flowers from may to auguſt. Others give april to june for the time of flowering. I never found it ſooner than may.

Gerarde calls this plant *Female Horſe-tail*, and Parkinſon *Marſh barren Horſe-tail*; Mr. Hudſon firſt named it *Mare's-tail*. In French it is *Peſſe d'eau*, which is a tranſlation of one of its old names *Limnopeuce*, lake or water Pine. In German it is *Schafthalm*, *Tannenwedel*, &c. In Dutch, *Katteſtaart*, *Paardeſtaart*. In Daniſh *Heſterumpe*, *Vand-ſtudeknæa*. In Swediſh, *Haſtvans*. In Italian, *Hippuride*.

2. This is always very diſtinct from the preceding by its only having four leaves to a whorl, and their being ſpatulate-ovate and blunt[o]. According to Retzius they are lanceolate, and the upper leaves are in fives. It has the appearance of Elatine Alſinaſtrum, and is clearly a gynandrous plant[p].

It is a native of Sweden, and was firſt diſcovered by Schulſen near Aboa in Finland.

3. This is a ſtemleſs plant, with a fibrous creeping root, having, many, roundiſh, ſcattered, ſmall, black, hairy tubers, which are eatable. Leaves awl-ſhaped, long, erect, cluſtered. Scape four feet high, very ſtraight and ſimple, round, ſtriated; within tubular, divided by many tranſverſe membranes. Spike terminating, contracted, long, upright, netted-ſcaly. Stamen and ſtyle long, equal. Stigmas two, oblong. Seed orbiculate, naked, protected by a ſcale of the ſpike.—Native of marſhes in Cochinchina[q].

Hippuris. See *Chara* and *Equiſetum*.

Hiptage. See *Gærtnera*.

Hip Tree. See *Roſa canina*.

HIRÆA. (*So named by Jacquin from Nicol. de la Hire, whoſe phyſico-botanical works are in the Memoirs of the Academy of Sciences at Paris, and four volumes of his drawings in the Imperial Library at Vienna.*)

Lin. gen. Reich. n. 623. *Schreb.* 781. *Jacqu. amer.* 137. *t.* 176. *f.* 42. Triopteris. *Juſſ.* 253.

Claſſ. 10. 3. Decandria Trigynia.

Nat. order of *Tribilatæ*. *Malpighiæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* five-leaved: *leaflets* ovate, upright, very ſmall, permanent.

Cor. *Petals* five, roundiſh, concave, with long *claws*.

Stam. *Filaments* ten, capillary (united at the baſe?); the outer ones ſhorter. *Anthers* roundiſh, upright.

Pist. *Germ* roundiſh. *Styles* three, ſimple, upright. *Stigmas* bifid, blunt, ſpreading.

Per. *Capſules* three, upright, keeled on the back; each having a ſingle ſpreading wing on the outſide at the baſe, and a double one at the tip; not gaping.

Seeds ſolitary, roundiſh.

Obs. *Too nearly allied to* Triopteris; *differing in having three two-winged capſules, inſtead of a three-celled capſule with three wings.* Swartz.

ESSENTIAL CHARACTER.

Cal. five-leaved. *Pet.* roundiſh, on long claws. *Capſ.* three-celled, with three wings (three, with two wings, one-celled, *Jacquin.*) *Seeds* two (ſolitary, *Jacqu.*)

SPECIES.

1. Hiræa reclinata.

Lin. ſyſt. 427. *Reich.* 2. 373. *Jacqu. amer.* 137. *t.* 176. *f.* 42. *pict.* 68. *t.* 260. *f.* 37.

DESCRIPTION, &c.

This is a ſmall tree, ſeldom exceeding fifteen feet in height, and dividing into round, long, ſmooth, bending and reclining branches, by which it ſupports itſelf on neighbouring ſhrubs. Bark aſh-coloured. Leaves oblong, a little broader at top, blunt at both ends, quite entire, ſmooth underneath, having ſoft, decumbent, ſcarcely conſpicuous hairs on the upper ſurface, and being from three to ſix inches inches long; the petiole has two upright briſtly ſtipules at the baſe. Common peduncles thick, very ſhort and numerous beautifully ſurround entire and very long branches, and by means of twelve ſemioval ſhort bractes, finiſh in a quadrilocular top; the partial peduncles being one-flowered, an inch long, ſolitary, and therefore four to each common peduncle. Flowers beautiful, but without ſcent, yellow, an inch in diameter.

Native of Carthagena in New Spain, in woods; flowering in june, and ripening the ſeeds in ſeptember[r].

Hirculus. See *Saxifraga*.

HIRTELLA. (*Dimin. from* hirtus; *ſo named from the hairineſs of the branches.*)

Lin. gen. n. 280. *Reich.* 299. *Schreb.* 388. *Jacqu. amer.* 8. *Juſſ.* 340.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Roſaceæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, five-parted: *parts* ſubovate, reflex, unequal, permanent.

Cor. *Petals* five, roundiſh, concave.

Stam. *Filaments* three or five, briſtle-ſhaped, flattiſh very long, permanent, at length rolled in ſpirally. *Anthers* orbiculate.

Pist. *Germ* roundiſh, compreſſed and declining, villoſe. *Style* filiform, almoſt the length of the ſtamens, ariſing from the depreſſed ſide of the germ. *Stigma* ſimple.

Per. *Berry* oval, broader at top, a little compreſſed, obſcurely-three-cornered, at whoſe baſe in front lie a villoſe germ and ſtyle.

Seed one, large, of the ſame form with the pericarp.

ESSENTIAL CHARACTER.

Pet. five. *Filam.* very long, permanent, ſpiral. *Style* lateral. *Berry* one-ſeeded.

SPECIES.

1. Hirtella americana.

Lin. ſyſt. 242. *ſpec.* 290. *Reich.* 1. 563. *hort. cliff.* 17. *Swartz prodr.* 151. *obſ.* 94. *Aubl. guian.* 246. *t.* 98.

Leaves ovate-lanceolate, branchlets hirſute, racemes upright ſimple, flowers five-ſtamened.

2. Hirtella triandra.

Swartz prodr. 50.

H. americana. *Jacqu. amer. t.* 8. *pict. t.* 11.

Leaves oblong acuminate, racemes compound looſe, flowers three-ſtamened.

3. Hirtella paniculata.

Swartz prodr. 51. *Vahl ſymb.* 2. 43. *t.* 31.

Leaves elliptic ſhining with hairy ſubcoriaceous racemes upright, flowers five-ſtamened.

DESCRIPTIONS, &c.

1. This is a tree, with a trunk from twenty-five to thirty feet in height, and a ferruginous bark. Branches wand-like, ſcattered, ſpreading, ſubdivided, round, hirſute: branchlets round, hirſute. Leaves on ſhort petioles, alternate, ſmooth, entire, acuminate, from three to ſix inches long. Stipules in pairs, lanceolate, at the baſe of the petioles, deciduous. Racemes axillary, hirſute, ferruginous. Flowers alternate, peduncled, ſomewhat rough with hairs. Petals rounded, with claws, emarginate, blueiſh. Filaments five, all fertile, placed on one ſide, long, whitiſh blue: anthers roundiſh. Germ rounded, villoſe: ſtyle lateral: ſtigma blunt. Berry obovate, compreſſed, hairy-rough, dry. Native of Cayenne, where it is called by the French Bois de Gaulette[s]. Introduced in 1782, by Mr. Alexander Anderſon[t].

2. This is a branching tree, twenty feet high, frequently leſs. Leaves quite entire, ſhining, on ſhort petioles, alternate, five inches long. Racemes terminating, villoſe, half a foot in length. The flowers have no ſcent; the ſtamens and ſtyle are placed croſswiſe. The calycine ſegments are ovate-roundiſh, concave, equal, reflex. Petals ſpreading, equal, deciduous, white. Filaments three, filiform, flatted at the baſe, upright, very long, permanent, finally rolled in ſpirally: anthers roundiſh. Germ roundiſh, villoſe,

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[o] Linn. ſuppl.

[p] Obſ. 3. p. 7.

[q] Loureiro.

[r] Jacquin.

[s] Swartz.

[t] Hort. kew.

compreſſed on the ſide, without any ſtamen cloſe to it: ſtyle filiform, hirſute at bottom, almoſt the length of the ſtamens: ſtigma ſimple [u].—Native of the Weſt Indies, Martinico, Jamaica, Domingo: flowering in april and may.

3. Branches round, with a purpliſh bark, rough-haired at top. Leaves on very ſhort petioles, alternate, ſpreading, abundant, an inch and half long, quite entire with a ſmall point, veined, hairy along the veins, of a different colour underneath. Stipules awl-ſhaped, very rough-haired. Racemes axillary, from upright ſpreading, ſolitary, longer than the leaf; extremely hirſute. Pedicels copious, alternate, ſolitary or ſometimes but ſeldom two together. Bractes ovate, frequently two on the pedicel, hirſute on the outſide, and others lanceolate, at the baſe of the pedicel. Calyx hirſute on the outſide, coloured, tomentoſe within, ſomewhat ſilky. Filaments five, long. Style hirſute at the baſe.—Native of Cayenne, where it was found by Rohr [x].]

Hirundinaria. See *Aſclepias* and *Lyſimachia Nummularia*.

HOEING is beneficial to plants: 1ſt, for deſtroying weeds; 2dly, becauſe it diſpoſes the ground better to imbibe the night dews, keeps it in a conſtant freſhneſs, and adds a vigour to the plants and trees, whoſe fruit by that means, becomes better conditioned than otherwiſe it would be.

This operation is performed by the hand, with an inſtrument called a Hoe, which is well known to every gardener. There are ſeveral ſizes of theſe; the ſmalleſt, which is called an Onion Hoe, is not more than three inches broad, and is uſed for hoeing Onions; not only to cut up the young weeds, but alſo to thin the Onions, by cutting up all thoſe which are too cloſe. The next ſize is near four inches and a half broad, and is called a Carrot Hoe; this is uſed for hoeing Carrots, or any other crop which requires the ſame room as thoſe. The largeſt ſize is about ſeven inches broad, and is frequently called a Turnep Hoe, being uſed for hoeing Turneps; but this is generally uſed by the kitchen-gardeners, for hoeing between all their crops which are planted out, or ſtand ſo far aſunder as to admit an inſtrument of this breadth to paſs between the plants. Beſides theſe ſorts of Hoes, which are contrived to draw towards the perſon who uſes them, there is another of a different form, which is called a Dutch Hoe; this is made for the perſon who uſes it to puſh from him, ſo that he does not tread over the ground which is hoed. This is a very proper inſtrument for ſcuffling over the ground to deſtroy weeds, in ſuch places where the plants will admit of its being uſed, and a perſon will go over a much greater ſpace of ground in the ſame time with one of theſe inſtruments, than with the common Hoe; but this inſtrument is not ſo proper for hoeing our crops, ſo as to leave the plants at a proper diſtance, nor will it penetrate the ground ſo far; therefore the other ſort of hoe is to be prefered to this, becauſe it ſtirs the ground and looſens the ſurface, whereby the dews penetrate the ground, and thereby promote the growth of the plants. Of late years there has alſo been another inſtrument introduced in the field culture, called the Horſe Hoe, which is a ſort of plough with the ſhear ſet more inclining to a horizontal poſition than the common plough.

The utility of the Horſe-hoeing huſbandry, is firſt, in proportioning the number of plants which the ground is ſuppoſed capable of nouriſhing properly. The ſecond is, by frequent ſtirring the ſurface of the land, all weeds which rob the crop of its nouriſhment are deſtroyed, and the clods of earth are hereby divided and pulverized, ſo that the roots of the plants can more eaſily penetrate them, and ſearch their proper food; beſides the dews and moiſture are eaſily imbibed in the looſe ground, whereby the plants receive a greater ſhare of nouriſhment.

There are few perſons who properly conſider of what conſequence the ſtirring and breaking the ſurface of the ground is to all crops growing therein. I have frequently made trial of this, when the crop has been ſo bad as to be thought not worth ſtanding, which has been occaſioned by the great quantity of rain which has fallen, whereby the ſurface of the ground has been ſo cloſely bound, as that the plants could find no nouriſhment, but have changed their uſual verdure to a purple colour, and have made no progreſs; but upon hoeing the ground and breaking the clods, the plants have put out new roots, and have flouriſhed exceedingly. From many repeated trials of this kind I can affirm, that if the Wheat in general was ſowed in rows, ſo as that the plough may be brought between them in the ſpring, to looſen the ground, which by the winter's rains may have been too cloſely bound, the crop would more than double what is the common produce. And by this method of huſbandry I can affirm, that all crops will be ſo much improved, as to doubly anſwer the difference of expence, and leſs than a ſixth part of the ſeed will be enough for the ſame ſpace of ground. The common ſwing plough will anſwer all intents of Horſe-hoeing.

[HOFFMANNIA. (*So named by Swartz, in memory of Maurice Hoffmann, profeſſor of botany at Altorff; author of* Florilegium Altorfinum, 1660.)

Lin. gen. Schreb. (788) *n.* 1719. *Swartz prodr.* 30.

Claſſ. 4. 1. Tetrandria Monogynia.

Nat. order of *Stellatæ*. *Rubiaceæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, four-toothed, ſuperior: *teeth* upright, ſharp.

Cor. monopetalous, ſalver-ſhaped: *tube* ſo ſhort as to be next to none: *border* four-parted; *parts* lanceolate, ſpreading.

Stam. *Filaments* none. *Anthers* four, fixed to the baſe of the tube, linear-ſubulate, upright, preſſed cloſe to the ſtyle.

Pist. *Germ* inferior, oblong-four-cornered. *Style* ſubulate, the length of the ſtamens. *Stigma* blunt, ſcarcely emarginate.

Per. *Berry* oblong, ſlightly four-cornered, crowned, two-celled, two-valved.

Seeds numerous, roundiſh, fixed to receptacles in each cell.

ESSENTIAL CHARACTER.

Cal. four-toothed. *Cor.* ſalver-ſhaped, four-parted. *Filam.* none. *Berry* two-celled, many-ſeeded.

SPECIES.

1. Hoffmannia pedunculata.
Swartz prodr. 30.
Native of Jamaica.

Hog Plum. See *Spondias*.

Hog's-Fennel. See *Peucedanum*.

Hogweed. See *Boerhavia*, *Heracleum*, *Polygonum aviculare*.]

HOLCUS (*of Pliny: from* ολκος, *tractus, a furrow, &c.*)

Lin. gen. n. 1146. *Reich.* 1252. *Schreb.* 1565. *Mieg. act. helv.* 8. *t.* 4. *Gærtn. t.* 80. *Juſſ.* 30. Sorgum. *Mich.*

Claſſ. 23. 1. Polygamia Monoecia.

Nat. order of *Gramina* or *Graſſes*. *Gramineæ*, Juſſ.

GENERIC CHARACTER.

* *Hermaphrodite* flowers, ſeſſile.

Cal. *Glume* one-flowered, two-valved, ſubovate, obtuſe, coriaceous, awnleſs: *outer valve* large, concave, ſlightly three-toothed at the tip, embracing the *inner valve*, which is oblong, rolled up on the ſides.

Cor. *Glume* two-valved, tender, villoſe, leſs than the calyx: *outer valve* ſmalleſt, placed within the inner calycine valve, in moſt of the ſpecies bifid at the tip, and awned: *awn* from the cleft of the glume, long or ſhort, jointed, twiſted; ſometimes none.

Nectary three-leaved; two of the leaflets cartilaginous, truncate; the third oppoſite, ovate or lanceolate, villoſe.

Stam. *Filaments* three, capillary, very tender. *Anthers* oblong, bifid.

Pist. *Germ* ovate. *Styles* two, capillary, diverging. *Stigmas* oblong, feathered.

Per. none; but the glumes of the corolla and calyx are rolled about the ſeed and incloſe it.

Seed ſolitary, ovate, covered, armed with the awn of the corolla, which however eaſily falls off.

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[u] Jacquin.

[x] Vahl.

* *Male* flowers peduncled, ſolitary or in pairs accompanying the hermaphrodite, ſmaller.

Cal. *Glume* two-valved: *valves* ovate-lanceolate, ſharpiſh, chaffy, awnleſs; the *outer valve* concave, embracing the inner, which is narrower.

Cor. *Glume* two-valved, ſmaller, more tender: *outer valve* within the inner valve of the calyx, ſhorter, two-toothed, awnleſs; the *inner valve* doubled up on the edges.—*Nectary* as in the Hermaphrodites.

Stam. *Filaments* three, as in the Hermaphrodite.

Pist. *Germ* ſmall, angular, abortive. *Styles* two, briſtle-ſhaped. *Stigmas* none.

ESSENTIAL CHARACTER.

Herm. *Cal.* Glume one or two-flowered. *Cor.* Glume awned. *Stam.* three. *Styles* two. *Seed* one.

Male. *Cal.* Glume two-valved. *Cor.* none. *Stam.* three.

SPECIES.

[1. Holcus ſpicatus. *Spiked Holcus.*
Lin. ſpec. 1483. *Reich.* 4. 306.
Panicum indicum. *Dod. pempt.* 507.—ſpica obtuſa cærulea. *Bauh. pin.* 7. *theat.* 522.
P. americanum. *Cluſ. hiſt.* 2. 215.
Gramen alopecuroides indicum maximum. *Raii hiſt.* 1908.
Glumes two-flowered awnleſs, flowers in pairs involucred with a pencil, ſpike ovate-oblong.

2. Holcus bicolor. *Two-coloured Holcus.*
Lin. ſyſt. 905. *Reich.* 4. 307. *mant.* 301. *hort. cliff.* 468. *Gærtn. fruct.* 2. *p.* 3.
H. Sorghum. *Mieg. in act. helv.* 8. 129. *t.* 4. *f.* 4.
Milium arundinaceum, ſubrotundo ſemine, Sorgo nominatum. *Bauh. pin.* 26. *Mor. hiſt.* 3. 196. *ſ.* 8. *t.* 5. *f.* 7. referred by Gærtner to n. 6.
Glumes ſmooth black, ſeeds globular white awned.]

3. Holcus Sorghum. *Indian Holcus* or *Millet.*
Lin. ſpec. 1484. *ſyſt.* 905. *Reich.* 4. 307. *mant.* 500. *hort. upſ.* 301. *Gron. orient. n.* 325. *Gærtn. fruct.* 2. *p.* 2. *Mieg. act. helv.* 8. 125. *t.* 4. *f.* 3. *Thunb. jap.* 42.
H. Durra. *Forſk. deſcr.* 174.
Sorghum fructu albo. *Beſl. eyſt. autumn.* 2. *t.* 13. *f.* 2.
Sorghi album, Milium indicum. *Bauh. hiſt.* 2. 449.
Sorghum. *Ger.* 77. *emac.* 83. *Raii hiſt.* 1252.
Melica ſ. Sorghum. *Park. theat.* 1137. *f.* 3.
Panicum 7. *Brown. jam.* 134.
β. Holcus rubens. *Gærtn. fruct.* 2. 3.
Sorghum fructu rubro. *Beſl. eyſt. aut.* 2. *t.* 13. *f.* 1?
Cholomon-mille *Caffris.*
Glumes villoſe, ſeed compreſſed awned.

[4. Holcus halepenſis. *Panicled Holcus.*
Lin. ſpec. 1485. *ſyſt.* 905. *Reich.* 4. 307. *Schreb. gram.* 129. *t.* 18. *Mieg. in act. helv.* 8. 123. *t.* 4. *f.* 2. *Gouan hort.* 513.
H. exiguus. *Forſk. deſcr.* 174. *n.* 75.
Gramen arundinaceum paniculatum, locuſtis partim muticis, partim ariſtatis. *Scheuch. gram.* 509. *t.* 11. *f.* 12 to 15.—halepenſe, tragopogonis folio, panicula miliacea. *Pluk. phyt. t.* 32. *f.* 1.—ſyriacum Hulliaun dictum. *Mor. hiſt.* 3. 201. *n.* 26. *ſ.* 8. *t.* 6. *f.* 26. *Raii ſuppl.* 616.
Andropogon arundinaceum. *Scop. carn. n.* 1236. *Allion. pedem. n.* 2282.
Glumes ſmooth, hermaphrodite flowers awnleſs, female awned.

5. Holcus nitidus.
Vahl ſymb. 2. 102.
Glumes one-flowered villoſe, all the flowers awnleſs.]

6. Holcus ſaccharatus. *Yellow-ſeeded Holcus.*
Lin. ſpec. 1484. *Reich.* 4. 308. *Mieg. in act. helv.* 8. 119. *t.* 4. *f.* 1. *Lour. cochinch.* 645. *Gærtn. fruct.* 2. 3.
Sorghum Battari. *Rumph. amb.* 5. 194. *t.* 75. *f.* 1.
Milium indicum, &c. *Bauh. theat.* 488. *Breyn. prodr.* 2. *Herm. lugdb.* 425. *Burm. zeyl.* 159. *Sloan. cat.* 25.
Panicum 9. *Brown. jam.* 135. 9.
Glumes villoſe, all the ſeeds awned.

[7. Holcus mollis. *Soft Holcus*, or *creeping Soft-graſs.*
Lin. ſpec. 1485. *ſyſt.* 905. *Reich.* 4. 308. *Schreb. gram.* 149. *t.* 20. *f.* 2. *Hudſ. angl.* 440. *Wither. arr.* 1137. *ed.* 3. *v.* 2. *p.* 135. *Curt. lond.* 5. 8. 323. *Lightf. ſcot.* 631. *Relh. cant. n.* 637. *Fl. ruſt. t.* 119. *Pollich pal. n.* 937. *Leers herborn. n.* 769. *t.* 7. *f.* 7. *Neck. gallob.* 415. *Villars dauph.* 2. 88. (Aira).
Avena. *Hall. helv. n.* 1485.
Gramen paniculatum molle radice graminis canini repente. *Mor. hiſt.* 3. 202.
Gr. caninum panic. molle. *Raii hiſt.* 1285. *Scheuch. agr.* 235. *t.* 4. *f.* 25.
Gr. miliaceum ariſtatum molle. *Raii ſyn.* 404.
Gr. can. longius radicatum. *Bauh. pin.* 1.—latiore panicula. *Lob. adv.* 2. 467.
Glumes two-flowered almoſt naked, hermaphrodite floret awnleſs, male with a knee-jointed awn.

8. Holcus lanatus. *Woolly Holcus* or *Meadow Soft-graſs.*
Lin. ſpec. 1485. *ſyſt.* 905. *Reich.* 4. 308. *Schreb. gram.* 145. *t.* 20. *f.* 1. *Hudſ. angl.* 440. *Wither. arr.* 1138. *ed.* 3. *v.* 2. *p.* 134. *Curt. lond.* 4. 11. 228. *Lightf. ſcot.* 631. *Relh. cant. n.* 638. *Fl. ruſt. t.* 118. *Scop. carn. n.* 1238. *Pollich pal. n.* 936. *Leers herborn. n.* 770. *t.* 7. *f.* 6. *Neck. gallob.* 414.
Aira. *Lin. hort. cliff.* 27. *Villars dauph.* 87.
Avena. *Hall. helv. n.* 1484.
Gramen pratenſe paniculatum molle. *Bauh. pin.* 2. *prodr.* 3. *theat.* 27. *Scheuch. agr.* 234. *t.* 4. *f.* 24. A. B. *Park. theat.* 1155. 1. *Loeſel. pruſſ.* 111. *t.* 25. *Raii hiſt.* 1285. *Mor. hiſt.* 3. 202. *ſ.* 8. *t.* 6. *f.* 34.
Gr. miliaceum pratenſe molle. *Raii ſyn.* 404.
Gr. tomentoſum elegans, panic. contracta purpurea. *Buxb. cent.* 5. 36. *t.* 67. *f.* 2.
G. lanatum. *Dalech. hiſt.* 425. *Bauh. hiſt.* 2. 466. 3. *Ger. emac.* 29. *n.* 6.
Glumes two-flowered villoſe, hermaphrodite floret awnleſs, male with a recurved awn.

9. Holcus laxus.
Lin. ſpec. 1486. *Reich.* 4. 309. *Gron. virg.* 136. (Aira).
Glumes two-flowered ſmooth awnleſs acuminate, panicle filiform weak.

10. Holcus ſtriatus.
Lin. ſpec. 1486. *Reich.* 4. 309. *Gron. virg.* 135.
Glumes two-flowered ſtriated awnleſs acuminate, panicle crowded oblong.

11. Holcus ſerratus.
Lin. ſyſt. 905. *ſuppl.* 433. *Thunb. prodr. cap.* 20.
Glumes two-flowered pubeſcent awnleſs, leaves ſerrate.

12. Holcus odoratus. *Sweet-ſcented Holcus.*
Lin. ſpec. 1485. *Reich.* 4. 310. *Fl. ſuec. n.* 918. *Neck. gallob.* 415.
Hierocloe. *Gmel. ſib.* 1. 101.
Avena. *Hall. helv. n.* 1496.
Aira. *Lin. ſuec. n.* 70. *edit.* 1.
Poa. *Lin. lapp. n.* 53.
Gramen paniculatum odoratum. *Bauh. pin.* 3. *prodr.* 7. *theat.* 36. *Scheuch. agr.* 236. *Park. theat.* 1156. *n.* 2. 1155. *f.* 2.
Gr. mariæ boruſſorum. *Loeſel. pruſſ.* 111. *t.* 26. *Raii hiſt.* 1287. *n.* 22.
Glumes three-flowered awnleſs acuminate, hermaphrodite flower two-ſtamened.

13. Holcus redolens.
Vahl ſymb. 2. 102.
Glumes three-flowered, ſide florets male awned hairy at the edge, the middle one ſubhermaphrodite awnleſs.

14. Holcus latifolius.
Lin. ſpec. 1486. *Reich.* 4. 310. *Oſb. itin.* 247.
Glumes three-flowered, the firſt floret unarmed, two prickly at the edge, leaves ſubovate.

15. Holcus pertuſus.
Lin. ſyſt. 906. *Reich.* 4. 310. *mant.* 301.
Spikes digitate, glumes with the outer valve punched with a hole in the middle.

DESCRIPTIONS, *&c.*

1. Culm two feet high, the thickneſs of a ſwan's quill, covered with the ſheaths of leaves; both of them are hiſpid. Leaves uſually ten in number, a finger's breadth, hiſpid. Spike very thick with very ſhort pedicels, having at the top a bundle of briſtles, within which are two ſeſſile flowers. Calyx two-valved, membranaceous, two-flowered. Outer petal of the hermaphrodite flower mucronate; of the male

Blunt. Style longer than the flowers, woolly, ſlightly bifid at top. Anthers oblong. This is an annual Graſs, and a native of the Eaſt Indies[a]. Cultivated by Compton Biſhop of London, at Fulham[b].

2. This is an annual Graſs bearing a great reſemblance to the next ſpecies, but very diſtinct from it by the black calyxes and the ſeeds of a ſnowy whiteneſs[c].

Though Linneus has made this a diſtinct ſpecies, it is more probable that Gærtner is right in making it only a variety of Holcus Sorghum, from which it differs in nothing more than in having the calyx when ripe cartilaginous, black and ſhining.—It was obſerved in Perſia by Lerche[d].

3. Panicle contracted, ovate, upright, but as it ripens drooping. Calyx green, pubeſcent. Awn brown at bottom, ſmooth and whitiſh at top[e]. Seed naked, free, ſubglobular, compreſſed a little on both ſides, ſmooth without ſhining, of a milky whiteneſs with a black umbilical dot. There are ſeveral varieties of Sorghum, as of moſt cultivated plants. The moſt remarkable, beſides H. bicolor, is the red-ſeeded one, cultivated among the Caffres. Of this the calyx when ripe, is cartilaginous, pale cheſtnut-coloured, very ſmooth, ſhining only half the length of the ſeed; which is naked, obovate-globular, much acuminate towards the baſe, red, not ſhining[e].

Miller deſcribes the Sorghum and ſaccharatus together, and indeed they differ ſo little as ſcarcely to merit being conſidered as diſtinct ſpecies. According to him] the ſtalks of theſe plants riſe five or ſix feet high, are ſtrong, reedy, and like thoſe of the Maiz, or Turkey Wheat, but ſmaller. The leaves are long and broad, having a deep furrow through the centre, where the midrib is depreſſed on the upper ſurface, and is very prominent below. The leaves are two feet and a half long, and two inches broad in the middle, embracing the ſtalks with their baſe. The flowers come out in large panicles at the top of the ſtalks, reſembling, at firſt appearance, the male ſpikes of the Turkey Wheat; theſe are ſucceeded by large roundiſh ſeeds, which are wrapped round with the chaff.

They are both natives of India, where this grain is much uſed to feed poultry, and is frequently ſent to Europe for the ſame purpoſe. [This is much cultivated in Arabia, and moſt parts of Aſia Minor. It has been introduced into Italy, Spain, Switzerland, and ſome parts of Germany; alſo into China, Cochinchina, and the Weſt Indies, where it grows commonly five or ſix feet high, or more, and being eſteemed a hearty food for labourers, is called Negroe Guinea Corn. Its long awns or briſtles defend it from the birds[f]. In England, the autumns are ſeldom dry and warm enough to ripen the ſeed well in the field.

In Arabia it is called *Dora* or *Durra*; the flour is very white, and they make good bread of it, or rather cakes, about two inches in thickneſs[g]. The bread which they make of it in ſome parts of Italy is dark and coarſe. In Tuſcany it is uſed chiefly for feeding poultry and pigeons; ſometimes for ſwine, kine and horſes. Cæſalpinus ſays, that cattle fed on the green herb are apt to ſwell and die, but thrive on it when dried. They make bruſhes of it in Italy, which Ray obſerved in the ſhops at Venice[h]. It was cultivated here in 1596, in John Gerarde's garden[i].

In German this is named *Mohrhirſe*, *Sorgſamen*, *Sorgſaat*, *Welſche Hirſe*, *Indianiſche Hirſe*. In Dutch, *Gewoon Zorghzaad*, *Negerkoorn*. In French *Houque ſorgo*, *Grand Millet*. In Italian, *Saggina*, *Sagginella*, *Sorgo*, *Melica*. In Spaniſh, *Alcandia*, *Melca*. In Portugueze, *Milho Sorgo*. In Tartarian, *Myſſur*, *Suburge*. In Japoneſe, *Sioku*, *Kibi*. In Guinea, *Guiarnatt*.

4. Culm ſmooth and even. Panicle ſpreading, purple, awns white at the tip. To each female (or hermaphrodite) flower there are two male flowers, which are pedicelled[k].

The root is perennial and increaſes by lateral runners like the reed. Leaves a foot and half in length a finger or an inch in breadth, ſomewhat glaucous, with a remarkable white line running along the middle, as in Tragopogon. Culms from three feet to near five feet in height, reedy, jointed, with leaves on them like the lower ones, only ſmaller. Panicle erect, from a hand to a long ſpan in length, browniſh. Seeds oblong, mucronate, ſomewhat turgid, brown, ſhining.

Native of Syria. Cultivated at Oxford in 1699 by Jacob Bobart, from ſeed ſent over by Huntington[l]. Scheuchzer had his ſpecimens from Triumfetti and Juſſieu, and gives a very long deſcription. Scopoli refers to Scheuchzer's name, and deſcribes it as an Andropogon. Allioni adopts Scopoli's name, and ſays that it is wild near Turin, and in other parts of Piedmont and Montferrat.

5. Culm round, upright, with bearded joints. Leaves narrow, ſtriated, ſhorter than the ſheath; the laſt ſpathaceous, of the ſame height with the culm; ſheath bearded at the mouth. Panicle upright. Peduncles in a ſort of whorl, capillary, bearded at the baſe, quite ſimple, three-flowered, ſometimes proliferous; pedicels uſually in pairs, ſeldom ſolitary. Middle flower hermaprodite, ſeſſile; lateral male, pedicelled; all ovate-lanceolate, ſomewhat compreſſed, bearded at the baſe with fulvous hairs. Glumes of the hermaphrodite flower brown, with fulvous hairs ſcattered over them, eſpecially at the edge and tip, ſmoother in the middle, ſhining: of the males villoſe, narrower, ſharper, not ſhining.—It is a native of the Eaſt Indies, and has the habit of the preceding, but is ſmaller in all its parts[m].

6. Root biennial. Plant the height of a man (with a ſolid, jointed, upright and very ſimple culm, *Lour.*) from the lower joints of which iſſue rooting fibres. Leaves like thoſe of the Sugar-cane, with a white longitudinal line[n], ſtiffly lanceolate, ſmooth, large, with claſping petioles. Panicle large, diffuſed. Calyx coloured, almoſt cloſed, longer than the ſeed, hairy at the baſe and tip. Awn of the corolla twice as long as the calyx, ſtraight, not writhed or jointed. Seed lenticular, thick, black, ſhining[o]. The male flowers ſcarcely open.

According to Gærtner, the panicle is oblong and looſe, with the racemelets when ripe ſpreading horizontally. Flowers almoſt obovate, obſcurely angular. Calyx one-flowered, with the valves when ripe coriaceous, very ſmooth and ſhining, ſtraw-coloured or ferruginous, cloſely ſurrounding the ſeed. Corolla membranaceous, very thin, villoſe at the edges, with a ſhort, briſtle-ſhaped, bent-jointed dorſal awn. Seed elliptical, covered with the permanent calyx and corolla, convex on one ſide, flattiſh on the other.

The villoſity of the calyx is as inconſtant as the colour, and is almoſt always loſt in maturity: the colour generally changes to dark or black: theſe circumſtances therefore are unfit to uſe for ſpecific differences. This ſpecies and H. ſorghum differ little in habit or any thing elſe, except the one having a naked the other an incruſted ſeed.

It differs from H. Sorghum in having the panicle upright, in a ſort of whorl; racemes ſpreading very much, horizontal, ſubpendulous, not a ſmall ovate panicle: general rachis of the panicle ſmooth, not rugged: glumes villoſe on every ſide, not at the tip only: one glume of the corolla has a long writhed awn in all the florets, not in the terminating florets only.

Native of the Eaſt Indies[p]. Cultivated in China and Cochinchina[q]. Browne calls it Guinea Wheat, and ſays it had been lately introduced into Jamaica. Mr. Miller cultivated it here in 1759[r].

7. Creeping Soft-graſs reſembles the next ſpecies, ſays Linneus, but the calyxes are more acute than in the other ſpecies, and rather acuminate.—According to Schreber, the roots are creeping, like Triticum repens, (Quich or Couch-graſs); the culms are taller; the leaves green; the calyx ſmooth; the awns ſtraight, after flowering jointed, projecting ſomewhat beyond

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[a] Linn. ſpec. [b] Ray hiſt. [c] Linn. mant. [d] Ibid. [e] Gærtner. [f] Browne. [g] Rauw. Ray hiſt. Gron. orient. [h] Ray hiſt. [i] Hort. kew. [k] Linn. ſpec.

[l] Hiſt. oxon. [m] Vahl. [n] Linn. ſpec. [o] Loureiro. [p] Linn. ſpec. [q] Loureiro. [r] Hort. kew.

the calyx. Mr. Curtis ſays it is uſually a ſmaller plant than Meadow Soft-graſs, or if it be as tall, it has a much more ſcanty panicle. The ſpikelets have not that brilliant colour which marks thoſe of *lanatus* at their firſt appearance. The joints are woolly, and the ſpikelets large and pointed, with the awn much longer than the calyx. Both flowers are hermaphrodite, contrary to Linneus's ſpecific character, and both apparently produce fertile ſeeds. This graſs alſo rarely occurs but in and about woods and in hedges; whereas the lanatus is a very general graſs in meadows. Ray affirms that it is very common in corn fields; but Mr. Curtis ſays that he has ſeldom ſeen it in that ſituation. It flowers in july, and is a worſe graſs than the *lanatus* on account of its creeping roots.

Haller makes it an *Avena*, to which genus, in the opinion of Dr. Stokes, its ſtructure ſhows it really to belong. Schreber, in his ſpicilegium, makes it an *Aira*, to which Mr. Curtis alſo would refer it.

8. Root perennial, but not creeping. Stems from two to three feet high, upright, round, pubeſcent, with three or four joints. Leaves a quarter of an inch in breadth, grayiſh from being covered with ſoft hairs; the ſheath marked on the outſide with purple lines, and ſhining within; the ligule or membrane blunt or truncate, hairy on the outſide and about the edge. Panicle at firſt contracted, reddiſh, and drooping a little; but afterwards upright, ſpreading and whitiſh. The velvet-like ſoftneſs of the whole plant, and the redneſs of the opening panicle, render this graſs very conſpicuous. It abounds in meadows, is frequent by road ſides, and ſometimes grows on walls. It flowers in june and july. Haller ſpeaks highly of this graſs as food for cattle, but it is not at all eſteemed among us. The ſeed however, being eaſily collected, is ſometimes ſent to London in great quantities, as pure graſs-ſeed.

Lightfoot ſays that the ſtalks are uſed for making ropes for fiſhing boats in the iſle of Skye; but there are better graſſes for this purpoſe [s].

A gentleman's horſes having been much diſordered with a malady, which occaſioned an extraordinary diſcharge of urine, the hay on which they fed being examined, was found to contain ſcarcely any other graſs but this; and on changing the hay the diſtemper ceaſed [t].

This fact ought to be well aſcertained, before the *Holcus lanatus* is recommended, with Dr. Anderſon [u], as one of the moſt valuable kinds of meadow graſſes; though ſince he calls it creeping ſoft-graſs, and talks of its running roots, he may mean H. mollis, which is one of the vileſt weeds, at leaſt in arable lands.

Mr. Marſhall, in his Rural Economy of Yorkſhire, ſays that it is far from an eligible graſs for cultivation, is now entirely exploded by judicious huſbandmen, and has been ſupplanted by Rye-graſs (Ray-graſs): the growers of the ſeeds being the only perſons who have profited by its cultivation, eighty buſhels having been produced from an acre [x]. It goes there under the name of *White Hay-ſeeds*.

In his minutes of the midland counties he ſays it ranks high as a paſture plant, for cattle at leaſt; that a piece which abounds in it to one half is eſteemed excellent for cheeſe; is favourable to the growing of young heifers, and the fatting of Scotch bullocks, and that cattle of every kind do well in it, but not horſes [y].

9. This has the habit of Aira cærulea. Culms two feet high, narrow, ſomewhat nodding. Leaves ſeveral, ſmooth and even, rugged about the edge, hairy at the mouth of the ſheath. Panicle filiform, very little branched, ſomewhat nodding, weak. Peduncles uſually two-flowered. Male flower ovate, thick.—Native of Virginia and Canada [z].

10. Leaves flat, long, with thickiſh, ſtriated ſheaths. Panicle attenuated, with very ſhort, cluſtered, branching peduncles. Glumes oblong, ſtriated, acuminate. Calyx one-leafed, very ſmall.—Native of Virginia, in marſhes [a].

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[s] Curtis.
[t] Young's annals, vol. 20. p. 105.
[u] Eſſays, vol. 2. 225.
[x] 2. p. 88.
[y] 2. p. 148.
[z] Linn. ſpec.
[a] Ibid.

11. Root perennial, creeping, covered at top with ſheaths of leaves in cluſters. Culms decumbent at bottom, branched, covered with the ſheaths of leaves below, naked above, a foot high, even, quite ſimple, almoſt leafleſs. Leaves with ſwelling ſheaths, ſtiff, more ſerrate than in the others. Raceme compound, narrow. Flowers villoſe, awnleſs, purple. Calyx two-flowered, ſoft, villoſe, covering the florets. Male flower three-ſtamened: female ovate, with cartilaginous petals.—Found at the Cape of Good Hope by Thunberg [b]: who has alſo diſcovered ſeveral other ſpecies, not here enumerated.

12. Roots perennial, jointed, creeping. Culm three feet high, with few joints. Leaves narrow, very long, overtopping the panicle, convoluted ſo as to reſemble the ſtalk of a ruſh, ſtiff, ſtout, and pungent. Panicle ſmall, ſlightly ſcattered [c]. The two lateral flowers are male and three-ſtamened; the third in the middle is hermaphrodite and two-ſtamened.

Native of wet paſtures in the colder parts of Europe, Canada, and Siberia. Introduced here in 1777, by Brook Watſon, Eſq.

This graſs has a ſweet ſmell, and is collected into bundles, to lay among cloaths and linen, and is hung over beds in ſome countries with a view to procure ſleep [d].

13. Culm upright, a foot high, ſmooth, ſheathed. Leaves the length of the culm, involuted, awl-ſhaped, ſtriated. Panicle patulous, with filiform pedicels. Calyx lanceolate, longer than the florets, dirty yellow, ſhining; one glume larger and longer than the other. Florets three; two lateral, ſeſſile, male, larger, outer valves pubeſcent, eſpecially towards the edge, ſhining-brown, awned a little below the tip, obliquely truncated, awns the length of the valve; middle floret ſmaller, awnleſs, lanceolate. Stamens three, fertile in the males, barren in the middle flower. In appearance quite ſimilar to the preceding, but differing in its involuted leaves, and florets of double the ſize.—Native of Terra del Fuego. *Fabricius* [e]: and of New Zealand, if it be the ſame plant. *Forſter.*

14. Culm even, ſcarcely a foot high. Leaves very broad, with broadiſh ſtriated ſheaths. Branches of the panicle ſimple, wand-like. Flowers alternate, ſolitary, on capillary pedicels, ovate-oblong. Calyx ſhorter. The firſt flower unarmed; the ſecond and third armed with recurved ſpines at the upper edge.—Found in China by Oſbeck [f].

15. Culm jointed, even, aſcending, branched, about a foot high. Leaves alternate, remote, narrower. Spikes five, linear, equal, ſomewhat hairy, uprightiſh, pedicelled: rachis filiform, hairy, with two-flowered teeth; the lower floret ſeſſile, the upper on a hairy pedicel the length of the lower floret, which is hermaphrodite; the upper is male. The former has oblong, convoluted petals, of which the outer is punched with a round hole in the middle; the awn is terminating, long, twiſted. The latter is ſmaller, with linear convoluted petals, the outer not punched, and no awns.—Native of the Eaſt Indies [g].

Guinea Graſs.

Guinea Graſs, ſo called from its having been originally introduced into the Weſt Indies from the coaſt of Africa, is a ſpecies of Holcus, according to Browne [h]. The characters of it, he ſays, agree pretty well with thoſe of *Panicum*, in general, but the flowers commonly grow very luxuriant, and though often hermaphrodite, are generally obſerved to be male and female diſtinct, ſurrounded by ſeparate involucres, and ſtanding on diſtinct pedicels within the ſame calyx.

The blades of this graſs, when flouriſhing, appear not unlike thoſe of Wheat, only rather broader and longer; and the ſtalks, during the firſt growth, are alſo much like thoſe of Wheat, but they get weaker and leſs, the oftener the graſs is fed upon or cut, till at laſt it becomes a fine, rich and entire ſwath.

Guinea-graſs appears capable of thriving in any ſituation, in reſpect to climate and ſoil, and can bear the effects of dry or wet weather in a moſt remarkable manner.

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[b] Linn. ſuppl.
[c] Bauh. prodr.
[d] Linn. ſuec.
[e] Vahl.
[f] Linn. ſpec.
[g] Linn. ma[illegible].
[h] Jamaica. p. 366. ſpecies 2.

In wet weather it may be cut once in a fortnight, and ſometimes oftener, when the land is new or fertile. In dry weather, it is long before it withers, and when reduced to ſuch a ſtate as to ſeem totally deſtroyed, will revive with a ſlight ſhower in a few hours: when rain falls, though ſo ſparingly as to be of little or no ſervice to common paſtures, it will occaſion this to be fit for uſe in a few weeks; nay in ſome ſituations, not too much expoſed to the ſun, it will flouriſh from occaſional dews only. When ready to feed, it is from ſix to eight feet high, but it is generally fed or cut when only three or four.

It agrees with all kinds of ſtock; and horſes, mules and kine will fatten ſo faſt upon it, that the two former will be in good condition in a couple of months, or leſs: and the latter will become fit for the butcher in the courſe of three months[i].

Guinea-graſs is ſaid to have been brought from Africa to America by the Engliſh at the beginning of the preſent century; and the French have introduced it thence into St. Domingo, &c. about the year 1768. It has made its way in the Continent of North America from Carolina to New England: and attempts have been made to introduce it into Europe. It ſeems too tender to be of any advantage as fodder in England. In Jamaica it is now generally cultivated to ſupply both their ſtabled and working cattle: and Sir Archibald Campbell, who was governor of that iſland, carried the ſeed to the Eaſt Indies, where it was propagated with ſucceſs, and was of great ſervice to the cavalry; the horſes having before that been fed on the roots of graſs[k].]

PROPAGATION AND CULTURE.

3, 6, &c. Theſe plants are propagated in a few gardens for the ſake of variety, but as they are late in ripening their grain here, ſo they are not worth cultivating for uſe. The ſeeds ſhould be ſown on a warm border, or upon a gentle hot-bed in march; and when the plants come up, they ſhould be thinned and planted at the diſtance of a foot aſunder in the rows, and the rows ſhould be three feet diſtance; the culture after this, is to keep the ground clean from weeds, and draw the earth up with a hoe to the ſtems of the plants; if the ſeaſon proves warm, their panicles will appear in july, and the grain will ripen in ſeptember, but in bad ſeaſons their grain will not ripen here.

[If the ſeeds however were procured from Germany or Switzerland, climates not very different from our own, it ſeems not improbable but that Sorghum might be made to grow to advantage on ſome of the warmer ſoils of our iſland.

7, 8, &c. For the culture of theſe ſee GRASS.

Guinea Graſs.

The manner of cultivating this Graſs in the Weſt Indies is to make the land intended for it perfectly bare by hoeing, and then to dig holes from three to five feet diſtance, according to the quality of the ſoil. The holes ſhould be large, and deep enough to bury a few roots of the graſs a good depth. The roots are taken from a neighbouring field or nurſery, and the graſs being topped within three or four inches, they are put into the holes, well covered with earth, and preſſed down by the foot. Care is taken to keep the plants free from weeds by repeated hoeings. The beſt months for planting are april and may, for the graſs will then feed in ſeptember and october, at which time it feeds moſt abundantly. The ground muſt be quite clean when the feed is ready to drop; and if the ſpaces between the roots are then ſtirred with the hoe, it will be found very beneficial.

When the ſeed is all fallen, ſtock are turned in to tread it into the ground, and feed upon the graſs. In very rich and new land, the graſs at firſt will grow ſo rank as to produce very thick ſtalks, which, by running up the noſes of the ſtock, will prevent them from eating it ſo cloſe as they otherwiſe would. When however it is eaten as near the ground as poſſible, the remaining graſs, with the roots which were planted, are dug out with the hoe and burnt off. After this, the graſs, if favourable rains come, will grow from the ſeed, and by covering the ground in may following, will be perfectly eſtabliſhed for ſeveral years, according to the quality of the land, to be cut for hay, or to ſtand for paſture.

Whenever the graſs grows thin, holes may be opened in ſuch places, and roots again planted to ſupply it; and by this attention, a field will ſcarcely ever be ſo totally worn out as to require the labour of being at any one time replanted.

With very little care in its infancy, this graſs will overcome all other graſs and weeds; and in ground full of ſtones and rocks, though planted at great diſtances at random, as the ſoil admits, it will ſpread itſelf about them in a few months, and at laſt cover them entirely.

If the ſtalks of Guinea-graſs be buried a few inches deep, each joint of it will take root, and grow luxuriantly: or it may be propagated directly from ſowing the ſeed, the ground being previouſly prepared for that purpoſe; but the ſeed will lie many months in the ground before it makes its appearance. Some planters do not ſtock up the roots which are planted, when the graſs has ſeeded; and others depend upon what they afford, by continually feeding or cutting the graſs when at a certain height, without ever allowing it to ſeed[l].]

HOLLOW ROOT. See *Adoxa* and *Fumaria*.

HOLLY. See *Ilex*.

——— knee. See *Ruſcus*.

——— Sea. See *Eryngium*.

HOLLYHOCK. See *Alcea*.

[HOLM OAK. See *Quercus*.

——— SEA. See *Eryngium*.

HOLOSCHOENUS. See *Scirpus*.

HOLOSTEA. See *Stellaria*.

HOLOSTĔUM. Ολοστεον *of Dioſcorides. From* ολος *totum, and* οστεον *oſſeum; wholly bony. Said to be ſo called* per antiphraſin, *from its tenderneſs*.)

Lin. gen. n. 104. *Reich.* 110. *Schreb.* 136. *Gærtn. t.* 130. *Juſſ.* 299.

Claſſ. 3. 3. Triandria Trigynia.

Nat. order of *Caryophyllei*. *Caryophylleæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved: *leaflets* ovate, permanent.

COR. *Petals* five, two-parted, blunt, equal.

STAM. *Filaments* three, filiform, ſhorter than the corolla. *Anthers* roundiſh.

PIST. *Germ* roundiſh. *Styles* three, filiform. *Stigmas* bluntiſh.

PER. *Capſule* one-celled, ſubcylindric, gaping at the tip.

SEEDS very many, roundiſh.

OBS. *In* H. ſucculentum *the petals are ſubtrifid, leſs than the calyx. In* H. umbellatum *the petals are three or two-toothed: ſtamens three or five: ſtyles three or four: capſule ſix-valved at the tip.*

ESSENTIAL CHARACTER.

Cal. five-leaved. *Pet.* five. *Capſ.* one-celled, ſubcylindrical, opening at top.

SPECIES.

1. Holoſteum cordatum. *Heart-leaved Holoſteum.* *Lin. ſpec.* 130. *ſyſt.* 128. *Reich.* 1. 246. *amoen.* 3. 21. *mant.* 327. *Fabric. helmſt.* 184. *Brown. jam.* 139.

Alſine. *Lin. hort. upſ.* 24. *Herm. par.* 11. *Sloan. jam.* 1. 203. *Raii ſuppl.* 499. *n.* 39.

Leaves ſubcordate.

2. Holoſteum diandrum. *Two-ſtamened Holoſteum.* *Swartz prodr.* 27. *Brown. jam.* 139. *n.* 2.

Stems procumbent very rigid, leaves roundiſh, flowers two-ſtamened.

3. Holoſteum ſucculentum. *Succulent Holoſteum.* *Lin. ſpec.* 130. *ſyſt.* 129. *Reich.* 1. 246. *mant.* 328. *amoen.* 3. 21. *Cold. noveb.* 9. (Alſine).

Leaves elliptic fleſhy.

4. Holoſteum hirſutum. *Hairy Holoſteum.* *Lin. ſpec.* 130. *Reich.* 1. 246. *amoen.* 3. 21.

Leaves orbiculate hirſute.

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[i] Spooner in Bath papers, vol. 5. p. 282.

[k] Young's annals, 9. 409. & 13. 341.

[l] Spooner in Bath papers.

5. Holoſteum umbellatum. *Umbelled Holoſteum.*
Lin. ſpec. 130. *Reich.* 1. 246. *Gærtn. fruct.* 2. 231. *Loefl. it.* 120. *Pollich pal. n.* 135. *Leers herborn. n.* 100. *Krock. ſileſ. n.* 197. *t.* 31. *Villars dauph.* 652. 1. *Roſe elem. app.* 445. *t.* 2. *f.* 4. *Engl. bot. t.* 27. *With. arr. ed.* 3. *v.* 2. *p.* 175.
H. caryophylleum arvenſe. *Tabern. ic.* 233.
Alſine. *Hall. helv. n.* 879. *Vaill. par.* 7.
Caryophyllus arvenſis umbellatus, folio glabro. *Bauh. pin.* 210.—umbelliferus. *Bauh. hiſt.* 3. 361. 1. *Raii hiſt.* 1028. 8.—umbellatus. *Park. theat.* 1338. 6.—holoſteus. *Ger. emac.* 595. 16.
Ceraſtium umbellatum. *Hudſ. angl.* 201. *Wither. arr.* 479.
β. H. umbellatum hirſutum. *Villars dauph.* 3. 652. 2.
Lychnis graminea hirſuta umbellifera. *Mor. hiſt.* 2. 546. *ſ.* 5. *t.* 22. *f.* 46.
Caryophyllus holoſteus tomentoſus anguſtifolius. *Bauh. prodr.* 104. 10? *Raii hiſt.* 1028. *n.* 13?
Flowers umbelled.

DESCRIPTIONS, *&c.*

1. Stems decumbent, creeping, ſomewhat rigid at bottom. Leaves oppoſite, orbiculate-cordate, ſubſeſſile. Stipules four on each ſide, membranaceous. Peduncles lateral, elongated, aſcending, ſeven-flowered, one in the middle, and three on each ſide, from a peduncle farther branched. Pedicels when mature viſcid, dropping with the fruit. Calycine leaflets oblong, acute, concave. Petals white, upright, lanceolate, ſhorter than the calyx. Styles divaricating[m].

Native of Jamaica and Surinam. In the former it is common, and thrives very luxuriantly. Browne calls it the larger American Chickweed: and ſays, that it grows in tufts, and ſeldom riſes above ten or twelve inches from the ground; that the ſmaller birds feed much upon the ſeeds, but that it is ſeldom put to any other uſe, except that large wads of the freſh plant heated over a gentle fire are ſometimes applied to hard and painful ſwellings, in order to relax the parts and diſpoſe the obſtructions to a reſolution.

2. This plant is very ſmall, ſeldom riſing above ſix or ſeven inches from the ground. Calycine leaflets and petals five, as in the other, but only two ſtamens, and theſe placed in the ſame line with the petals.—Native of Jamaica, but not common[n]. Annual.

3. Petals white, ſubtrifid, ſmaller than the calyx[o].—Native of New York.

4. Native of Malabar.

5. Root annual, ſlender, a little branched, fibrous, running perpendicularly down. Stems numerous, filiform, jointed, round, perfoliate, upright, from two or three to ſix inches high, having moſtly three joints; the ſpace betwixt the two loweſt is ſmooth, the others for the moſt part viſcous and hairy. Leaves in pairs at each joint, very entire, erect, cohering at the baſe, each pair croſſing that above and below, ſmooth on the under ſide, the upper ſurface and margins a little hairy, concave at the baſe, keel-ſhaped, ovate, obtuſe and fleſhy. Root-leaves narrower and longer than the others. Two external bractes large, and of the ſame form with the leaves; the internal lanceolate and very ſmall. Peduncles numerous, all from one centre, terminating, unequal, ſome hanging down, ſome declining a little, ſome erect, and ſome bent in different directions, filiform, one-flowered, permanent[p]. Calyx never opening, marked at the baſe with black dots. Petals white, but often tinged with purple on the outſide, converging, concealed within the calyx, ſo that the tips only peep out[q]; they are marked with five white ribs, and are toothed at top, but the number of teeth vary from two to five; as do alſo the ſtamina and piſtils, the former from three to five and even ten, the latter uſually three, but ſometimes four or five[r]. Capſule ovate, ſmooth, ſhining, one-celled, ſix-valved, ſuperior, ſcarcely opening beyond the middle: receptacle columnar, free, hiſpid with the umbilical chords, little more than half the capſule in length. Seeds numerous (about ſeventy), ſubovate, compreſſedly three-cornered, rugged with ſcattered dots, with a groove on the back, and a ridge on the belly, rufeſcent[s].

Native of Spain, Italy, France, Germany, Switzerland, and England; where it was firſt noticed on walls at Norwich, and on walls and banks in the neighbourhood, by Mr. John Pitchford in ſpring 1765[t]. It was alſo found near Bury in Suffolk by Sir Thomas Gery Cullum, Bart. It is an annual plant, flowering in april and may.

Hudſon and Withering place it among the Ceraſtiums; whilſt Swartz would remove the Alſine media or common Chickweed to this genus of Holoſteum.

Villars makes two ſpecies of the umbellatum.—1. Smooth, with triandrous flowers. 2. Hairy, with decandrous flowers. The firſt ſmooth, ſmaller and greener. The ſecond, very villoſe, larger, aſh-coloured green all over, the peduncles and calyxes not clammy, as in the other. This is not ſo common as the other.

HOLOSTEUM. See *Acroſtichum ſeptentrionale*, *Juncus bufonius*, *Plantago.*

——— tetraphyllum. See *Polycarpon.*

HOMALIUM. (*So named by Jacquin from* ομαλης, *equality: on account of the proportion obſerved in the ſtamens.*)
Lin. gen. Schreb. n. 925. *Jacqu. amer.* 170. *Swartz prodr.* 86. *Juſſ.* 343.
Racoubea. *Aubl.* 236.
Claſſ. 13. 3. Polyandria Trigynia.
Nat. order of *Roſaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, ſix or ſeven-cleft: *clefts* ovate-lanceolate, ſharp, ſpreading very much.
COR. *Petals* ſix or ſeven, ovate, flat, a little longer than the calyx, ſpreading very much.
Nectary, Glands ſix or ſeven, flat, alternate with the petals.
STAM. *Filaments* eighteen to twenty-eight, ſubulate, upright, the length of the corolla, of which three or four are inſerted into the receptacle among the glands before the baſe of the petals. *Anthers* roundiſh, ſmall.
PIST. *Germ* roundiſh, villoſe, immerſed in the baſe of the calyx. *Styles* three, upright. *Stigmas* ſimple.
PER. *Capſule* woody, ovate, one-celled.
SEEDS very many, and very ſmall.

ESSENTIAL CHARACTER.

Cal. ſix or ſeven-parted. *Cor.* ſix or ſeven-petalled. *Stam.* twenty-one, in three bodies. *Peric.* one-celled, many-ſeeded.

SPECIES.

1. Homalium racemoſum.
Jacqu. amer. 170. *t.* 183. *f.* 72. *pict. t.* 261. *f.* 43. *Swartz prodr.* 86.
Leaves ſerrate, racemes axillary and terminating, flowers peduncled.

2. Homalium Racoubea.
Swartz prodr. 86.
Racoubea guianenſis. *Aubl. guian.* 590. *t.* 236.
Leaves toothed, coriaceous, racemes terminating, flowers ſubſeſſile.

DESCRIPTIONS, *&c.*

1. This is a lofty branching tree, with the habit and leaves of Elm. Flowers racemed, flat. Stamens ſometimes eighteen, ſo that there are three before each petal.—Native of Martinico[u], and Jamaica[x].

2. This is a ſhrub with a trunk of about three or four feet high and four or five inches in diameter: the bark is whitiſh: the branches tortuous and ſpreading, and ſeven or eight feet in length: the leaves alternate, green, ſmooth, oval, and toothed; with rather pointed tips: the footſtalks are ſhort and have each two ſmall caducous ſtipules at their baſe. The flowers are borne on ſpikes ſpringing from the boſoms of the upper leaves: they are ſeſſile, and of a yellow colour.—Native of Guiana[y].

HOMALOCENCHRUS. *Mieg. Hall. Allion.* Aſprella, *Schreb. n.* 105. See *Leerſia.*

HONESTY. See *Lunaria.*

HONE-WORT. See *Siſon.*

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[m] Linn. mant.
[n] Browne.
[o] Linn. mant.
[p] Roſe.
[q] Krocker.
[r] Haller, Leers, Krocker, &c.
[s] Gærtner.
[t] Roſe.
[u] Jacquin.
[x] Swartz.
[y] Aublet.

Honey-Flower. See *Melianthus.*

Honeysuckle. See *Lonicera.*

——————— French. See *Hedyſarum.*

Honey-Wort. See *Cerinthe.*

Hooded Milfoil. See *Utricularia.*

———— Willow-Herb. See *Scutellaria.*

Hop. See *Lupulus.*

HOPEA. (*So named by Dr. Garden, in honour of Dr. Hope, Profeſſor of Botany at Edinburgh.*)

Lin. gen. Reich. n. 979. *Schreb. n.* 1222. *Juſſ.* 157.

Claſſ. 18. 4. Polyadelphia Polyandria.—Monadelphia, *L'Herit.*

Nat. order of *Guaiacanæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, bell-ſhaped, five-cleft: *clefts* ovate, blunt, permanent.

Cor. *Petals* five, oblong, concave, connected at the baſe, by the intervention of the bunches of ſtamens.

Stam. *Filaments* very many, briſtle-ſhaped, longer than the corolla, connected at the baſe in five bodies. *Anthers* quadrangular.

Pist. *Germ* inferior, roundiſh. *Style* gradually thickening, the length of the corolla, permanent. *Stigma* thickiſh, obliquely depreſſed.

Per. *Drupe* dry, oval-cylindric, gibbous, crowned with the calyx.

Seed. *Nut* ſmooth, three-celled, protracted by a blunt tip.

Obs. *Two cells of the nucleus are frequently abortive, and obliterated. It ſeems to have an affinity with Styrax.—L'Heritier unites this with* Alſtonia, Ciponima *and* Symplocos, *under the latter name.*

ESSENTIAL CHARACTER.

Cal. five-cleft, ſuperior. *Cor.* five-petalled. *Stam.* many, connected in five bodies. *Style* one. *Drupe* with a three-celled nut.

SPECIES.

1. Hopea tinctoria.

Lin. mant. 105. *ſyſt.* 699.—*ed.* 13. 582.—12. 509.

Symplocos tinctoria. *L'Herit. in Linn. tranſ.* 1. 176.

Arbor lauri folio, floribus ex foliorum alis. *Cateſb. car.* 1. *t.* 54. (bad).

DESCRIPTION, *&c.*

This is a tree, with alternate, petioled, ſimple, oblong, lanceolate-ovate, ſubſerrate, ſhining, nerveleſs, ſweet leaves. The peduncles burſt forth from buds upon the topmoſt branchlets, eight or ten together, before the leaves, and are diſpoſed in a very ſhort ſpike, on very ſhort, one-flowered pedicels, clothed with ſmall, concave, villoſe leaflets. The flowers are ſucceeded by ſubſeſſile fruits, below the leaves, in a very ſhort ſpike. It flowers early in the ſpring, and is then extremely ſweet. The juice or a decoction of the leaves will dye linen and ſilk of a bright yellow colour.—Native of Carolina[z].

Hop-Horn-beam. See *Carpinus.*]

Hops. See *Humulus.*

HORDEUM. (*Either* horridum *from* horreo, *on account of its long awns or beards; or ſince it was anciently writ* Fordeum, *rather from* φερβω *to feed or nouriſh, whence* φορβη *and* Forbea, *and changing the* b *into* d, Fordeum. *Voſſius.*)

Lin. gen. n. 98. *Reich.* 104. *Schreb.* 129. *Gærtn. t.* 81. *Tournef.* 295. *Juſſ.* 32.

Claſſ. 3. 2. Triandria Digynia.

Nat. order of *Graſſes*, or *Gramina.* *Gramineæ*, Juſſ.

GENERIC CHARACTER.

Cal. Common *Receptacle* lengthened into a ſpike. *Glume* ſix-leaved three-flowered: *flowers* ſeſſile: *leaflets* diſtant, in pairs, linear, acuminate.

Cor. two-valved; *lower valve* bellying, angular, ovate-acuminate, longer than the calyx, ending in a long *awn*: *inner valve* lanceolate, flat, ſmaller. *Nectary* two-leaved; *leaflets* ovate, ſharp, ciliate.

Stam. *Filaments* three, capillary, ſhorter than the corolla. *Anthers* oblong.

Pist. *Germ* ovate-turbinate. *Styles* two, villoſe, reflex. *Stigmas* ſimilar.

Per. none: the corolla grows round the ſeed, without opening.

Seed oblong, bellying, angular, acuminate to both ends, marked with a groove on one ſide, (covered with the permanent corolla; radicles of the embryo ſix, *G.*)

Obs. *In ſome ſpecies all the three flowers contained in an involucre are hermaphrodite and fertile; in others the ſide flowers are males, and the middle one only is a fertile hermaphrodite.*

ESSENTIAL CHARACTER.

Cal. lateral, two-valved, (valves narrow, acuminate, diſtant, all together forming a ſix-leaved involucre), one-flowered, by threes, at each toothlet of the rachis.

SPECIES.

1. Hordeum vulgare. *Spring Barley.*

Lin. ſpec. 125. *Reich.* 1. 235. *hort. cliff.* 24. *upſ.* 22. *mat. med.* 47. *Hall. helv. n.* 1533. *Blackw. herb. t.* 423. *Fl. ruſt.* 90. *Villars dauph.* 172. *Neck. gallob.* 73.

Hordeum. *Lob. ic.* 28. *Ger.* 64. 1.—diſtichon. *Ger. emac.* 70. 1. *Park. theat.* 1129. 1. *t.* 1130. *f.* 1. *Raii hiſt.* 1243. 1.

β. Hordeum cœleſte. *Lin. hort. upſ.* 23.

H. nudum gymnocriton. *Bauh. hiſt.* 2. 430.

Zeocriton vel Tritico-Speltum. *Bauh. theat.* 423.

All the florets hermaphrodite and awned in two very upright rows.

2. Hordeum hexaſtichon. *Winter* or *Square Barley, Bear* or *Big.*

Lin. ſpec. 125. *Reich.* 1. 236. *hort. upſ.* 23. *Hall. helv. n.* 1534. *Gærtn. fruct.* 2. 10. *Fl. ruſt.* 107. *Villars dauph.* 2. 172.

H. hexaſtichon pulchrum. *Bauh. hiſt.* 2. 129. *Raii hiſt.* 1244. 3. *ſyn.* 388. *Park. theat.* 1130. *f.* 2.

H. polyſtichum hybernum. *Bauh. theat.* 439. *Mor. hiſt.* 3. 206. *ſ.* 8. *t.* 6. *f.* 3.—et forte vernum.

All the florets hermaphrodite and awned, the grains placed regularly in ſix rows.

3. Hordeum diſtichon. *Common Barley.*

Lin. ſpec. 125. *ſyſt.* 125. *Reich.* 1. 236. *hort. upſ.* 23. *mat. med.* 47. *Hall. helv. n.* 1535. *Neck. gallob.* 73. *Villars dauph.* 2. 172. *Gærtn. fruct.* 2. 10. *Bauh. pin.* 22. *Mor. f.* 1.

β. Hordeum nudum. *Lin. ſpec.* 125. *Reich.* 236. *Villars dauph.* 2. 173.

Lateral florets male and awnleſs, grains angular imbricated.

4. Hordeum Zeocriton. *Sprat or Battledore Barley.*

Lin. ſpec. 125. *ſyſt.* 125. *Reich.* 1. 236. *hort. upſ.* 23. *n.* 5. *Schreb. gram.* 125. *t.* 17.

H. diſtichum, ſpica lata compreſſa breviore. *Mor. hiſt.* 3. 206. *ſ.* 8. *t.* 6. *f.* 2.—ſp. brev. & latiore, granis confertis. *Raii hiſt.* 1243.

H. dictum Oryza germanica. *Bauh. hiſt.* 2. 429. (figure good).

Zeocryton ſ. Oryza germ. *Bauh. pin.* 22.

Lateral florets male awnleſs, grains angular ſpreading corticated.

* *Graſſes.*

[5. Hordeum bulboſum. *Bulbous Barley-graſs.*

Lin. ſpec. 125. *Reich.* 1. 237. *amoen.* 4. 304.

Gramen ſecalinum bulboſa radice. *Barr. ic.* 112. *f.* 2. *Scheuch. agr.* 19.

Gr. bulb. ex Alepo. *Bauh. pin.* 2. *prodr.* 4. *theat.* 21. *Bauh. hiſt.* 2. 431. *Raii hiſt.* 1258.

Gr. ſecal. chapelenſe, rad. tuberoſa. *Mor. hiſt.* 3. 179. *ſ.* 8. *t.* 6. *f.* 7.

All the florets in threes fertile awned, involucres briſtle-ſhaped ciliate.

6. Hordeum murinum. *Wall Barley-graſs.*

Lin. ſpec. 126. *Reich.* 1. 237. *hort. cliff.* 24. *fl. ſuec. n.* 113. *Hudſ. angl.* 56. *Wither. arr.* 126. *ed.* 3. *v.* 2. *p.* 171. *Curt. lond.* 5. *t.* 9. 325. *Hall. helv. n.* 1536. *Scop. carn. n.* 1241. *Pollich pal. n.* 132. *Krock. ſileſ. n.* 193. *Villars dauph.* 2. 174. *Fl. dan. t.* 629. *Fl. ruſt. t.* 43. *Bauh. hiſt.* 2. 431.

Gramen hordeaceum minus & vulgare. *Bauh. pin.* 9. *theat.* 134. *Scheuch. agr.* 14. *Reliqu. Rudb. t.* 12. *f.* 2.

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[z] Linn. mant.

Gr. ſecalinum. *Ger.* 66. 2. *emac.* 73. 1. *Park. theat.* 1147. *Raii hiſt.* 1258. *ſyn.* 391. 1. *Mor. hiſt.* 3. 179. *ſ.* 8. *t.* 6. *f.* 4.
Lateral florets male awned, middle involucres ciliate.

7. Hordeum pratenſe. *Meadow Barley-graſs.*
Hudſ. angl. 56. *Wither. arr.* 126. *ed.* 3. *v.* 2. *p.* 171. *Fl. ruſt. t.* 108. *Hall. helv. n.* 1538. *Villars dauph.* 2. 174. *Fl. dan. t.* 630.
H. murinum β.—& nodoſum. *Lin. ſpec.* 126.
Gramen ſecalinum. *Ger. emac.* 29. *n.* 4. *Raii hiſt.* 1258. 2. *ſyn.* 392. *Mill. dict. n.* 7. *Vaill. par. t.* 17. *f.* 6.—majus & minus. *Park. theat.* 1144. 7.—minus pratenſe. *Mor. hiſt. ſ.* 8. *t.* 2. *row.* 1. *f.* 6.
G. ſpica ſecalina. *Bauh. prodr.* 57.
G. ſpicatum ſecal. minus. *Scheuch. agr.* 17.
All the florets awned, the lateral ones male, all the involucels rugged.

8. Hordeum maritimum. *Marſh Barley-graſs.*
Wither. arr. 127. *ed.* 3. *v.* 2. *p.* 172. *Vahl ſymb.* 2. 25. *Fl. ruſt. t.* 44.
H. marinum. *Hudſ. angl.* 57.
H. imrinum. *Forſk. cat.* 19. *n.* 52.
H. geniculatum. *Allion. pedem. n.* 2274. *t.* 91. *f.* 3.
G. ſecalinum paluſtre & maritimum. *Raii hiſt.* 1258. *ſyn.* 392. 3. *Scheuch. agr.* 18. *Mor. hiſt. t.* 6. *f.* 5.
G. hordeo diſticho ſimile. *Bauh. pin.* 9. 3. *Reliqu. rudb. t.* 12. *f.* 3.
All the flowers awned, the lateral ones male, involucels rugged, the interior ones of the males ſemilanceolate.

9. Hordeum jubatum. *Long-bearded Barley-graſs.*
Lin. ſpec. 126. *ſyſt.* 126. *Reich.* 1. 238.
Elymus crinitus. *Schreb. gram.* 2. 15. *t.* 24. *f.* 1.
Gramen hordeaceum, ſpica ariſtis longiſſimis circumvallata. *Scheuch. agr.* 20. *Buxb. cent.* 1. 33. *t.* 52. *f.* 1. (bad).
Awns and involucres briſtle-ſhaped and very long.]

DESCRIPTIONS, &c.

1. The firſt ſort is the common Spring Barley, which is principally cultivated in England; of this the farmers make two ſorts, viz. the common and rath-ripe Barley, which are the ſame: for the rath-ripe has only been an alteration, occaſioned by being long cultivated upon warm gravelly lands. The ſeeds of this, when ſown in cold or ſtrong land, will the firſt year ripen near a fortnight earlier than the ſeeds taken from ſtrong land; therefore the farmers in the vales, generally purchaſe their ſeed Barley from the warm land; for if ſaved in the vales two or three years, it will become full as late in ripening as the common Barley of their own product; and the farmers on the warm land are alſo obliged to procure their ſeed Barley from the ſtrong land, otherwiſe their grain would degenerate in bulk and fulneſs, which by thus changing is prevented. This ſort of Barley is eaſily diſtinguiſhed by the two orders of beards, or awns, which ſtand erect; the chaff being alſo thinner than that of the ſecond and fourth ſorts, is eſteemed better for malting.

2. The ſecond ſort is rarely cultivated in the ſouthern parts of England, but in the northern counties, and in Scotland, is generally ſown, being much hardier than the other ſpecies, ſo will bear the cold; this has its grains diſpoſed in ſix rows: the grain is large and plump, but it is not ſo good for malting, which is the reaſon for its not being cultivated in the ſouthern parts of England, where the other ſorts, which are much better for that purpoſe, thrive well.

3. The third ſort is the long-eared Barley, which is cultivated in many parts of England, and is an exceeding good ſort; but ſome farmers object to it becauſe they ſay the ears being long and heavy, it is more apt to lodge; this has the grains regularly ranged in a double row, lying over each other like tiles on a houſe, or the ſcales of fiſhes. The huſk, or chaff of this Barley is alſo very thin, and is much eſteemed for malting.

4. The fourth ſort is uſually called Sprat Barley; this has ſhorter and broader ears than either of the other ſorts; the awns, or beards, are longer, and the grains are placed cloſer together, and the awns being long, the birds cannot ſo eaſily get out the grains; this ſeldom grows ſo tall as the other ſpecies, and the ſtraw being ſhorter and coarſer, is not very good fodder for cattle.

1. In Spring Barley the lower flowers are apt to be imperfect. The ſpike is as it were diſtich, though there are ſeveral rows. In all the flowers the two glumes or chaffs of the calyx are ſhorter than the flower, awl-ſhaped, and end in a ſhort awn or beard. The outer corolline chaff is much hollowed, with the ſides folded in, the back ciliated, and the tip continued into an awn three inches in length: the inner chaff is awnleſs [a].

It is not known where this or any other ſort of grain grows wild. Cardan pretended that Barley was a native of Athol in Scotland! Reideſel ſays the ſame of Sicily: and it has lately been affirmed to be found on the banks of Samara, a river of Tartary. Diodorus Siculus aſcribes the firſt culture of Barley to Oſiris, who diſcovered it in a wild ſtate. The ancients fed their horſes with barley, as we do with oats. It was eaten alſo in bread by the lower ſort of people; and the Gladiators were called *Hordearii*, from their feeding on this grain [b]. In ſome of the ſouthern parts of Europe they have two crops of Barley; one ſown in autumn and cut in may, and another ſown in ſpring and cut in autumn. In ſome of the northern parts of Europe it is called *Korn* excluſively; and it is much cultivated there on account of its taking a leſs time to ripen than other ſorts of grain. In Lapland fifty-eight days only, or about two months, elapſe, between the ſowing and the cutting it. But it is the ſecond ſort which is uſually ſown in northern climates. Rath-ripe or Patney Barley is ſaid to have been returned to the barn in England in two months.

β. Siberian Barley, called in German *Himmelſgerſte* or *Himmelſkorn*; in Daniſh, *Himmelſbyg* or *Thorebyg*; in Swediſh, *Himmelſkorn*; in French, *Orge celeſte*, was introduced in 1768 by Mr. Haliday, who received a wine-glaſs full of this grain on the 25th of may 1767, from a member of the ſociety of Arts, &c. at London, with this information, that a foreign nobleman had preſented that ſociety with about a pint of it, and that it came from Siberia. In 1768, Mr. Haliday, having near a quart of the ſeed, ſowed the whole in drills, the firſt week in may. The produce was hung up in ſacks in the ear, and in the beginning of april 1769 was threſhed out, and produced near a buſhel. On the 19th and 20th of that month it was ſown in drills, and was reaped on the 14th and 15th of auguſt. The produce was about thirty-ſix buſhels of clean corn.

Two buſhels, weighing 132 pounds, being ſent to the mill, yielded 80 pounds of fine flour, equal to London ſeconds, 40 pounds of a coarſer ſort, and 12 pounds of bran ſuperior to wheat bran. The beſt flour made excellent bread, ſufficiently light, and ſo retentive of moiſture, as to be as good twelve or fourteen days after baking, as wheaten bread on the fourth day. And 12 pounds of barley, and the ſame quantity of wheat flour, equally fine, being made into bread, and baked in the ſame oven, the wheaten loaf weighed 15, and the barley 18 pounds. Two buſhels of it being malted, were brewed into a half barrel of ale and another of ſmall beer, both of which proved very good [c].

Siberian Barley has a broader blade of a much deeper green than common Barley, at firſt coming up; the ears are ſhorter, having only from five to nine grains in length, whereas thoſe of the common ſort have from nine to thirteen; and in all ſtages it is a fortnight forwarder than common Barley. The two ſorts being ſown in the ſame field on the 28th of april 1774, three buſhels of each, the common Barley produced thirty-ſix buſhels and a half weighing 52 pounds each, and the Siberian procured thirty-two buſhels weighing 58 pounds each: but the ſoil was very dry, and much inclined to a gravel, which was much to the diſadvantage of the latter, for it requires a richer land [d].

2. Winter or Square Barley, commonly called Bear Barley, Bere or Big, having ſix rows of grain, has a much thicker ſpike than common or ſpring Barley; but it is alſo much ſhorter: the number of grains

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[a] Haller.
[b] Plin. 18. c. 7.
[c] Hunter's Eſſays, p. 133.
[d] Bath papers, 1. 108.

however in an ear or ſpike is greater, in the proportion of at leaſt three to two. I have frequently counted forty-two grains, when common Barley had only twenty-two. The ear is ſeldom more than two inches in length; it is ſquare, with two rows of grains on two of the ſides; on the other two a ſingle row of grains runs up the middle, ſo that the former rows are awned only laterally, and the latter on the ſides and along the middle alſo. The lower flowers are imperfect in both. The outer valve of the corolla has a rough awn or beard from four to ſix inches in length.

This ſpecies is ſeldom cultivated in the ſouthern parts of England, the grain, though large and plump not being eſteemed ſo good for malting as common Barley: but in the northern counties and in Scotland it is generally ſown, becauſe it will bear the cold much better. In ſome of the more ſouthern parts of Europe it is ſown in autumn.

3. Common or Long-eared Barley differs eſſentially from the two others. The ſpike or ear is very long, flatted, or tranſverſely greater in breadth than thickneſs, with a double row of defective or male, and conſequently barren florets on each flat ſide, and a ſingle row of fertile florets at each edge. The valves of the calyx, outer glume, huſk or chaff are linear, and ſhorter by half than the corolla or inner chaff, which ends in an awn or beard which is ſtraight and ſixteen times its own length, when ripe it is coriaceous, angular, and continues cloſe about the grain; when this is taken off the grain appears of an ovate form, grooved and angular[e].

β. Mortimer ſays that they cultivated in Staffordſhire *Tritico-Speltum*, a ſort of naked Barley or Wheat-Barley, the ear ſhaped like Barley, but the grain like Wheat; that it is much ſown at Rowley, Hamſtal, and Redmore, where they call it French Barley; that it makes good bread, and good malt, and yields a good increaſe[f]. No mention being made of this graiin in Mr. Pitt's View of the Agriculture of this County, drawn up for the conſideration of the Board of Agriculture, and printed in 1796; we may conclude that it is no longer cultivated there.

Villars deſcribes it as having a larger, finer grain, the weight and ſize of Wheat, and ſeparating from the huſk, whence its name; he adds that it is nicer reſpecting ſoil, and more difficult to cultivate, but yields a larger produce, and is of a better quality than common Barley.

4. Sprat or Battledore Barley, differs from the common ſort in being of a lower ſtature, and in having a ſhorter, broader ear, with cloſer grains, ſtanding out more from the rachis, and having ſhorter awns. Between the two rows of fertile flowers, are two other rows of male or barren flowers, as in the preceding ſpecies, but more conſpicuous[g].

Barley in Greek Κριθη; in Latin *Hordeum*; in German is *Gerſte*; in Dutch, *Gerſt*; in Daniſh, *Byg*; in Swediſh, *Biugg* or *Korn*; in French, *Orge*; in Italian, *Orzo*; in Spaniſh, *Cebada*; in Portugueze, *Cevada* or *Sevada*; in Ruſſian, *Jetſchmen* or *Jeſmin*.

5. Bulbous Barley-graſs is ſo named from its bulbous roots, wrapped up in whitiſh or browniſh, broad, membranaceous, fibrous coats, and having ſtrong fibres hanging from them. Culms two or three, from a foot or eighteen inches to three and even four feet high in different ſituations, with four or five joints; the ſheaths of the lower leaves hirſute with ſhort cloſe hairs; of the upper ſmooth and ſtriated, ending in a thin, white, ſubdiaphanous membrane (or ligule) about half a line in length. Leaves a ſpan or a foot, ſometimes only a hand long, a line and a half or two lines wide, rough and finely toothletted at the edge, having very ſhort hairs on both ſurfaces, but not ſo many on the lower. Spike narrow, three or four, ſometimes near ſix inches long, and three or four lines broad. The two lateral florets in each ſet are on a pedicel half a line in length, and are themſelves near half an inch long, with awns near an inch in length, flatted at bottom: the middle floret is ſeſſile, about five lines in length, with the outer glume ending in an awn uſually more than an inch long, and at the baſe two other awns eight or ten lines long[h].

Native of Italy and the Levant. Scheuchzer found it about Rome in may. Introduced here in 1770, by Monſ. Richard[i].

6. Common Wall Barley-graſs, Way-Barley, Way-Bennet, or rather Way-Bent; called alſo Wild Rie or Rie-graſs, has an annual root; numerous ſtems a foot or eighteen inches in height, round, ſmooth, frequently branching at bottom, where they are procumbent, and bend at the joints; theſe are about five in number, ſwell out, and are either paler than the reſt of the culm or tinged with purple; the upper part of them is erect. Leaves from three or four to ſix inches in length, and a quarter of an inch in breadth, covered with a ſoft down on both ſides. Spikes from two to three inches long, pale green: the middle floret of each ſet is fertile and ſeſſile; the lateral ones are male and on very ſhort pedicels; all three are alike in ſize and ſhape, or ſometimes the latter are a little ſmaller. The outer valve of the corolla ends in an awn an inch or an inch and half in length, and rough when handled from the point downwards; the inner valve is truncate at the end, and ſlightly emarginate, from the baſe ſprings a ſtraight awn, the length of the filaments.

This is a very common graſs by the ſide of paths and under walls, whence its trivial names both in Latin and Engliſh. It flowers during the greater part of the ſummer. In the iſle of Thanet it is ſaid to be well known to the innkeepers by the name of Squirrel-tail graſs. They find that if horſes feed on it ſome time, the beards ſtick into their gums, and make them ſo ſore, that they are in danger of being ſtarved. The gentleman who related this fact, added, that on the road he had a bill put into his hand, ſignifying, that at ſuch an inn travellers might depend on having hay without any mixture of Squirrel-tail graſs[k].

Wall Barley-graſs never being found in the body of a meadow, it may be doubted whether it is not rather the next ſpecies which produced this bad effect, and if ſo that muſt not be recommended for culture.

It is an old notion that this Graſs is Barley degenerated, though it bears more reſemblance to Rie. Haller ſeriouſly combats this error, but it is ſurely now too vulgar an one to be neceſſary to contradict it.

Wall Barley-graſs in German is *Manſegerſte*, *Gerſtengras*, *&c.* In Dutch, *Muurgerſt*, *Baſtardgerſt*, *Muizenkorn*. In Daniſh, *Byggræs*, *Fandens-ax*. In Swediſh, *Villkorn*. In French, *Orge des murs*.

7. Meadow Barley-graſs, from its reſemblance to Rie named by Johnſon Rie-graſs, was ſuppoſed by Linneus to be nothing more than a variety of the preceding. Ray obſerved long ſince, that it differs in being much taller, and having ſhorter ſpikes and awns. Its height is almoſt double that of the other. The ſpike is more green, only half the length of that, ſquare, with the awns of the calyx as long as thoſe of the corolla. The anthers alſo are three times as long as in H. murinum, and yellow, whereas in that they are blueiſh, and almoſt ſquare. None of the involucres are ciliate. The middle floret is ſmooth; the two lateral ones, though they have a piſtil as well as ſtamens, yet being very minute, they never come to maturity. Our Engliſh authors mark it as perennial; Monſ. Villars takes it to be annual.

Native of Sweden, Denmark, France, Switzerland, England, and probably moſt parts of Europe, in good meadows, of which it ſometimes forms a conſiderable portion.]

Mr. Miller affirms that this is a very good graſs for paſtures, and has perennial roots, with leafy ſtalks that do not become ſtiff and harſh: and that, if duly rolled, the roots will mat and form a very cloſe ſward. [It is however a late graſs, and is thought not to be ſo productive as ſome others. For *Ray-graſs*, which is ſometimes, but erroneouſly, called Rie-graſs, and is very different from this, ſee *Lolium perenne.*

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[e] Gærtner.

[f] Huſbandry, p. 102. edit. 2.

[g] Ray hiſt. and Baub. hiſt.

[h] Scheuchzer.

[i] Hort. kew.

[k] Curtis.

8. At firſt ſight this reſembles the common Wall Barley-graſs, inſomuch that it might be doubted, until experiments are made by culture, whether it be a diſtinct ſpecies; becauſe ſalt water and ſea air make graſſes put on a different appearance. It differs however in having ſhorter pyramidal ſpikes, made up of a greater number of florets, more crowded together, with the awns more ſtanding out, thoſe at bottom longeſt, and becoming gradually ſhorter towards the top of the ſpike[l]. The involucres are roughiſh, neither ciliate nor ſcored. Florets ſmooth, the middle one in each ſet ſeſſile, the lateral ones on very ſhort pedicels at the baſe of their involucre, and their awns ſomewhat longer than the floret[m].

Native of Barbary and the ſouthern parts of Europe, and of England, in ſalt marſhes near the ſea; flowering in june and july.

This is marked as annual both by Engliſh and foreign botaniſts, and is deſcribed by Allioni under the name of *Hordeum geniculatum*. He ſays it differs evidently from the next ſpecies, and that in cultivation it acquires a loftier culm, with a ſpike twice or thrice as long as in the wild plant, but that the character of the incurved culm continues.

9. This has the habit of H. murinum, but the involucres and briſtle-ſhaped awns are four times the length of the whole ſpike, which gives this graſs a ſingular appearance[n].—The ſtem-leaves are four or five inches long, and a line or a line and half wide, villoſe with ſhort hairs above, below eſpecially towards the top rough, if drawn downwards through the fingers. Awn four, five, or near ſix inches in length[o].

Linneus, in the ſpecies plantarum, aſſigns Canada for the native place of this graſs, and Kalm for the diſcoverer. In the 13th and 14th editions of the ſyſtema vegetabilium it is ſaid to be a native of Smyrna: and Scheuchzer ſays that it was ſent from Smyrna by Sherard. In the catalogue of the royal garden at Kew it is aſſigned to Canada and Hudſon's Bay; and is ſaid to have been introduced in 1782, by the Hudſon's Bay Company. In the latter work it is marked as biennial. It is ſurely improbable that of graſſes ſo nearly allied as theſe ſome ſhould be annual, others biennial, others perennial. Schreber refers this ſpecies to Elymus, as Hordeum ſylvaticum is by moſt botaniſts, and alſo Triticum caninum.]

PROPAGATION AND CULTURE.

Barley.

1—4. All the ſorts of Barley are ſown in the ſpring of the year, in a dry time; in ſome very dry light land, Barley is ſown early in march; but, in ſtrong clayey ſoils, it is not ſown till april, and ſometimes not until the beginning of may; but when it is ſown late, if the ſeaſon does not prove very favourable, it is late in autumn before it is fit to mow, unleſs it be the rath-ripe ſort, which is often ripe in nine weeks from the time of ſowing.

Some ſow Barley upon land where Wheat grew the former year; but when this is practiſed, the ground ſhould be ploughed the beginning of october in a dry time, laying it in ſmall ridges, that the froſt may mellow it the better, and this will improve the land greatly; and if this can be ploughed again in january, or the beginning of february, it will break and prepare the ground better; then in march the ground is ploughed again, and laid even where it is not very wet; but in ſtrong wet lands the ground ſhould be laid round, and the furrows made deep to receive the wet. When this is finiſhed, the common method is to ſow the Barley-ſeed with a broad caſt at two ſowings; the firſt being harrowed in once, the ſecond is harrowed until the ſeed is buried; the common allowance of ſeed is four buſhels to an acre. This is the quantity of grain uſually ſown by the farmers; but if they could be prevailed on to alter this practice, they would ſoon find their account in it; for if leſs than half that quantity is ſown, there will be a much greater produce, and the corn be leſs liable to lodge, as I have many years experienced; for when corn or any other vegetable ſtands very cloſe, the ſtalks being drawn up weak, are incapable to reſiſt the force of winds, or bear up under heavy rains: but when they are at a proper diſtance, their ſtalks will be more than twice the ſize of the other, and are ſeldom laid. I have frequently obſerved in fields where there has been a foot-path through the middle, that the corn which has ſtood thin on each ſide the path has ſtood upright, when all the reſt on both ſides has been laid flat on the ground: and whoever will obſerve theſe roots of corn near the paths, will find them tiller out (i. e. have a greater number of ſtalks) to more than four times the quantity of the other parts of the field. I have ſeen experiments made by ſowing Barley in rows acroſs divers parts of the ſame field, and the grains ſowed thin in the rows, ſo that the roots were three or four inches aſunder in the rows, and the rows at a foot diſtance; the intermediate ſpaces of the ſame field were at the ſame time ſown broad caſt in the uſual way; the ſucceſs was this, the roots which ſtood thin in the rows tillered out from ten or twelve, to upward of thirty ſtalks on each root, the ſtalks were ſtronger, the ears longer, and the grains larger than any of thoſe ſown in the common way; and when thoſe parts of the field where the corn was ſown in the uſual way have been lodged, theſe parts ſown thin have ſupported their upright poſition againſt wind and rain, though the rows have been made not only lengthways, but croſs the lands, in ſeveral poſitions, ſo that there could be no alteration in regard to the goodneſs of the land, or the ſituation of the corn; therefore where ſuch experiments have been frequently made, and always attended with equal ſucceſs, there can be no room to doubt which of the two methods is more eligible; ſince if the crops were only ſuppoſed to be equal in both, the ſaving more than half the corn ſown is a very great advantage, and deſerves a national conſideration, as ſuch a ſaving, in ſcarce times, might be a very great benefit to the public. I know the farmers in general are very apt to complain if their corn does not come up ſo thick as to cover the ground green in a ſhort time, like Graſs fields: but I have often obſerved, that when from the badneſs of the ſeaſon it has come up thin, or by accident has been in part killed, their corn has been ſtronger, the ears longer, and the grain plumper, ſo that the produce has been much greater than in thoſe years when it has come up thick; for the natural growth of corn is to ſend out many ſtalks from a root, and not riſe ſo much in height; therefore it is entirely owing to the roots ſtanding too near each other, when the ſtalks are drawn up tall and weak. I have had eighty-ſix ſtalks upon one root of Barley, which were ſtrong, produced longer ears, and the grain was better filled than any which I ever ſaw grow in the common method of huſbandry, and the land upon which this grew was not very rich: but I have frequently obſerved on the ſides of hot-beds in the kitchen-gardens, where Barley-ſtraw has been uſed for covering the beds, that ſome of the grains left in the ears having dropped out and grown, the roots have produced from thirty to ſixty ſtalks each, and thoſe three or four times larger than the ſtalks ever arrive at in the common way: but to this I know it will be objected, that although upon rich land in a garden, theſe roots of corn may probably have ſo many ſtalks, yet in poor land they will not have ſuch produce; therefore unleſs there is a greater quantity of ſeeds ſown, their crop will not be worth ſtanding, which is one of the greateſt fallacies that can be imagined; for to ſuppoſe that poor land can nouriſh more than twice the number of roots in the ſame ſpace as rich land, is ſuch an abſurdity, as one could hardly ſuppoſe any perſon of common underſtanding guilty of; and yet ſo it is, for the general practice is to allow a greater quantity of ſeed to poor land, than for richer ground; not conſidering that where the roots ſtand ſo cloſe, they will deprive each other of the nouriſhment, and ſtarve themſelves, which is always the caſe where the roots ſtand cloſe; and this a perſon may at firſt ſight obſerve, in any part of the fields where the corn happens to ſcatter when they are ſowing it; or in places where, by harrowing, the ſeed is drawn in heaps, thoſe patches will ſtarve, and never grow to a third part of the ſize as the other parts of the ſame field; and yet common as this is, it is little noticed by farmers, otherwiſe they ſurely would not continue their old cuſtom of ſowing. I have made many experiments for ſeveral years in the pooreſt land, and have always found that all crops which are ſown or planted at a greater diſtance than uſual, have ſucceeded beſt; and I am convinced, if the farmers could be prevailed on to quit their prejudices, and make trial of this method of ſowing their corn thin, they would ſoon ſee the advantage of this huſbandry.

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[l] Ray. [m] Withering. [n] Linn. ſpec. [o] Scheuchzer.

When the Barley is ſown, the ground ſhould be rolled after the firſt ſhower of rain, to break the clods and lay the earth ſmooth, which will render it better to mow, and alſo cauſe the earth to lie cloſer to the roots of the corn, which will be of great ſervice to it in dry weather.

Where Barley is ſown upon new broken up land, the uſual method is, to plough up the land in march, and let it lie fallow until june, at which time it is ploughed again, and ſown with Turneps, which are eaten by ſheep in winter, by whoſe dung the land is greatly improved; and then in march following the ground is ploughed up again, and ſown with Barley as before.

There are many people who ſow Clover with their Barley, and ſome have ſown Lucerne with Barley; but this method is not to be commended, for where there is a good crop of Barley, the Clover or Lucerne muſt be ſo weak as not to pay for ſtanding; ſo that the better way is to ſow the Barley alone without any other crop among it, and then the land will be at liberty for any other crop, when the Barley is taken off the ground; but this practice of ſowing Clover, Rye-graſs, and other Graſs-ſeeds, with corn, has been ſo long and univerſally eſtabliſhed among farmers, that there is little hope of prevailing with thoſe people to alter a cuſtom which has been handed down to them from their predeceſſors, although there ſhould be many examples produced, to ſhew the abſurdity of this practice.

When the Barley has been up three weeks or a month, it will be a very good method to roll it over with a weighty roller, which will preſs the earth cloſe to the roots of the corn, and thereby prevent the ſun and air from penetrating the ground, which will be of ſingular ſervice in dry ſeaſons; and this rolling of it before it ſtalks, will cauſe it to till out into a greater number of ſtalks; ſo that if the plants ſhould be thin, this will cauſe them to ſpread ſo as to fill the ground, and likewiſe ſtrengthen the ſtalks.

The time for cutting Barley is, when the red colour of the ears is off, and the ſtraw turns yellow, and the ears begin to hang down: in the north of England they always reap their Barley, and make it up in ſheaves, as practiſed here for Wheat, by which method they do not loſe near ſo much corn, and it is alſo more handy to ſtack; but this method cannot ſo well be practiſed where there are many weeds amongſt the corn, which is too frequently the caſe in the rich lands near London, eſpecially in moiſt ſeaſons; therefore when this is the caſe, the Barley muſt lie on the ſwarth till all the weeds are dead; but as it is apt to ſprout in wet weather, it muſt be ſhaken up, and turned every fair day after rain to prevent it. When it is carried in, it ſhould be thoroughly dry, otherwiſe if it be ſtacked wet, it will turn muſty; or if too green, it is ſubject to burn in the mow. The common produce of Barley, is two and a half, or three quarters on an acre, but I have ſometimes known ſix or ſeven quarters on an acre.

[*Time of ſowing Barley.*

The farmer is governed by ſeaſons, and by other neceſſary work which he may have to perform; but when he can, to ſow early is one of the moſt important articles in the culture of Barley. If three ploughings can be given in time, it is beſt to get the ſeed in ſome time in march at fartheſt; and ſome farmers, rather than defer the ſowing, will throw in the crop on one earth [p]. In Norfolk they commonly ſow on their light lands in april, and on the moiſt lands in may; and they think that where they are much ſubject to weeds, they have the beſt crops when they ſow late. Early ſowing, however, has been gaining ground for ſome years paſt. And it appears from an experiment accurately made by a very intelligent cultivator, that more grain was produced from ſowing in january than at any other time. The land was a deep ſand, valued at ſix or ſeven ſhillings the acre; it had been under clover, and was folded the ſame as for wheat, in november. Two buſhels of Barley were ſown on the 16th of november, 1785, and harrowed in, upon one earth only; and the ſame quantity was ſown the middle of every month till may 1786 incluſive. The firſt ſown came up a week ſooner than the wheat ſown on the ſame day by the ſide of it, and was very flouriſhing till the firſt ſharp froſt ſet in, which damaged the blade, but did not ſeem to affect the root. The other ſowings had two earths; one caſt, or half the ſeed, was ploughed in, and the other half harrowed in. The ſecond ſharp froſt killed ſome of the ſecond ſowing, and a good deal of the firſt; but both, together with that ſown in january, ſeemed to ſuffer ſtill more, by the ſharp cutting winds in the month of march, when there was no ſnow to cover the blade. Theſe three ſowings, particularly the firſt, had their plants very much thinned by the froſts and winds; but the roots that were left ſtubbed very much in the ſpring, and had very long ears, with from thirty to thirty-ſix grains in each. The ſowings in february and march loſt few if any of their plants, and were both forward enough to be harveſted on the ſame day with the three preceding ſowings. That ſown in april was full a fortnight later, and the laſt ſown in may was entirely deſtroyed by rooks, there being no other ſown ſo late in the neighbourhood. It would have been the ſame with the early ſowings, had not the evil been guarded againſt. However advantageous therefore early ſowing may be, yet neither this nor any other laudable practice will be of any avail in open fields, where lands are intermixed, unleſs where there is a general conſent; and if one farmer only were to ſow early, he muſt have as many keepers as he has pieces of land, and thus have a better crop than his neighbours at an expenſe which would turn it to his diſadvantage. All the barley ſown was of the Zealand ſtock, and the produce was as follows:

	Pecks.	Qrs. Pecks.	Pints.		Coombs.	Buſhels.	Pecks.	Quarts.
1. November	3	0	0	or on an acre	12	2	1	
2. December	3	0	1	———	12	3	1	1½
3. January	3	1	0	———	13	0	¾	
4. February	2	3	2	———	11	2	2¼	
5. March	2	2	2	———	10	3	3¾	1
6. April	2	0	2	———	8	3	2¼	1

The whole land ſown was ſeventy-two ſquare yards, or little more than two thirds of an acre, and all the ſowings were by the ſide of each other, on the ſame piece of land. Three ſwaths of each ſowing, twelve yards in length, where the ſoil was moſt equal, were threſhed out; and each parcel was dreſſed and meaſured into a ſack ſeparately as ſoon as threſhed [q].

The following experiments were tried by the late Earl of Orford to aſcertain the effect of early ſowing.

The common management of the turnep huſbandry in Norfolk has this evil in it, that the crop is kept for feeding ſo late in the ſpring, that the ſucceeding barley often ſuffers conſiderably, ſometimes to the amount of the value of the turneps.

In 1785, twenty-three acres of turneps being fed off, barley was ſown, three buſhels and a half to the acre on the 7th of february, in the manner of wheat on the ridge; the land having been half ploughed, on to four-furrow ridges. Sharp froſts followed the ſowing, and the ſeed laid five weeks before it appeared; but the crop received injury. It was reaped.

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[p] Young's Six Weeks Tour, 277.

[q] Macro in Young's Annals, 7. 183.—See 4. 187.

The produce was five quarters, one buſhel, and one peck on an acre; a very good and ſhort ſample.

In 1787, thirty acres were ſown as before, on turnep land, and on ridge and furrow; beginning on the 6th of february. The produce five quarters one peck on an acre; the ſample ſhort and good, weighing fourteen ſtone ſeven pounds the ſack.

It has been ſaid, if turneps be fed off ſo early, what is to be done for food later? The right time certainly to eat a crop is when it will yield the moſt food, and go the fartheſt. Turneps are often kept till they are good for nothing, and it is no uncommon thing to have them given away to be fed off, for what the farmers call time for barley; that is in april, and even the beginning of may. By this contrivance the turneps are worth nothing, the land is impoveriſhed by them, and there is no chance of good barley. Would it not be much better for the farmer to have other reſources for his ſheep, than run ſuch great hazard, and ſuffer ſuch certain loſs? Would it not be better never to venture barley after late-fed turneps, but to reſerve ſuch land for cabbages? Yet even where lands are fed off by the end of january, and in the caſe of any other preparation for barley, the farmers ſtill leave their lands till their common ſeed-time (april or may), that by giving more tillage, they may get worſe crops.[r].

In that part of Eſſex where they underſtand the Barley-culture well, they deſpair of a great crop, if the ſeed is not in the ground in march; but they ſow as ſoon as their lands are dry enough, from the laſt week in february to the middle of april. Mr. Young obſerves on this practice, that early ſowing is a point almoſt ſufficient to turn the ſcale in favour of bad land, in compariſon with good ill-managed. In Suffolk they generally give three ſpring ſtirrings, by which means it is common to ſee them ſowing Barley in may; but no great or good crops can be gained ſo[s]. When Barley is to follow turneps, the beſt farmers in many ſeaſons watch the lucky moment of ploughing their turnep lands, when they will break up into fine mould; one earth will then bring them into crumbling order, and the harrows make them as fine as a garden: in ſuch a caſe the ſeed is got in early, and the land at the ſame time is in good tillage[t].

After all, the ripening of the crop will depend upon the time, not of the ſeeds being ſown, but of their vegetating; and therefore unleſs the ſeaſon be propitious, and the land in proper order, early ſowing of itſelf will avail little[u].

In Norfolk they have a maxim which ſhews that they attended to the foliation of trees as a direction for the proper time of ſowing Barley, long before Linneus recommended it.

> "When the oak puts on his goſling gray,
> "'Tis time to ſow barley night and day."

That is, when the oak puts on that gray appearance, which it does at the time the buds are burſting, a few days previous to the expanſion of the leaves, no time ſhould be loſt in getting the ſeed-barley into the ground[x].

Mr. Marſhall prefers the flowering of the Hawthorn to the leafing of the Oak for this purpoſe; and ſays, that the Barley ſhould vegetate while the hawthorn is blowing[y].

Soil proper for Barley.

The beſt ſoil for Barley is that which is dry and healthy, rather light than ſtiff, but yet of ſufficient tenacity and ſtrength to retain the moiſture. If the land be poor, it ſhould be dry and warm, and when ſo, will often bear better corn than richer land in a cold and wet ſituation[z]. Much Barley, however, is grown on heavy lands, both after wheat and on a fallow.

Succeſſion and Preparation of Land.

Barley uſually ſucceeds wheat or turneps, ſometimes Vetches and other crops, or is put in on a fallow, or on turf. After wheat, the ſoil is winter-fallowed by three ploughings; the firſt lengthways in november; the ſecond acroſs in march; the laſt or ſeed-ploughing lengthways. Between the two laſt ploughings the ſoil is harrowed, and the quich, if any, deſtroyed[a].

In Norfolk, when wheat-ſowing is finiſhed, the farmer begins to *ſcale* in his wheat-ſtubbles for a winter fallow. If the land lie in narrow work, the ridgelets are ſplit; if in warps, the ground is likewiſe ploughed clean, but very fleet. The beginning of march the land is harrowed, and preſently after the wheat-ſtubbles are taken up by a full-pitch croſs-ploughing; or, if the ſeaſon be wet, and the ſoil heavy, he reverſes the ridges. In april he harrows, and begins ſtirring for barley, with another full-pitch ploughing, lengthways; generally gathering the ſoil either into five-pace or ten-pace warps, in which it lies until ſeed-time; when it is harrowed, rolled, ſown; ploughed fleet, reverſing the warps, and *ſlading* down the furrows; ſo as to render the entire ſurface as even and level as may be.

After turneps, the ſoil is generally broken up as faſt as the turneps are got off; if early in winter, by rice-balking; if late, by a plain ploughing. The general practice, if time will permit, is to plough three times; the firſt fleet or ſhallow, the ſecond full-pitch, the laſt a mean depth, with which the ſeed is ploughed in.

But when it is late before the turneps are got off, ſometimes the ground is only ploughed once, and the ſeed ſown above; but more frequently it is broken by three ploughings, as above, though perhaps there is not more than a week to perform them in. Such is the practice in Norfolk, where farmers in general are maſters in the art of cultivating Barley. They ſeem fully aware of the tenderneſs of this plant in its infant ſtate, and of its rootlings being unable to make the proper progreſs in a compact or cold ſoil; they therefore ſtrive by every means in their power to render the ſoil open and pulverous. To this intent it is ſometimes two-furrowed, and even a fourth earth is given, eſpecially in a cold wet ſeaſon.

Nor is this caution confined to turnep-barley, but ſhould be extended more or leſs to ſtubble-barley, which however does not require ſo much care; the ſoil in this caſe being kept open in ſome meaſure by the indigeſted ſtubble, and the roots of graſſes and other weeds, which a turnep-fallow is, or ought to be free from. This perhaps may account for the ſuperiority of ſtubble-barley over that which is produced by a turnep-fallow, though ever ſo well timed and well manured[b].

In ſowing Barley after a fallow they plough three times at leaſt. At the firſt ploughing, the land is laid up in ſmall ridges, and left ſo during the winter, for the froſt to mellow it; the ſecond ploughing ſhould be the beginning of february. In march they ſplit the ridges, and lay the land as flat as poſſible, at the ſame time harrowing it fine. But in ſtrong wet lands they lay it round, and make deep furrows to receive the water[c].

In Eſſex they plough five times, four in the fallow year, throwing the land on to the ridge for winter by the fourth; then they take the firſt opportunity of hard froſts to carry on their compoſts, at the rate of twenty or thirty loads to the acre; theſe are farm-yard dung mixed up with turf; after this, they take the firſt opportunity of the lands being dry enough to plough and ſow the Barley, from the laſt week in february, to the middle of april; but if the ſeed is not in the ground in march, they deſpair of a great crop. This barley-culture is very good; it is an excellent practice to plough and ſow in the ſpring, inſtead of giving preparatory ploughings when the ſeed ſhould be in the earth[d].

When Barley is put on turf, or after lay, as Clover, &c. the turf is generally broken by a winter-fallow, and the ſoil treated in other reſpects, as after wheat.—In very light dry ſoils it may be right to break the flag as little as poſſible, provided the graſs be killed; in this caſe they do not break up the turf till after

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[r] Young's ann. 9. 385.
[s] Six weeks tour, 78, 82.
[t] Ibid. p. 278.
[u] Marſhall's Midl. Counties, 2. 211.
[x] Marſh. Norfolk, 1. 238.
[y] Midl. 2. 213.
[z] Bath papers, 2. 96.

[a] Marſh. midl. 1. 241.
[b] Marſh. Norf. 1. 235.
[c] Bath papers, 2. 97.
[d] Young's Six weeks tour, 77.

Chriſtmas. With this proceſs they ſow the Barley above furrow[e].

Barley is ſeldom manured for, except in the laſt caſe, when ſown after lay; after turneps no manure can be requiſite; nor after wheat, if this has been manured for[f]. On a fallow, it is manured for as wheat.

Quantity of Seed, Preparation for, and Method of Sowing.

Many farmers ſow four buſhels of ſeed on an acre, which is too much; and ſome few ſow no more than two buſhels, which is generally allowed to be too little, after all that Mr. Miller has ſaid in favour of thin ſowing. Four buſhels is very general, but in ſome places, three buſhels and a half, and in others three buſhels is the average or medium quantity of Barley ſown.

The following experiments ſeem to confirm Mr. Miller's theory of ſowing thinner on poor ſoils. On an acre of poor ſand worth 3s. 6d. an acre, were ſown two buſhels of barley: on the next adjoining acre, three buſhels: on the next four buſhels. The reſult was, that the crop was beſt from two buſhels, next beſt from three, and the worſt from four.

On ſand worth 7s. an acre

2 buſhels produced	4½ quarters.
3 ————————	4¼
4 ————————	3 qu. 7 buſhels[g].

In other ſoils, the produce has been found to be greateſt from the greateſt quantity of ſeed ſown:

	Q.	B.	P.
4 buſhels produced	3	7	0
3 to 4 ————	3	6	0
3 ————————	3	0	2[h].

Again:—

2 to 3 buſhels produced	32 buſhels.
3½ to 4 ————————	33
4½ to 5 ————————	27[i].

Which proves that four buſhels is the moſt that ought to be ſown, and that ſcarcely needed a proof.

Brining and liming ſeed-barley previous to ſowing it is a common practice; it is, however, reprobated by ſome, and liming is even thought to be prejudicial. Such as are of the latter opinion, recommend the ſprinkling a little ſoot with the water, to ſecure the ſeed from inſects. It is certain that Barley, which has been wetted for malting, and begins to ſprout, will come up ſooner in a dry ſeed-time; and in ſuch a ſeaſon this grain will not only lie long in the ground, but come up and ripen very unequally. To avoid theſe evils, to give the infant Barley an advantage over ſeed-weeds, and a chance of coming to market ſooner, it ſeems a good method to ſteep the ſeed intended for ſowing. This may be either in clean water, or the drainings of the dung heap, in which it may lie covered for twenty-four hours, or even longer, if the land be very dry, and there be no likelihood of rain for ten days. Sow the grain wet from ſteeping, without any thing, or with ſifted wood-aſhes. The ſower muſt put in a fourth or a third more ſeed in bulk than he would of dry grain, the ſeed being ſwelled in that proportion; and he may expect it up in a fortnight at fartheſt[k].

The common method of ſowing Barley is broad-caſt at two ſowings; the firſt harrowed in once, the ſecond twice. In Norfolk, almoſt all the Barley is ſown under-furrow; that is, the ſurface having been ſmoothed by the harrow and roller, the ſeed is ſown and ploughed under with a ſhallow furrow: a method admirably adapted to a light dry ſoil; and indeed to any ſoil which is light enough to produce good Barley, provided it be rendered ſufficiently fine, and the ſeed be not buried too deep. However, if the ſeaſon be wet, and the ſoil cold and heavy, good farmers not unfrequently ſow Barley above, as is the general cuſtom in other counties. And this ſeems to be a reaſonable practice; for in a dry ſpring and light land, ſowing under ſeems moſt eligible; and in a cold ſpring, or when the ſoil is rough with clods, ſowing above appears to be equally good management.

Cultivation after ſeeding.

Whether graſs-ſeeds are ſown over the Barley or not, the ſurface is harrowed preſently after the laſt ploughing; and when the Barley is up, it is run over with a light roller, to break the clods, and cloſe the earth about the roots, which is a great advantage to it in dry weather. In heavy lands, if the harrow leaves any clods, they are broken with the clotting-beetle, and if any quich is pulled up, it is deſtroyed[l].

When the Barley has been up three weeks or a month, it is a good way to roll it again with a heavy roller, which will prevent the ſun and air from penetrating the ground to the injury of the roots. It will alſo cauſe the Barley to tiller out, ſo that if the plants be thin, the ground will be filled, and the ſtalks ſtrengthened.

If the blade ſhould grow too rank, mowing is a much better method than feeding it down with ſheep; becauſe the ſcythe takes off only the rank tops, but the ſheep being fond of the ſweet end of the ſtalk next the root, will often bite ſo cloſe as to injure it's future growth[m].

Drill ſowing.

Grain ſown by hand broadcaſt muſt fall at unequal depths; the ſeeds conſequently ſprout at different times: that which is buried where the earth is moiſt ſoon appears, whilſt ſuch as is near the ſurface lies baking in the heat of the ſun, and does not vegetate till plentiful rains have moiſtened the ſoil: hence an inequality of crop, an accident to which Barley is particularly liable[n]. Of the two common methods of ſowing Barley, ploughing in buries too deep, and that ſown under the harrow is too much expoſed to birds; whereas by the Drill the ſeed is all depoſited regularly at the proper depth[o].

To this advantage peculiar to drilling we may add, the ſaving which is made in the ſeed, and the opportunity which is given by this practice to keep the crop perfectly clean by hoeing. The quantity of ſeed uſed in drilling by different perſons is from ſix pecks to three buſhels; but it is bad economy in general to be too ſparing of ſeed, and it is hardly adviſeable to ſow leſs than two buſhels on an acre. If, however, it ſhould be thought proper to uſe even three buſhels, it will ſtill be a conſiderable ſaving. Drilling indeed cannot ſo well be practiſed on heavy ſoils; but it may have place on thoſe which are light and friable, and therefore peculiarly adapted to Barley. Such ſoils are not injured by horſes going repeatedly upon them, and being almoſt always under command, the horſe-hoe may go over them whenever the farmer is moſt at leiſure.

Dr. Hunter, in his Georgical Eſſays, gives us the following account of an experiment on this ſubject.— "In the ſpring of the year 1769, I ſowed an acre of Barley, in equidiſtant rows, with the drill-plough, in a field which was ſown with the ſame grain, and upon the ſame day, broad-caſt. The broad-caſt took three buſhels per acre; the drill required only ſix pecks. The drills were eight inches aſunder, and the ſeed was lodged about two inches within the ſoil. The drill acre was finiſhed within the hour.

In the courſe of growing the drilled Barley ſeemed greener, and bore a broader leaf than the broad-caſt. When the ears were formed throughout the field, the ear of the drilled Barley was plainly diſtinguiſhed to be near half an inch longer than the broad-caſt, and the grains ſeemed fuller and better fed.

Being at a loſs to account for this, I dug up ſome roots of both, and found that the pipe of communication between the ſeminal and coronal roots of the drilled Barley was conſiderably longer than in the broad-caſt.

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[e] Marſh. Norf. 1. 237. & 2. 102.

[f] Ibid. 1. 237.

[g] Le Blanc in Young's ann. 1. 111.

[h] Young's tour through the ſouthern counties, 253.

[i] Northern tour, 4. 248.

[k] Bath papers, vol. 2. 381. & 3. 304.

[l] Marſh. Norf. 1. 241. Midl. 1. 242. Bath papers, 2. 99.

[m] Bath papers, 2. 99.

[n] Hunter's Eſſay xvii.

[o] Young's ann. 18. 312.

The produce of two hundred ſquare yards of the broad-caſt and drilled Barley was carefully houſed, and afterwards threſhed out. The drilled exceeded the other nearly one-fifth in meaſure, and weighed heavier, at the rate of two pounds in the buſhel [p].

See more on this ſubject under Wheat in the article TRITICUM.

5, &c. For the culture of theſe ſee GRASS.

HORDEUM. See *Elymus* and *Triticum*.
HOREHOUND White. See *Marrubium*.
——— Baſe. See *Stachys*.
——— Black or Stinking. See *Ballota*.
——— Water. See *Lycopus*.
HORMINUM. See *Bartſia*, *Betonica*, *Meliſſa*, *Nepeta*, *Salvia*.]
HORN-BEAM, or HORN-BEECH TREE. See *Carpinus*.
[HORNED POPPY. See *Chelidonium*.
HORNED RAMPION. See *Phyteuma*.
HORNWORT. See *Ceratophyllum*.
HORSE-BEECH. See *Carpinus*.]
HORSE CHESTNUT. See *Æſculus*.
[HORSE-EYE BEAN. See *Dolichos*.
HORSE-MINT. See *Mentha*.
HORSE-PIPE. See *Equiſetum*.
HORSE-RADISH. See *Cochlearia*.
HORSE-SHOE VETCH. See *Hippocrepis*.
HORSE-TAIL. See *Equiſetum*.
——— Shrubby. See *Ephedra*.
HOSPITA. See *Kleinhovia*.]

HOT-BEDS are of general uſe in theſe northern parts of Europe, without which we could not enjoy ſo many of the products of warmer climes as we do now; nor could we have the tables furniſhed with the ſeveral products of the garden, during the winter and ſpring months, as they are at preſent in moſt parts of England, better than perhaps in any other country in Europe: for although we cannot boaſt of the clemency of our climate, yet England is better furniſhed with all ſorts of eſculent plants for the table, much earlier in the ſeaſon, and in greater quantities, than in the gardens of our neighbours, which is owing to our ſkill in Hot-beds.

The ordinary Hot-beds which are commonly uſed in the kitchen-gardens, are made with new horſe-dung, in the following manner:

1ſt, There is a quantity of new horſe-dung from the ſtable, in which there ſhould be part of the litter or ſtraw which is commonly uſed in the ſtable, but not in too great proportion to the dung, the quantity of this mixture muſt be according to the length of the bed intended; which, if early in the year, ſhould not be leſs than one good load for each light; this dung ſhould be thrown up in a heap, mixing therewith a few ſea-coal aſhes, ſome leaves of trees, and tan, which will be of ſervice to continue the heat of the dung; it ſhould remain for ſix or ſeven days in this heap; then it ſhould be turned over, and the parts well mixed together, and caſt into a heap again, where it may continue five or ſix days longer, by which time it will have acquired a due heat; then in ſome well ſheltered part of the garden, dig a trench in length and width, proportionable to the frames you intend it for; and if the ground be dry, about a foot deep; but if wet, not above ſix inches; then wheel the dung into the opening, obſerving to ſtir every part of it with a fork, and lay it exactly even and ſmooth through every part of the bed; as alſo to lay the bottom part of the heap, which is commonly free from litter, upon the ſurface of the bed; this will prevent the ſteam from riſing ſo plentifully as it would otherwiſe do. To prevent this, and the heat from riſing ſo violently as to burn the roots of whatever plants are put into the ground, it will be a very good way to ſpread a layer of neats dung all over the ſurface of the horſe-dung, which will prevent the mould from burning: if the bed is intended for Cucumbers or Melons, the earth ſhould not be laid all over the bed at firſt, only a hill of earth ſhould be firſt laid in the middle of each light on which the plants ſhould be planted, and the remaining ſpace ſhould be filled up from time to time, as the roots of the plants ſpread; but this is fully explained under thoſe two articles. But if the Hot-bed is intended for other plants, then after the bed is well prepared, it ſhould be left two or three days for the ſteam to paſs off, before the earth is laid upon the dung.

In the making of theſe Hot-beds, it muſt be carefully obſerved to ſettle the dung cloſe with a fork; and if it be full of long litter, it ſhould be equally trod down cloſe in every part, otherwiſe it will be ſubject to heat too violently, and conſequently the heat will be much ſooner ſpent, which is one of the greateſt dangers theſe ſort of beds may be liable to. During the firſt week or ten days after the bed is made, cover the glaſſes but ſlightly in the night, and in the daytime carefully raiſe them to let out the ſteam, which is ſubject to riſe very copiouſly while the dung is freſh; but as the heat abates, the covering ſhould be increaſed; otherwiſe the plants in the beds will be ſtinted in their growth, if not entirely deſtroyed. In order to remedy this evil, if the bed be very cold, you muſt put a pretty good quantity of new hot dung round the ſides of it, which will add a freſh heat thereto, and cauſe it to continue a conſiderable time after; and as the ſpring advances, the ſun will ſupply the loſs of the dung's heat; but then it will be adviſeable to lay ſome mowings of Graſs round the ſides of the bed, eſpecially if the nights ſhould prove cold, as it often happens in may, which is many times, even at that ſeaſon, very hurtful to tender plants on Hot-beds.

But although the Hot-bed I have deſcribed is what the kitchen-gardeners commonly uſe, yet thoſe made with tanner's bark are much preferable, eſpecially for all tender exotic plants or fruits, which require an even degree of warmth to be continued for ſeveral months, which is what cannot be effected by horſe-dung only. The manner of making theſe beds is as follows:

There muſt be a trench dug in the earth about three feet deep, if the ground be dry; but if wet, it muſt not be above a foot or ſix inches deep at moſt, and muſt be raiſed in proportion above ground, ſo as to admit of the tan being laid three feet thick. The length muſt be proportioned to the frames intended to cover it, but ſhould never be leſs than eleven or twelve feet, but if it is twice that length it will be better, and the width not leſs than ſix, which is the leaſt ſize of theſe beds to continue the heat. This trench ſhould be bricked up round the ſides to the above-mentioned height of three feet, paving the bottom with bricks to prevent the earth mixing with the tan, and ſhould be filled in the ſpring with freſh tanner's bark (i. e. ſuch as the tanners have lately drawn out of their vats, after they have uſed it for tanning leather) which ſhould be laid in a round heap for a week or ten days before it is put into the trench, that the moiſture may the better drain out of it, which, if detained in too great a quantity, will prevent its fermentation; then put it into the trench, and gently beat it down equally with a dung-fork; but it muſt not be trodden, which would alſo prevent its heating, by ſettling it too cloſe; then you muſt put on the frame over the bed, covering it with the glaſſes, and in about ten days or a fortnight it will begin to heat; at which time you may plunge your pots of plants or ſeeds into it, obſerving not to tread down the bark in doing it.

A bed thus prepared, if the bark be new, and not ground too ſmall, will continue in a good temper of warmth for two or three months; and when you find the heat decline, if you ſtir up the bark again pretty deep, and mix a load or two of freſh bark amongſt the old, it will cauſe it to heat again, and preſerve its warmth two or three months longer. There are many people who lay ſome hot horſe-dung in the bottom of the trench, under the bark, to cauſe it to heat; but this is what I would never practiſe, unleſs I wanted the bed ſooner than the bark would heat of itſelf, and then I would put but a ſmall quantity of dung at bottom, for that is ſubject to make it heat too violently, and will occaſion its loſing the heat ſooner than ordinary; and there will never be any danger of the bark's heating if it be new, and not put into the trench too wet, though it may ſometimes be a fortnight or more before it acquires a ſufficient warmth, but then the heat will be more equal and laſting.

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[p] Eſſay xvii. p. 259.

The frames which cover theſe beds ſhould be proportioned to the ſeveral plants they are deſigned to contain: for example, if they are to cover the Ananas or Pine-apple, the back part of the frame ſhould be three feet and a half high, and the lower part fifteen inches, which will be a ſufficient declivity to carry off the wet; and the back ſide will be high enough to contain the large fruiting plants, and the lower ſide will be ſufficient for the ſhorteſt plants; ſo that by placing them regularly according to their height, they will not only have an equal diſtance from the glaſſes, but alſo appear much handſomer to the ſight. And although many people make their frames deeper than what I have allotted, yet I am fully perſuaded, that where there is but height enough to contain the plants, without bruiſing their leaves, it is much better than to allow a larger ſpace; for the deeper the frame is made, the leſs will be the heat of the air incloſed therein, there being no artificial warmth but what the bark affords, which will not heat a large ſpace of air; and as the Pine-apple requires to be conſtantly kept very warm, in order to ripen the fruit well, ſo it will be found upon trial, that the depth I have allowed will anſwer that purpoſe better than a greater.

But if the bed be intended for taller plants, then the frame muſt be made in depth proportionable thereto; but if it be for ſowing ſeeds, the frame need not be above fourteen or ſixteen inches high at the back, and ſeven inches deep in the front, by which means the heat will be much greater; and this is commonly the proportion allowed to the frames uſually made uſe of in the kitchen-gardens. As to their length, that is generally according to the fancy of the owner; but they commonly contain three lights each, which is in the whole about eleven feet in length, though ſometimes they are made to contain four lights; but this is too great a length for the boxes, for the frames thus made are not ſo handy to remove as when they are ſhorter, and are more ſubject to decay at their corners. Some, indeed, have them to contain but two lights, which is very handy for raiſing Cucumber and Melon plants while young; but this is too ſhort for a Bark-bed, as not allowing room for a proper quantity of bark to continue a warmth for any conſiderable time, as was before-mentioned; but for the other purpoſes, one or two ſuch frames are very convenient for common dung-beds.

As to thoſe frames which are made very deep, it is much the better way to have them made to take aſunder at the four corners, ſo that they may be removed with eaſe; otherwiſe it will be very difficult to take the frame off, when there is occaſion to put in new bark, or take out the old.

[The uſe of Hot-beds is of very long ſtanding in our gardens; directions for making them having been given by Gerarde in 1597, in his chapter on Cucumbers. But covering them with glaſſes is of more modern invention. " In the middeſt of april," ſays he, " or ſomewhat ſooner, if the weather be any thing " temperate, you ſhal cauſe to be made a bed or " bank of hot and new horſe dung taken forth of the " ſtable, and not from the dunghill, of an ell in breadth, " and the like in depth or thicknes, of what length " you pleaſe: the which bancke you ſhall cover with " hoopes and poles, that you may the more conve- " niently cover the whole bed or bancke with mats, " olde painted cloth, ſtrawe or ſuch like, &c."

Hot-beds do not ſeem to have been known to Thomas Hyll, who publiſhed the profitable Arte of Gardening in 1593: for in treating of Melons, Cucumbers and Gourds, " to have them timely, he directs " fine ſifted earth to be put into an old baſket or " deepe earthen pan, and the ſame well mixed with " dung, and after to ſet the ſame abroad in warme and " ſunny daies, and in a ſmal raine, but at the ſetting " of the ſun, to ſet the ſame againe under ſome co- " vert, whiles untill all the froſts and cold ſeaſon be " paſt. And after that when a fair day commeth, " then to ſet the whole pan or baſket to the brim in " the earth."

When glaſſes for covering Hot-beds were firſt introduced, I am not able to ſay. It is certain that they were not known to Parkinſon, whoſe two books were publiſhed in 1629 and 1640; and that they were in common uſe long before the end of the laſt century.

Hot-beds ſhould be in a piece of ground which is dry, and in a ſunny expoſure, fenced in either by walls or good ſhip-planks, ten feet high to the north, and ſix feet high to the ſouth, apart from the reſt of the kitchen garden, and as near to the ſtable dung-heap as poſſible, to avoid labour and dirt in barrowing. Sixty feet in breadth, and a hundred feet in length will be extent ſufficient of ground for winter-framing for Muſhroom-beds; for forcing Aſparagus, Peas, Kidney-beans, Strawberries, Radiſhes, Salad-herbs; early Cucumbers and Melons; Annuals for the flower-garden; Perennials and Shrubs brought forwards, as Pinks, Carnations, Bulbous plants, Lily of the Valley, Roſes, Honeyſuckles, &c. &c. And under the ſouth fence forcing frames for fruit: the management of which is directed under theſe ſeveral articles.

If the dung for making the Hot-beds be new and ſtrong, there is no neceſſity for mixing ſea-coal aſhes, leaves of trees, or tan, as Mr. Miller directs: theſe are of uſe only for ſtrengthening the heat, and rendering it more durable, when the dung is in ſome degree exhauſted by having been too long in the dung-heap. In freſh dung, they are apt to make the heat too fierce and burning.

Though a trench be uſually dug for the Hot-bed, in order to have a part of it underground, yet it is more adviſeable for early Hot-beds, that muſt have a lining of freſh dung to keep up the heat, to have them entirely above ground, that they may have the full advantage of the lining.

Hot-beds that are to be covered with common frames ſhould be four feet and a half or five feet in breadth, and three feet and a half or four feet high when made in winter: in ſpring, the firſt Hot-beds in march may be three feet; the ſecond in april two feet and a half; and the third in may two feet or even eighteen inches towards the end of the month.

The covering of earth over the dung ſhould be from five to eight or ten inches for moſt purpoſes: when pots are to be plunged into the beds, this covering muſt be of a depth ſufficient to reach up to their rims.

Late Hot-beds from the middle or end of april to the end of may, for latter crops of cucumbers and melons, for raiſing many annual flowers, and for forwarding the leſs tender ſorts of ſeeds, plants and cuttings, may be covered with bell-glaſſes, oiled paper, or mats over hoops; of theſe the oiled paper frames are the beſt, and anſwer all the purpoſes of glaſs-lights late in the ſeaſon.

Farther directions reſpecting Hot-beds and their management may be found in the culture of Cucumbers and Melons, under the article Cucumis.

Hottentot Cherry. See *Caſſine Maurocenia*, and *Celaſtrus lucidus.*]

HOTTONIA. (*So named by Boerhaave, from Peter Hotton, Profeſſor of Botany at Leyden.*)

Lin. gen. n. 203. *Reich.* 216. *Schreb.* 265. *Boerh. Juſſ.* 95.

Stratiotes. *Vaill. mem. acad.* 1719.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Palmæ*, β.—*Lyſimachiæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, five-parted: *parts* linear, from erect ſpreading.

Cor. one-petalled, ſalver-ſhaped: *tube* the length of the calyx: *border* five-cleft, flat: *clefts* ovate-oblong, emarginate.

Stam. *Filaments* five, awl-ſhaped, ſhort, upright, oppoſite to the clefts of the corolla, and placed on the tube. *Anthers* oblong.

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[q] Herball. 764. p. 154.

Pist. *Germ* globular-acuminate. *Style* filiform, ſhort. *Stigma* globular.

Per. *Capſule* globular, acuminate, one-celled, placed on the calyx.

Seeds very many, globular. *Receptacle* globular, large.

ESSENTIAL CHARACTER.

Cor. ſalver-ſhaped. *Stam.* placed on the tube of the corolla. *Capſ.* one-celled.

SPECIES.

1. Hottonia paluſtris. *Common Water-Violet.*
Lin. ſpec. 208. *ſyſt.* 194. *Reich.* 1. 416. *hort. cliff.* 51. *fl. ſuec. n.* 174. *Hudſ. angl.* 85. *Wither. arr.* 207. *Curt. lond.* 1. 11. *Relh. cant. n.* 161. *Hall. helv. n.* 632. *Scop. carn. n.* 213. *Neck. gallob.* 108. *Fl. dan. t.* 487. *Pollich. pal. n.* 198. *Krock. ſileſ. n.* 300. *Villars dauph.* 2. 482.
Hottonia. *Boerh. ind.* 207. *Raii ſyn.* 285.
Millefolium aquaticum, ſeu Viola aquatica, caule nudo. *Bauh. pin.* 141.—&, M. aquat. equiſetifolium, caule nudo, *ejuſd.*
M. aquat. dictum Viola aquat. *Bauh. hiſt. Raii hiſt.* 1101.
M. aquat. floridum, ſ. Viola aquat. *Park. theat.* 1256. 4.
Myriophyllum alterum. *Matth.* 1168. *Camer. epit.* 897.—equiſetif. fluviatile. *Lob. obſ.* 460. 2.
Viola aquatilis. *Dod. purg.* 230. *pempt.* 584. 2.—paluſtris. *Ger.* 678. 1. *emac.* 826. 1, 2.
Peduncles in naked whorls of ſeveral flowers, leaves in whorls, pinnate.

[2. Hottonia indica. *Indian Water Violet.*
Lin. ſpec. 208. *ſyſt.* 195. *Burm. zeyl.* 121. *t.* 55. *f.* 1.
Gratiola malabarica fol. ſtellatim dentatis. *Petiv. gaz. t.* 54. *f.* 11. (bad).
Erica africana equiſeti folio. *Seba muſ.* 2. *t.* 37. *f.* 5.
Tſiunda Tſiera. *Rheed. mal.* 12. 71. *t.* 36.
Peduncles axillary, one-flowered, leaves in whorls, trifid or thrice trifid.

3. Hottonia ſeſſiliflora. *Seſſile-flowered Water Violet.*
Vahl ſymb. 2. 36.
Flowers in leafy whorls, ſeſſile, leaves in whorls, bipinnate and trifid.

4. Hottonia litoralis. *Sea Water Violet.*
Lour. cochinch. 105.
Leaves ovate-oblong, oppoſite, quite entire; flowers ſolitary.

DESCRIPTIONS, &c.

1. The root conſiſts of numerous white capillary fibres, which ſtrike deep into the mud. The ſtem is a ſcape, a foot high, ſimple, upright, towards the top roughiſh with little glands, at bottom furniſhed with numerous leaves, whence proceed ſeveral ſtalks, which run out to a conſiderable length through the water, and throw out numerous white fibres. Leaves numerous, generally under water, growing in tufts on the tops of the young ſtems, bending downwards, the pinnas linear and flat. Flowers pale purple or white, with a yellow eye, in ſeveral whorls one above another, forming all together a handſome ſpike. Peduncles as far as ten in number, with a bracte at bottom, and when the flowers are gone off bending downwards [a].

This ſingular plant has the leaves under water, and the upper part of the flowering ſtem only above; the flowers are beautiful; the leaves afford a refuge, and perhaps nouriſhment to the freſh-water Periwinkle, and other ſmall ſhell-fiſh. It abounds in ditches and marſhes, ſtagnant waters, and ſlow-running ſtreams, flowering in may and june, and continuing a long time in flower. The old writers call it *Millefolium* from the abundance of its leaves; and *Viola*, which was a favourite name for the Stock-Gilliflower and many other plants with handſome flowers, beſides the Violet. In Engliſh, beſides Water Violet, it has the names of Water Milfoil, or Yarrow, and Water Gilliflower; in Dodoen's herbal by Lyte, Water Gillofer. In German, *Waſſerviole.* In Dutch, *Waterviolier.* In Daniſh, *Vandrollike.* In Swediſh, *Vattenrolleka.* In French, *Plumeau, Plume d'eau, Plumette, Violette aquatique; Giroflée d'eau, Millefeuille d'eau, Hottone.* In Italian, *Miriofillo aquatico.*

There is a variety with ſmaller leaves [b]. Some flowers have ſix ſtamens, and in that caſe the calyx and corolla are divided into ſix ſegments [c].

2. Stem a finger's length, quite ſimple. Leaves in whorls, frequently eight together, trifid or thrice trifid. Peduncles lateral, from the axils of the leaves, ſolitary, longer than the leaves. The genus is doubtful [d].

Burmann, who found it in the iſland of Ceylon, ſays that the ſtalk is ſlender, jointed, ſimple; that the leaves come out at each joint in a ſtellated form, five, ſix or more together, ſlender, ſhort, pinnately divided; that a ſlender peduncle ſprings from the ſame point, longer than the leaves, bearing a ſingle flower on the top, which has a ſmall five-cleft calyx, and a five-cleft petal, (which in the Hortus Malabaricus is deſcribed and figured as four-cleft) five ſtamens, and one piſtil with a head; and that the fruit is a roundiſh one-celled capſule, containing many ſeeds.

3. Stem ſimple, ſometimes with a branchlet at top. The leaves under water reſemble thoſe of the firſt ſpecies, are in whorls and bipinnate, the ſegments linear, and quite entire; the upper ones are like thoſe of the ſecond ſpecies, three-parted; the ſegments linear-lanceolate, gaſh-toothed; the floral-leaves in fours, trifid, quite entire, marked with two lines. Spike terminating, three inches long. Flowers ſeſſile, four to each whorl. Calyx the length of the leaves, cylindrical, with awl-ſhaped ſegments. Style longer than the calyx. It differs from the preceding in having the flowers in whorls; from the firſt in the flowers being ſeſſile, and the whorls leafy. Found in the Eaſt-Indies by Burmann [e].

4. Stem commonly quite ſimple, eight inches high, upright. Leaves ſmooth. Flowers purple, axillary, peduncled. Calyx tubular, ſlightly five-cleft, the clefts upright. Anthers twiſted. Stigma turbinate-rounded. Capſule longiſh, two-valved, with many, very ſmall, round, black ſeeds. The flower reſembles that of the ſecond ſpecies, but the leaves are very different. Native of Cochinchina [f].]

PROPAGATION AND CULTURE.

The common Hottonia may be propagated in deep ſtanding waters, by dropping the ſeeds as ſoon as they are ripe, into the water, where they are deſigned to grow; and the ſpring following they will appear, and if they are not diſturbed will ſoon increaſe abundantly. [The other ſorts are not known in Europe, in a living ſtate.

HOVENIA. (*So named by Thunberg, in honour of M. ten Hoven, one of the Privy Counſellors of Holland, one of his patrons, and a great cultivator of exotic plants.*)
Lin. gen. Schreb. n. 375. *Thunb. nov. gen.* 7. *Fl. jap.* 7. *Juſſ.* 381.
Claſſ. 5. 1. Pentandria Monogynia.
Nat. order of *Dumoſæ.*—*Rhamni*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, hairy at the baſe within, permanent, five-parted: *parts* ovate, reflex, deciduous.

Cor. *Petals* five, obovate, very obtuſe, patulous, rolled up, involving the ſtamens, inſerted into the calyx between the ſegments, and of the ſame length with them.

Stam. *Filaments* five, inſerted into the baſe of the calyx, and a little ſhorter. *Anthers* roundiſh, hid within the petals.

Pist. *Germ* ſuperior. *Style* upright, much ſhorter than the calyx. *Stigmas* three, from patulous reflex, blunt.

Per. *Capſule* ovate-globular, three-furrowed, three-celled, three-valved.

Seeds ſolitary, lens-ſhaped, very ſmooth.

Obs. *Sometimes, but ſeldom, the calyx is four-parted, and there are only four ſtamens.*

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[a] Curtis.

[b] Ger. emac. [c] Withering. [d] Linn. ſpec. [e] Vahl. [f] Loureiro.

ESSENTIAL CHARACTER.

Pet. five, convoluted. *Stigma* trifid. *Capſ.* three-celled, three-valved.

SPECIES.

1. Hovenia dulcis.
Thunb. jap. 101. *Hornſt. diſſ.* 1. *p.* 7, 8, 9. *Lin. ſyſt.* 240. *Kæmpf. amœn.* 5. 808. *t.* 809.

DESCRIPTION, *&c.*

Root perennial. Stem arboreous, thick, a fathom and half in height. Branches round, ſmooth. Leaves alternate, petioled, ſubcordate, ovate, acuminate, ſerrate, hanging down, nerved, ſmooth, a hand in length. Petiole ſemicylindric, reflex, ſmooth, an inch long. Flowers axillary and terminating, panicled. Panicle dichotomous, compreſſed. Peduncles ſubcylindric, dichotomous, thickening after flowering-time, with a ſweet red pulp, which is eaten by the Japoneſe, and has a taſte ſomewhat like a pear. Pedicels divaricating, bent to and fro, ſmooth, a line in length. The flowers readily fall off.

Native of Japan, near Nagaſaki; flowering from june to auguſt, and ripening the fruit in november and december[g].

Hound's-tongue. See *Cynogloſſum.*

Houseleek. See *Sempervivum.*

HOUSTONIA. (*So named by Gronovius from William Houſtoun, M.D. who travelled into America, and died there in july* 1733. *He ſent over a great number of ſpecimens and ſeeds of new plants. Sir Joſeph Banks publiſhed* Reliquiæ Houſtounianæ *from his manuſcripts.*)
Lin. gen. n. 124. *Reich.* 131. *Schreb.* 161. *Gærtn. t.* 49. *Juſſ.* 197.
Claſſ. 4. 1. Tetrandria Monogynia.
Nat. order of *Stellatæ.—Rubiaceæ,* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* very ſmall, four-toothed, upright, permanent.

Cor. one-petalled, funnel-ſhaped: *tube* cylindric, long; *border* four-parted, ſpreading, *parts* roundiſh.

Stam. *Filaments* four, in the neck of the corolla, very ſmall. *Anthers* ſimple.

Pist. *Germ* ſuperior, roundiſh, compreſſed. *Style* ſimple, ſhorter than the ſtamens. *Stigma* bifid, acute.

Per. *Capſule* roundiſh, twin, gaping tranſverſely at top, two-celled, two-valved: *valves* oppoſite to the partition.

Seeds few (three or four) ſmall, ovate, adhering to the partition.

Obs. *The germ of* H. purpurea *is certainly inferior.* Juſſ.

ESSENTIAL CHARACTER.

Cor. one-petalled, funnel-form. *Capſ.* ſuperior, two-celled, two-ſeeded. (Seeds three or four in each cell. *G.*)

SPECIES.

1. Houſtonia cærulea. *Blue-flowered Houſtonia.*
Lin. ſpec. 152. *ſyſt.* 149. *Reich.* 1. 298. *hort. cliff.* 35. *Gron. virg.* 15. *Pluk. alm.* 324. *mant.* 164. (Rubia). *Mor. hiſt.* 3. 614. *ſ.* 15. *t.* 4. *f.* 1. (Paronychiæ facie).
β. Chamæjaſme inodora, alſines facie, diſpermos tetrapetaloides, quadrato caule, virginiana. *Pluk. alm.* 97. *mant.* 45. *t.* 97. *f.* 9. *Raii ſuppl.* 502. 69.
Root-leaves ovate, ſtem compound, firſt peduncles two-flowered.

2. Houſtonia purpurea. *Purple-flowered Houſtonia.*
Lin. ſpec. 152. *ſyſt.* 149. *Reich.* 1. 299. *Gron. virg.* 15. *Pluk. mant.* 164. *Raii ſuppl.* 262. (Rubia mariana).
Leaves ovate-lanceolate, corymbs terminating, flowers ſuperior.

DESCRIPTIONS, *&c.*

1. This is a vernal plant[a], with terminating flowers[b]. From a ſlender root it produces ſmall, oblong, pointed leaves, ſpreading on the ground in a ring; among theſe, ſlender ſmooth ſtalks ariſe, at the height of two inches forming a joint, and furniſhed with two or three ſmall leaves; here they divide into two, or ſometimes three ſlender branches or peduncles an inch or two in length, and at the end of each a ſingle blue flower. Native of Virginia, whence it was ſent by John Baniſter[c].

It was introduced by Mr. Archibald Menzies in 1785, and flowers here moſt part of the ſummer[d].

Juſſieu doubts whether the germ be really ſuperior in this, ſince it is certainly inferior in the other ſpecies.

Linneus had ſuppoſed the ſeeds to be ſolitary. Gærtner imagines, that the globular receptacle falling with the ſeeds, had made Linneus miſtake it for a ſingle ſeed.

β. The little ſtems are extremely ſlender, half a hand in height, branched, with a pair of narrow, ſhort leaves at each joint; the lower ones ſhaped like thoſe of a very ſmall Alſine. Peduncles axillary, very ſlender, oblong, having each one flower at the top, large in proportion to the ſize of the plant, and blue. Native of Maryland, whence dried ſpecimens of it were brought by Vernon and Krieg.

2. This has leaves in pairs, reſembling thoſe of large Alſine or Chickweed. The flower is of a red purple. Native of Maryland; where it is alſo found with a narrower leaf[e].

Gærtner has a ſpecies (from Sir Joſeph Banks's herbarium) which he calls H. longifolia: the capſule of which is ſuperior, bipartile, at the baſe ſurrounded by the four-parted calyx, compreſſed at the top, marked with two grooves; receptacle fungoſe, ſubglobular, pedicelled, fixed to the middle of the partition of each cell, when ripe falling along with the ſeeds; of which there are three or four in each cell, compreſſed a little, having a ridge along the back, and a little umbilical ſcar in the middle of the belly; they are of a very dark brown colour[f].

HOUTTUYNIA. (*So named by Thunberg, in honour of Mart. Houttuyn, M.D. of Holland; author of* Natuurlyke hiſtorie, *in fourteen volumes octavo, Amſterdam* 1773 *to* 1783.)
Lin. gen. Schreb. n. 1389. *Thunb. jap.* 12. *Juſſ.* 25. *Giſeke ord. nat.* 127.
Claſſ. 21. 1. Monoecia Monandria. (Heptandria, *Giſ.*) Polyandria Polygynia, *Thunb.*
Nat. order of *Piperitæ.—Aroideæ,* Juſſ. Perhaps nearer allied to the *Naiades.*

GENERIC CHARACTER.

* *Male Flowers.*

Cal. *Spathe?* four-leaved: *leaflets* ovate, concave, obtuſe, coloured. *Spadix* oblong, the length of the ſpathe, covered with fructifications.

Cor. none.

Stam. *Filaments* very many, intermixed with the germs (about ſeven round each germ) very ſhort. *Anthers* twin, ovate.

* *Females.*

Cal. *Spathe* and Spadix common with the Males.

Cor. none.

Pist. *Germs* very many, intermixed with the ſtamens. (*Germ* three-cornered. *Style* none. *Stigmas* three, oblong, reflex. *Lour.*)

Per. *Capſule?* three-cornered, (three-celled, three-valved, opening at the top. *Lour.*)

Seeds (many, ovate, ſmall. *Lour.*)

ESSENTIAL CHARACTER.

Cal. four-leaved. *Cor.* none. *Stam.* mixed with the piſtils (ſeven about each germ. *Giſ.*)

SPECIES.

1. Houttuynia cordata.
Lin. ſyſt. 519. *Thunb. jap.* 234. *t.* 26. *act. ſtockh.* 1783. *p.* 149. *t.* 5.
Polypara cochinchinenſis. *Lour. cochinch.* 61.

DESCRIPTION, *&c.*

This plant has the habit of Polygonum, with ſtipules as that has[g]. Root annual, fibrous. Stem ſimple, herbaceous, grooved, flexuoſe, upright, a hand, a ſpan, or a foot in height, ſmooth in all its parts. Leaves alternate, petioled, cordate, cuſpidate, entire, paler underneath. Petioles ſtriated, ſtipuled at the baſe, ſhorter than the leaf. Stipules in pairs, faſtened to the petiole at the baſe, oblong, blunt, membranaceous at

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[g] Thunberg.

[a] Linn. ſyſt.

[b] Juſſieu.

[c] Mor. hiſt.

[d] Hort. kew.

[e] Ray hiſt. ſuppl.

[f] De fruct. & ſemin. vol. 1. p. 226.

[g] Giſeke ord. nat. 128.

the tip, ſhorter by half than the petiole. Flowers from the ſheath of the petiole ſolitary, peduncled. Peduncle the length of the petiole. It is difficult to determine the number of ſtamens in this genus, becauſe there is no calyx, corolla or ſcales to ſeparate the germs. It ought however to be referred to the claſs Polyandria, the ſtamens being ſcattered over an elongated receptacle, among ſeveral germs.

Diſcovered by Thunberg in Japan between Miaco and Jedo, very common in the ditches, and near the towns; flowering in may and june[h].

Loureiro alſo found it, if his Polypara be the ſame plant, in the gardens of Cochinchina, where it is eaten in ſalads, and is eſteemed attenuant, reſolvent and emmenagogue. The leaves are five-nerved in his plant, which they are not in the Houttuynia of Thunberg; but they agree ſo nearly in habit, that we may preſume they are the ſame ſpecies.

Loureiro deſcribes it as annual, with a creeping root; ſtem ſix inches high, upright, grooved; leaves cordate, acuminate, five-nerved, large, quite entire, ſmooth, alternate, ſtrong-ſmelling, on long petioles; flowers lateral, ſolitary, on long upright peduncles; the common corolla (ſpathe) very white and ſpreading. The ſtamens are not confuſedly mixed with the piſtils, but fixed by threes to each of the three ſides of the triangular germ: the germs are alſo diſtinct, with three ſeſſile ſtigmas. Loureiro calls the four leaves at the baſe of the common receptacle the petals; and he names the plant Polypara, becauſe the common corolla (or ſpathe) produces many florets. According to him, each flower has three filiform upright filaments, placed on a partial receptacle, and three ſtigmas: he therefore refers this genus to the order trigynia of the claſs triandria.

HUDSONĬA. (*So named by Linneus, in honour of William Hudſon, apothecary of London, F.R.S. and author of* Flora Anglica 1762 and 1778. 8vo.)

Lin. gen. *Reich. n.* 657. *Schreb.* 822. *Juſſ.* 162. *Berg. act. holm.* 1778.

Claſſ. 11. 1. Dodecandria Monogynia.

Nat. order of *Bicornes?—Ericæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* three-leaved, tubular, cylindric, with a patulous mouth: *leaflets* lanceolate-linear, blunt.

Cor. none.

Stam. *Filaments* fifteen, capillary, ſhorter than the calyx. *Anthers* roundiſh.

Pist. *Germ* ſuperior, ovate. *Style* filiform, the length of the calyx. *Stigma* blunt.

Per. *Capſule* cylindric, ſhorter by half than the calyx, one-celled, three-valved.

Seeds three, rounded on one ſide, angular on the other.

ESSENTIAL CHARACTER.

Cal. five-leaved (three-leaved *above*, three-parted, *Juſſ.*) tubular. *Cor.* none. (Petals five, very ſmall, *Berg.*) *Stam.* fifteen. *Capſ.* one-celled, three-valved, three-ſeeded.

SPECIES.

1. Hudſonia ericoides.

Lin. ſyſt. 445. *Reich.* 2. 422. *mant.* 74. *Berg. in act. holm.* 1778. *t.* 2. *Pluk. mant.* 88. (Ericæformis ſuffrutex, &c.)

DESCRIPTION, *&c.*

This is a ſhrub with the appearance and habit of Erica or Heath. Branchlets filiform, ſcattered, imbricate. Leaves ſubulate-acerofe, hirſute; when tender ſtill more hirſute and hoary, ſo that thoſe on the extreme branchlets ſeem as if they had leafy gems ſcattered over them. Peduncles (from the leafy gems) ſolitary, filiform, longer than the leaves. Calyx erect, pubeſcent. Native of Virginia[i].

HUGONĬA. (*So named by Linneus, in memory of Auguſtus Johannes de Hugo, who travelled in Swizerland with Haller in* 1732, *and aſſiſted him with his herbarium.*)

Lin. gen. n. 831. *Reich.* 896. *Schreb.* 1117. *Cavanill. diſſ.* 3. 177. *Gærtn. t.* 58. *Juſſ.* 275.

Claſſ. 16. 4. Monadelphia Decandria.

Nat. order of *Columniferæ.—Malvaceæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed: *ſegments* ovate, acute, concave, coriaceous, permanent; the two outer ones larger, (five-leaved, *G.*)

Cor. *Petals* five roundiſh, large, emarginate, ſpreading, narrowed at the baſe, fixed at the baſe by ſlender claws to the little pitcher of ſtamens.

Stam. *Filaments* ten, awl-ſhaped, equal, ſhorter than the corolla, connected at bottom into a little pitcher. *Anthers* roundiſh, furrowed, incumbent.

Pist. *Germ* roundiſh. *Styles* five filiform, longer than the ſtamens. *Stigmas* capitate, orbicular, flat.

Per. *Drupe* globular, one-celled: (A berried drupe, *G.*)

Seed. *Nut* globular, deeply ſtriated, ten-celled. *Kernels* oblong, compreſſed, bowed at the back.

Obs. *The two outer ſegments of the perianth are wholly tomentoſe on the outſide; the middle one is alſo tomentoſe, except that part where it is covered by one of the outer ones, and there it is ſmooth and ſhining, as are the two inner ones, which are tomentoſe only at the tip. The filaments were alternately ſhorter in the flower, which I examined. The alternate kernels ſeem frequently to be abortive; hence perhaps Cavanilles makes the fruit to be five-celled. In the drupe which I opened there were more than five kernels.* Sch.

ESSENTIAL CHARACTER.

Five-ſtyled. *Cor.* five-petalled. *Drupe* with a ſtriated nut.

SPECIES.

1. Hugonia Myſtax.

Lin. ſpec. 944. *Reich.* 3. 307. *fl. zeyl. n.* 249. *Gærtn. fruct.* 1. 281.

Myſtax frutex baccifer malabaricus, fructu calyculato rotundo monopyreno. *Raii hiſt.* 1570.—&, Ægoceratos arbor zeylanica, lauri fructu, cortice coſtum olente. *Raii dendr.* 45.

Modira-canni. *Rheed. mal.* 2. 29. *t.* 19.

Spines oppoſite revolute.

DESCRIPTION, *&c.*

This is a tree with an irregular bark. Branchlets ſhort, alternate, ſpreading, leafy at the end. Leaves oval, quite entire, ſmooth, petioled, cluſtered. Flowers ſeveral, from the ends of the branches, in cluſters, white. Tendrils or ſpines two, on each of the branchlets, ſhort, rigid, parallel to the branches, below the leaves. Perianth five-leaved. Anthers twin. Germ ovate, within the little pitcher formed by the lower part of the filaments[k].

The fruit is a berried, ſpherical, ſucculent drupe; the ſkin is very thin, papery, tough, white, with a very poliſhed ſhining ſurface; the pulp is ſucculent, but diſappears in time; the ſhell is bony, ſpherical, deeply ſtriated, and ten-celled. There is a ſingle oblong ſeed in each cell, drawn to a point at both ends, arched on the back, thickiſh, flat on the ſides, wedge-form, compreſſed, pale[l].

Native of the Eaſt Indies.

Humble Plant. See *Mimoſa.*

Hummatu. See *Datura Metel.*

HUMŬLUS. (*Dimin. From* Humus, *moiſt earth or ground.* Hupa *and* Humela *in barbarous Latin.* Lupulus, *dimin. from* Lupus).

Lin. gen. n. 1116. *Reich.* 1221. *Schreb.* 1523. *Juſſ.* 404. Lupulus. *Tournef.* 309. *Gærtn.* 75.

Claſſ. 22. 5. Dioecia Pentandria.

Nat. order of *Scabridæ. Urticæ*, Juſſ.

GENERIC CHARACTER.

* *Male.*

Cal. *Perianth* five-leaved: leaflets oblong, concave, blunt.

Cor. none.

Stam. *Filaments* five, capillary, very ſhort. *Anthers* oblong.

* *Female.*

Cal. *Involucre univerſal* four-parted, ſharp: *partial* four-leaved, ovate, eight-flowered: to each flower a *Perianth* one-leafed, ovate, very large, outwardly flat on one ſide, converging at the baſe.

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[h] Thunb. jap.

[i] Linn. mant.

[k] Linn. zeyl.

[l] Gærtner.

Cor. none.
Pist. *Germ* very ſmall. *Styles* two, ſubulate, patulous. *Stigmas* ſharp.
Per. none. *Calyx* incloſing the ſeed at the baſe.
Seed roundiſh, covered with a coat.

ESSENTIAL CHARACTER.

Male. *Cal.* five-leaved. *Cor.* none.
Fem. *Cal.* one-leafed, ſpreading obliquely, entire. *Cor.* none. *Styles* two. *Seed* one, within a leafed calyx.

SPECIES.

1. Humulus Lupulus. *Hops.*
Lin. ſpec. 1457. *Reich.* 4. 252. *hort. cliff.* 458. *fl. ſuec. n.* 908. *mat. med.* 214. *Hudſ. angl.* 433. *Wither. arr.* 1117. *ed.* 3. *v.* 2. *p.* 277. *Lightf. ſcot.* 615. *Relh. cant. n.* 725. *Neck. gallob.* 399. *Pollich pal. n.* 927. *Villars dauph.* 2. 569. *Allion. pedem. n.* 1989. *Mill. illuſtr. ic.*]
Lupulus Humulus. *Mill. dict.*
[L. communis. *Gærtn. fruct.* 1. 358.
Lupulus. *Hall. helv. n.* 1618. *Blackw. t.* 536. *a, b. Brunfels. Matth.* 1213. *Dod. pempt,* 409. 1. *Lob. obſ.* 347. 2. *ic.* 1. 629. 1. *Camer. epit.* 933, 934. *Cluſ. hiſt.* 1. 126. 2.
L. mas & foemina. *Bauh. pin.* 298. 1, 2. *Bauh. hiſt.* 2. 151. *Raii hiſt.* 156. *ſyn.* 137.
L. ſativus & ſylveſtris. *Trag.* 812. *Lonic.* 1. 208. 3. *Park. theat.* 176. *n.* 1, 2.
L. ſalictarius. *Plin. hiſt. nat. l.* 21. *n.* 15. *Fuchſ.* 164. *Ger.* 737. *emac.* 885. *Park. theat.* 177.
Cannabis Lupulus. *Scop. carn. n.* 1219.

DESCRIPTION, *&c.*

Root perennial. Stems weak and twining, not climbing by tendrils, but aſcending a prop, trees or ſhrubs in a ſpiral, always with the ſun, that is from right to left, or from eaſt to weſt by the ſouth; this direction it has in common with Tamus or Black Bryony, Lonicera or Honeyſuckle, and ſeveral others; but more turn the contrary way, or from left to right, as Phaſeolus or Kidney Beans, and ſeveral other leguminous plants, Convolvulus, &c. &c.[a] Theſe ſtems are angular, ſtriated, and rugged with very minute prickles. Leaves oppoſite in pairs, (or ſometimes in threes) the upper ones heart-ſhaped, the lower three-lobed, (or ſometimes five-lobed) ſerrate, dark green above, pale green beneath, on long petioles; which, as well as the leaves themſelves, are rugged with minute prickles. Stipules two or four, cordate, bifid, at each joint. Flowers greeniſh yellow; the males on branched peduncles; the females on a diſtinct plant, peduncled, in pairs, in form of a cone or ſtrobile[b], compoſed of ovate, membranaceous ſcales, tubular from being rolled in at the baſe, and two-flowered, each containing one (ſometimes two) ſeed, of a brown bay colour, of a globular form a little flatted, ſurrounded with a ſharp rim, and compreſſed at the tip. It is covered with three coats; the outer membranaceous and wrinkled, the middle cruſtaceous and thin, the inner membranaceous. The embryo is ſpiral and inverted[c].

Native of moſt parts of Europe, in hedges; alſo of Japan: flowering with us in june.

Hops in German are called *Hopfen*; in Dutch, *Hoppe:* in Daniſh and Swediſh, *Humle*; in French, *le Houblon*; in Italian, *Lupulo*: in Spaniſh, *Hombrecillo, hoblon, lupulo, lupio, vidarria*; in Portugueze, *Lupulo, lupara, hombrezilho, ſinoura, ſeba*; in Ruſſian and all the Sclavonian dialects, *Chmel*; in the Tartarian, *Kumulak, Kumula, Umula*; in Perſian, *Hymel.*

The young ſhoots are eaten early in the ſpring as Aſparagus, and are ſold under the name of Hop-tops; they are ſaid to be diuretic, and to be good againſt the ſcurvy, taken in an infuſion. The herb will dye wool yellow. From the ſtalks a ſtrong cloth is made in Sweden: for this purpoſe they muſt be gathered in autumn, ſoaked in water all winter; and in march, after being dried in a ſtove, they are dreſſed like flax[d]. They require a longer time to rot than flax, and if not completely macerated, the woody part will not ſeparate, nor the cloth prove white or fine.

The Society for encouragement of Arts, Manufactures and Commerce at London offered premiums, in the year 1760, for cloth made from Hop-ſtalks, or binds. The year following Mr. Cookſey produced ſome ſpecimens of cloth, and was of opinion that it would anſwer very well the purpoſe of fine ſacking, and coarſe bagging for hops. He had kept the mataterial too long under water; and found that at the end of ſix weeks or two months, the binds afforded filaments ſufficiently fine and ſtrong for any purpoſe[e]. In 1791, Mr. John Lockett of Donnington near Newbury in Berkſhire had the premium adjudged to him for cloth made from theſe ſtalks or Hop-Vines, as they are here called. They were cut in lengths of about two or three feet; put into a furnace, in which was ſome lie that linen had been boiled in for bleaching; and then boiled, till the rind ſeparated from the ſtalk eaſily. When cool, they ſtript ſo freely, that children might do it; and the yield was great in proportion to the quantity of ſtalks. The ſame method was then followed as in working hemp or flax; but it is much more ſtubborn than either, and therefore not ſo well adapted to making fine cloth: the fibres alſo are ſo united with a very adherent matter, that they do not eaſily ſeparate; but for ſacks, cordage, &c. it may be of great ſervice.

Some of it was hackled while it was wet, ſoon after it was taken off, but it did not ſeparate the fibres. Carding ſeems to work it beſt, and to make it like cotton. Of the piece of cloth ſent the warp was hackled, and the woof carded[f].

A decoction of the roots of Hops, from one to two ounces; or an extract from them, to the quantity of twenty or thirty grains, is ſaid to be ſudorific, and to anſwer the purpoſes of Sarſaparilla[g]. Both theſe and the ſtrobiles have a balſamic principle, and are thought to be ſerviceable in removing obſtructions, correcting the viſcidity of the lymph, opening the pores of the ſkin, cleanſing the kidneys, &c. But the principal uſe of the latter in Britain and other northern countries, is in brewing beer, to prevent it from turning ſour. Haller, from Iſidorus, ſays that the firſt experiment for this purpoſe was made in Italy.

The uſe of Hops for preſerving beer, and the culture of the plant were introduced into England from Flanders. The year aſſigned is 1524, the 15th of Henry VIII.[h] Fitzherbert in 1534 makes no mention of them; but Tuſſer in 1562 gives many directions for their culture[i], which was new in his time; for although they probably began to be uſed after the expedition of King Henry VIII. againſt Tournay, yet like moſt novelties they were at firſt much oppoſed, and were doubtleſs for ſome time chiefly imported; for ſo late as the year 1695, five hundred and ten hundred weight was imported from Flanders and Holland[k].

The firſt treatiſe written expreſsly on the culture of Hops in Engliſh was by Reynolde Scot, printed in 1574, and a ſecond time in 1576; it is entitled " A perfite platforme of a Hoppe Garden." Lond. qu. black letter: pages 63.

He complains, that " the Flemmings envie our
" practiſe herin, who altogither tende their owne pro-
" fite, ſeeking to impownde us in the ignoraunce of
" our commodities, to cramme us with the wares and
" fruites of their Countrie, and to doe anye thing that
" myght put impediment to this purpoſe, dazeling us
" with the diſcommendation of our ſoyle, obſcuring
" and falſifying the order of this myſterie, ſending us
" into Flaunders as farre as Poppering, for that which
" we may finde at home in our owne backſides."

Gervaſe Markham, in his farewell to Huſbandry 1631, has a chapter on barren grounds, and on making them fruitful to bear Hops. l. 20. p. 109. ed. 8. 1664.

It appears from our old herbaliſts Gerarde and Parkinſon, that Ale and Beer were different liquors; the firſt being malt-liquor without, and the ſecond with Hops.—" The Ale," ſays the latter of theſe authors (1640) " which our forefathers were accuſtomed only

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[a] Ray hiſt.
[b] Pollich, Haller, Lightfoot.
[c] Gærtner.
[d] Withering.

[e] Tranſact. vol. 3. for 1785.
[f] Ibid. vol. 9. for 1791.
[g] Withering.
[h] Houghton's collections, 2. 457.
[i] See in january, march, april, may, june, and auguſt.
[k] Hought. 2. 458.

“ to drink, being a kind of thicker drink than beere, is now almoſt quite left off to be made, the uſe of Hoppes to be put therein, altering the quality thereof, to be much more healthfull, or rather phyſicall, to preſerve the body from the repletion of groſſe humors, which the Ale engendred.”

Walter Blith, in his Engliſh Improver Improved, 1649; third edition, 1653, p. 240, has a chapter upon improvement by plantations of Hops, &c. He obſerves that “Hops were then grown to be a nationall commodity: but that it was not many years ſince the famous City of London petitioned the Parliament of England againſt two anuſancies—and theſe were, Newcaſtle coals, in regard of their ſtench, &c. and Hops in regard they would ſpoyl the taſt of drink, and endanger the people: and had the Parliament been no wiſer than they, we had been in a meaſure pined, and in a greater meaſure ſtarved, which is juſt anſwerable to the principles of thoſe men who cry down all devices or ingenious diſcoveries, as projects, and thereby ſtifle and choak improvements.”

He has eight pages in quarto upon the land beſt for Hops, and the beſt ſets for planting; the manner of planting and cultivating them; and the profit accruing from them.

Samuel Hartlib, Eſq. in the Compleat Huſbandman, 1659, ſays that in Queen Elizabeth's time we had Hopps from the Low Countries; and that “the Frenchman who writes the Treaſure Politick ſaith, that it's one of the great deficiencies of England, that Hopps will not grow, whereas now it is known, that they are the beſt in the world.”

Robert Sharrock, fellow of New College, Oxford, in his hiſtory of the Propagation and Improvement of Vegetables, Oxf. 1660. 8°—2d edition 1672, p. 86, &c. gives inſtructions for the planting and management of Hops, from Blith and the Farnham practice.

Mr. Worlidge, in his Syſtema Agriculturæ, or Myſtery of Huſbandry diſcovered, 1668 folio, is very copious in his directions for the tillage of Hops. He ſays, we had not then enough planted to ſerve the kingdom, but yearly made uſe of Flemiſh Hops, nothing near ſo good as our own[l].

Mortimer, in his whole Art of Huſbandry, 1706, 8°. gives ample directions for the planting, culture, picking, drying, and bagging of Hops[m]. The beſt inſtructions relative to brewing are alſo to be found in this work[n].

The authors above mentioned bring down the culture of Hops to the time of Mr. Miller, who has confined himſelf chiefly to the method which is followed in the county of Kent, where they were firſt adopted, with moſt of our improvements in huſbandry, from Flanders. There are other treatiſes on the ſubject; but I have mentioned thoſe only which I have had an opportunity of conſulting.

Blith's directions are chiefly abridged from Scot's diffuſive treatiſe. Sharrock has followed Blith, with additions from the practice of the Farnham Hop-Maſters. Markham is very brief on the ſubject. Worlidge is ſufficiently copious, and appears to have taken much from Scot the original fountain. Mortimer has tranſcribed from Worlidge almoſt literally, the greater part of what he has written on the ſubject.

Ground-Ivy, called alſo Ale-hoof or Tun-hoof (Glechoma hederacea) was generally uſed for preſerving Beer, before the introduction of Hops. And ſince they have been introduced, many plants are ſaid to ſerve as ſuccedaneums when Hops are dear: as the roots of Ginger and Gentian; the ſeeds of Coloquintida; and the herbs of Horehound, Wormwood, Broom, Carduus benedictus, Centaurea Calcitrapa or Star-Thiſtle, Marſh-Trefoil or Buckbean (Menyanthes trifoliata), &c. The laſt particularly is much recommended as a much more wholeſome bitter than Hops, in the proportion of two ounces, where a pound of the latter is uſed[o]. But all public brewers are enjoined under a ſevere penalty to uſe no other bitter than Hops for their malt liquors.

It is a general opinion among the Hop-planters, that the plants which bear the male flowers, or the Wild Hops as they call them, are of no ſervice in ſecuring or increaſing the crop; they are therefore commonly caſt out. It would be well however if ſome accurate experiments were made on this ſubject.]

PROPAGATION AND CULTURE.

There being the greateſt plantation of Hops in Kent that are in any county in England, it is very probable, that their method of planting and ordering them ſhould be the beſt.

As for the choice of their Hop-grounds, they eſteem the richeſt and ſtrongeſt grounds as the moſt proper: they chuſe a warm dry ſoil, that has a good depth of hazel mould; and if it be rocky within two or three feet of the ſurface, the Hops will proſper well: but they will by no means thrive on a ſtiff clay, or ſpongy wet land.

If it may be, chuſe a piece of meadow or lay ground to plant Hops on, ſuch as has not been tilled or ſown with other crops for many years, or an old decayed orchard; for land that is worn out by long bearing of Corn, will require abundance of dung to bring it into any tolerable condition to bear a crop of Hops. The Kentiſh planters accounting new land beſt for Hops, they plant their Hop-gardens with Apple-trees at a large diſtance, and with Cherry-trees between; and when the land has done its beſt for Hops, which they reckon it will in about ten years, the trees may begin to bear. The Cherry-trees laſt about thirty years, and by the time the Apple-trees are large, they cut down the Cherry-trees.

The Eſſex planters account a moory land the propereſt for Hops, though there are ſeveral other ſorts of ſoil that are eſteemed very good.

Some account that land which has a roſſelly top, and a brick earth bottom, the beſt; a true roſſel or light ſand, is what they generally plant in, whether it be white or black.

Moory land is of different ſorts, ſome being ſtrong and heavy, ſo as to crack in ſummer; and ſome ſo light, that in dry ſeaſons it will blow away with the wind; and ſome are of a middle conſiſtence, being compoſed of both.

Theſe moors for goodneſs and value, are according to the nature and goodneſs of the ſoil that is underneath them; which being flung up upon the ſurface, will make a very good mixture, it being beſt to fling the under ſoil downward for Hops, becauſe they naturally root downwards, ſometimes four or five yards deep, and therefore the deepeſt and richeſt ſoil is beſt for them.

Few are acquainted with the value of moors, becauſe they do not ſearch into the bottom of them, by reaſon of the expenſiveneſs of doing it, and the difficulty of carrying off the water.

If the land be moiſt, it ought to be laid up in high ridges, and to be well drained, and the drains kept clear and open, eſpecially in winter, that the water do not rot or too much chill the roots.

If the land be ſour or cold, it will be very much helped by burning it; and if the haulm and ſtrings of the Hops be burnt every year, and ſome of the paring or ſides of the garden or other earth be laid on them as they burn, and then more haulm be laid over that, and ſo continued layer upon layer, it will make an excellent compoſt to make the hills with.

As to the ſituation of a Hop-ground, one that inclines to the ſouth or weſt is the moſt eligible; but if it be expoſed to the north-eaſt or ſouth-weſt winds, there ſhould be a ſhelter of ſome trees at a diſtance; becauſe the north-eaſt winds are apt to nip the tender ſhoots in the ſpring, and the ſouth-weſt frequently break and blow the poles at the latter end of the ſummer, and very much endanger the Hops.

Hops require to be planted in an open ſituation, that the air may freely paſs round and between them to dry up and diſſipate the moiſture, whereby they will not be ſo ſubject to fire blaſts, which often deſtroy the middles of large plantations, while the outſides remain unhurt.

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[l] P. 145. ed. 4. 1687.

[m] P. 132. ed. 2. 1708.

[n] P. 565.

[o] Mortimer 145. Neck. gallob. 399.

As for the preparation of the ground for planting, it ſhould, the winter before, be ploughed and harrowed even; and then lay upon it in heaps a good quantity of freſh rich earth, or well rotted dung and earth mixed together, ſufficient to put half a buſhel in every hole to plant the Hops in, unleſs the natural ground be very freſh and good.

Then lay a line acroſs it from the hedge, in which knots have been tied, at the diſtance you deſign your Hop-hills to be at, about eight or nine feet diſtance the whole length of the ground, and place a ſharp pointed ſtick at every knot; then lay aſide the line, and with two forked ſticks of about eight or nine feet long, you may from the firſt row ſet out the whole ground, by applying the two forks or two of the ſticks which were firſt ſet up, and placing another row at the ends, where the forked ſticks meet triangularwiſe; then you ſhould dig a hole at every ſtick about a foot and a half wide, and fill it full of the good earth you brought in.

If you plough the ground with horſes between the hills, it will be beſt to plant them in ſquares chequerwiſe; but the quincunx form is the moſt beautiful, and it will alſo be better for the Hop; but if the ground is intended to be cultivated by the breaſt-plough, it will be beſt to plant them in ſquares; but which way ſoever you make uſe of, a ſtake ſhould be ſtuck down at all the places where the hills are to be made.

Perſons ought to be very curious in the choice of the plants and ſets, as to the kind of the Hop; for if the Hop-garden be planted with a mixture of two or three ſorts of Hops that ripen at different times, it will cauſe a great deal of trouble, and be a great detriment to the owner.

The two beſt ſorts are the white and the gray bind; the latter is a large ſquare Hop, more hardy, and is the more plentiful bearer, but ripens later than the former.

There is alſo another ſort of the white bind, which ripens in a week or ten days before the common; but this is tenderer, and a leſs plentiful bearer, but it has this advantage, it come firſt to market.

But if three grounds, or three diſtant parts of one ground, be planted with theſe three ſorts, there will be this conveniency, that they may be picked ſucceſſively as they become ripe.

The ſets ought to be procured out of grounds that are entirely of the ſame ſorts you would have, they ſhould be five or ſix inches long, with three or more joints or buds on them, all the old bind and hollow part of the ſet being cut off.

If there be a ſort of Hop you value, and would increaſe plants and ſets from, the ſuperfluous binds may be laid down when the Hops are tied, cutting off the tops, and burying them in the hill; or when the Hops are dreſſed, all the cuttings may be ſaved, and laid in rows in a bed of good earth; for almoſt every part will grow, and become a good ſet the next ſpring.

Some have tried to raiſe a Hop-ground by ſowing ſeeds, but that turns to no account, becauſe that way is not only tedious, but the Hops ſo produced are commonly of different kinds, and many of them wild and barren.

As to the ſeaſons of planting Hops, the Kentiſh planters beſt approve the months of october and march, both which ſucceed very well; but the common ſets are not to be had in october, unleſs from ſome ground that is to be digged up and deſtroyed; and likewiſe there is ſome danger that the ſets may be rotted, if the winter prove very wet; but the moſt uſual time of procuring them is in march, when the Hops are cut and dreſſed.

As to the manner of planting the ſets, you ſhould put two or three good ſets in every hole with a ſetting ſtick, at about four inches diſtance, placing them ſloping; they muſt ſtand even with the ſurface of the ground; let them be preſſed cloſe with the hand, and covered with fine earth, and a ſtick ſhould be placed on each ſide the hill to ſecure it.

The ground being thus planted, all that is to be done more that ſummer, is to keep the hills clear from weeds, and to horſe-hoe the ground about the month of may, gathering up the ſtones, if more are turned up by ploughing, and to raiſe a ſmall hill round about the plants; and in june you muſt twiſt the young binds or branches together in a bunch or knot, for if they are tied up to ſmall poles the firſt year, in order to have a few Hops from them, it will not countervail the weakening the plants.

A mixture of compoſt or dung being prepared for your Hop-ground, the beſt time for laying it on, if the weather prove dry, is about Michaelmas, that the wheels of the dung-cart may not injure the Hops, nor furrow the ground: if this be not done then, you muſt be obliged to wait till the froſt has hardened the ground, ſo that it will bear the dung-cart; and this is alſo the time to carry on your new poles, to recruit thoſe that are decayed, and to be caſt out every year.

If you have good ſtore of dung, the beſt way will be to ſpread it in the alleys all over the ground, and to dig or plough it in the winter following. The quantity they will require, will be forty loads to an acre, reckoning about thirty buſhels to the load.

If you have not dung enough to cover all the ground in one year, you may lay it on one part one year, and on the reſt in another, or a third; for there is no occaſion to dung the ground after this manner, oftener than once in two or three years.

Thoſe who have but a ſmall quantity of dung, uſually content themſelves with laying on about twenty loads upon an acre every year; this they lay only on the hills, either about november, or in the ſpring; which laſt ſome account the beſt time, when the Hops are dreſſed, to cover them after they are cut; but if it be done at this time, the compoſt or dung ought to be very well rotted and fine.

As to the dreſſing of the Hops, when the Hop-ground is dug or ploughed in january or february, the earth about the hills, and very near them, ought to be taken away with a ſpade, that you may come the more conveniently at the ſtock to cut it.

About the end of february, if the Hops were planted the ſpring before, or if the ground be weak, they ought to be dreſſed in dry weather; but elſe, if the ground be ſtrong and in perfection, the middle of march will be a good time; and the latter end of march, if it be apt to produce over-rank binds, or the beginning of april, may be ſoon enough.

Then having with an iron picker cleared away all the earth out of the hills, ſo as to make the ſtock bare to the principal roots, with a ſharp knife you muſt cut off all the ſhoots which grew up with the binds the laſt year; and alſo the young ſuckers, that none be left to run in the alley and weaken the hill. It will be proper to cut one part of the ſtock lower than the other, and alſo to cut that part low, that was left higheſt the preceding year. By purſuing this method, you may expect to have ſtronger buds, and alſo keep the hill in good order.

In dreſſing thoſe Hops that have been planted the year before, you ought to cut off both the dead tops, and the young ſuckers which have ſprung up from the ſets, and alſo to cover the ſtocks with fine earth a finger's length in thickneſs.

About the middle of april the Hops are to be poled, when the ſhoots begin to ſprout up; the poles muſt be ſet to the hills deep into the ground, with a ſquare iron pitcher or crow, that they may the better endure the wind; three poles are ſufficient for one hill. Theſe ſhould be placed as near the hills as may be, with their bending tops turned outwards from the hill, to prevent the binds from entangling; and a ſpace between two poles ought to be left open to the ſouth, to admit the ſun beams.

The poles ought to be in length ſixteen or twenty feet, more or leſs, according as the ground is in ſtrength; and great care is to be taken not to over-pole a young or weak ground, for that will draw the ſtock too much, and weaken it. If a ground be over-poled, you are not to expect a good crop from it: for the branches which bear the Hops will grow very little, till the binds have over-reached the poles, which they cannot do when the poles are too long. Two ſmall poles are ſufficient for a ground that is young.

If you wait till the ſprouts or young binds are grown to the length of a foot, you will be able to make a better judgment where to place the largeſt poles; but if you ſtay till they are ſo long as to fall into the alleys, it will be injurious to them, becauſe they will entangle one with another, and will not claſp about the pole ſo readily.

Maple or Aſpen poles are accounted the beſt for Hops, on which they are thought to proſper beſt, becauſe of their warmth; or elſe, becauſe the climbing of the Hop is furthered by means of the roughneſs of the bark. But for laſtingneſs, Aſhen or Willow poles are preferable; but Cheſtnut poles are the moſt durable of all.

If, after the Hops are grown up, you find any of them have been under-poled, taller poles may be placed near thoſe that are too ſhort, to receive the binds from them.

As to the tying of Hops, the buds that do not claſp of themſelves to the neareſt pole when they are grown to three or four feet high, muſt be guided to it by the hand, turning them to the ſun, whoſe courſe they will always follow. They muſt be bound with withered Ruſhes, but not ſo cloſe as to hinder them from climbing up the pole.

This you muſt continue to do till all the poles are furniſhed with binds, of which two or three are enough for a pole; and all the ſprouts and binds that you have no occaſion for, are to be plucked up; but if the ground be young, then none of theſe uſeleſs binds ſhould be plucked up, but ſhould be wrapt up together in the middle of the hill.

When the binds are grown beyond the reach of your hands, if they forſake the poles, you ſhould make uſe of a ſtand ladder in tying them up.

Some adviſe, that if the binds be very ſtrong, and overgrow the poles very much, you ſtrike off their heads with a long ſwitch, to increaſe their branching below.

Towards the latter end of may, when you have made an end of tying them, the ground muſt have the ſummer ploughing or digging, which is done by caſting up with the ſpade ſome fine earth into every hill, and a month after it muſt be again repeated, and the hills made up to a convenient bigneſs.

It is not at all to be doubted, but that a thorough watering would be of very great advantage to Hops in a hot dry ſummer; but it is ſo much charge and trouble to do this, that unleſs you have a ſtream at hand to flow the ground, it is ſcarce practicable.

When the Hops blow, you ſhould obſerve if there be any wild barren hills among them, and mark them, by driving a ſharpened ſtick into every ſuch hill, that they may be digged up and replanted.

Hops as well as other vegetables, are liable to diſtempers and diſaſters, and among the reſt to the fen. The Rev. Dr. Hales, in his excellent Treatiſe of Vegetable Statics, treating of Hops, gives us the following account of the ſtate of Hops in Kent in the year 1725, that he received from Mr. Auſten of Canterbury, which is as follows:

In mid april not half the ſhoots appeared above ground, ſo that the planters knew not how to pole them to the beſt advantage.

This defect of the ſhoot, upon opening the hills, was found to be owing to the multitude and variety of vermin that lay preying upon the roots; the increaſe of which, was imputed to the long and almoſt uninterrupted ſeries of dry weather for three months before. Towards the end of april many of the Hop-vines were infeſted with flies.

About the 20th of may there was a very unequal appearance, ſome Vines being run ſeven feet, others not above three or four; ſome juſt tied to the poles, and ſome not viſible; and this diſproportionate inequality in their ſize, continued through the whole time of their growth.

The flies now appeared upon the leaves of the forwardeſt Vines, but not in ſuch numbers here, as they did in moſt other places. About the middle of june the flies increaſed, yet not ſo as to endanger the crop; but in diſtant plantations they were exceedingly multiplied, ſo as to ſwarm towards the end of the month.

June the 27th ſome ſpecks of fen appeared. From this time to the 9th of july was very dry weather. At this time, when it was ſaid, that the Hops in moſt parts of the kingdom looked black and ſickly, and ſeemed paſt recovery, ours held it out pretty well, in the opinion of the moſt ſkilful planters.

The great leaves were indeed diſcoloured, and a little withered, and the fen was ſomewhat increaſed. From the 9th of july to the 23d, the fen increaſed a great deal; but the flies and lice decreaſed, it raining much daily. In a week more the fen, which ſeemed to be almoſt at a ſtand, was conſiderably increaſed, eſpecially in thoſe grounds where it firſt appeared.

About the middle of auguſt the Vines had done growing both in ſtem and branch, and the forwardeſt began to be in the Hop; the reſt in bloom; the fen continued ſpreading where it was not before perceived, and not only the leaves, but many of the burs were alſo tainted with it.

About the 20th of auguſt ſome of the Hops were infected with the fen, and whole branches corrupted by it. Half the plantations had pretty well eſcaped hitherto, and from this time the fen increaſed but little; but ſeveral days wind and rain the following week ſo diſtorted them, that many of them began to dwindle, and at laſt came to nothing; and of thoſe that then remained in bloom, ſome never turned to Hops; and of the reſt which did, many of them were ſo ſmall, that they very little exceeded the bigneſs of a good thriving bur.

We did not begin to pick till the 8th of ſeptember, which is eighteen days later than we began the year before; the crop was little above two hundred on an acre round, and not good. The beſt Hops ſold this year at Way-hill, for 16l. the hundred.

Dr. Hales gives us an account of the following experiment that he made on Hop-vines. He tells us, that in july he cut off two thriving Hop-vines near the ground, in a thick ſhady part of the garden, the pole ſtill ſtanding; he ſtripped the leaves off from one of theſe Vines, and ſet their ſtems in known quantities of water in little bottles; that with leaves imbibed in a twelve hours day four ounces, and that without leaves three-fourths of an ounce.

He took another Hop-pole with its Vines on it, and carried it out of the Hop-ground into a free and open expoſure; theſe imbibed and perſpired as much more as the former in the Hop-ground, which is, doubtleſs, the reaſon why the Hop-vines on the outſides of plantations, where they are moſt expoſed to the air, are ſhort and poor, in compariſon of thoſe in the middle of the ground, viz. becauſe being much dried, their fibres harden ſooner, and therefore they cannot grow ſo kindly as thoſe in the middle of the ground, which, by ſhade, are always kept moiſter, and more ductile.

The ſame curious author proceeds as follows: Now there being 1000 hills in an acre of Hop-ground, and each hill having three poles, and each pole three Vines, the number of Vines will be 9000, each of which perſpiring four ounces, the ſum of all the ounces perſpired by an acre in twelve hours day will be 36000 ounces = 15750000 grains = 62007 cube inches, or 220 gallons, which divided by 6272640, the number of ſquare inches in an acre, it will be found, that the quantity of liquor perſpired by all the Hop-vines will be equal to an area of liquor as broad as an acre, and $\frac{1}{151}$ part of an inch deep, beſides what evaporated from the earth.

And this quantity of moiſture, in a kindly ſtate of the air, if daily carried off, is a ſufficient quantity to keep the Hops in a healthy ſtate; but in a rainy moiſt ſtate of air, without a due mixture of dry weather, too much moiſture hovers about the Hops, ſo as to hinder, in ſome meaſure, the kindly perſpiration of the leaves, whereby the ſtagnating ſap corrupts, and breeds mouldy fen, which often ſpoils vaſt quantities of flouriſhing Hop-grounds.

This was the caſe in the year 1723, when for ten or fourteen days almoſt continual rains fell, about the latter half of july, after four months dry weather, upon which the moſt flouriſhing and promiſing Hops were all infected with mould, or fen, in their leaves and fruit, while the then poor and unpromiſing Hops eſcaped, and produced plenty, becauſe they, being ſmall, did not perſpire ſo great a quantity as others, nor did they confine the perſpired vapour, ſo much as the large thriving Vines did in their ſhady thickets.

This rain on the then warm earth, made the Graſs ſhoot out as faſt as if it were in a hot-bed, and the Apples grew ſo precipitately, that they were of a flaſhy conſtitution, ſo as to rot more remarkably than had ever been remembered.

The planters obſerve, That when a mould, or fen, has once ſeized any part of the ground, it ſoon runs over the whole, and that the Graſs; and other herbs under the Hops, are infected with it, probably, becauſe the ſmall ſeeds of this quick-growing mould, which ſoon come to maturity, are blown over the whole ground; which ſpreading of the ſeed may be the reaſon why ſome grounds are infected with fen for ſeveral years ſucceſſively, viz. from the ſeeds of the laſt year's fen. Might it not then be adviſed to burn the fenny Hop-vines, as ſoon as the Hops are picked, in hopes thereby to deſtroy ſome of the ſeed of the mould?

Mr. Auſten, of Canterbury, obſerves fen to be more fatal to thoſe grounds that are low and ſheltered, than to the high and open grounds, to thoſe that are ſhelving to the north, than to thoſe ſhelving to the ſouth; to the middle of grounds than to the outſides; to the dry and gentle grounds, than to the moiſt and ſtiff grounds.

This was very apparent throughout the plantations where the land had the ſame workmanſhip and help beſtowed upon it, and was wrought at the ſame time. But if in either of theſe caſes there was a difference, it had a different effect, and the low and gentle grounds, that lay neglected, were then ſeen leſs diſtempered than the open and moiſt, which were carefully managed and looked after.

The honey dews are obſerved to come about the 11th of june, which, by the middle of july, turn the leaves black, and make them ſtink.

Dr. Hales relates, That in the month of july (the ſeaſon for fire-blaſts, as the planters call them) he has ſeen the Vines in the middle of the Hop-ground ſcorched up almoſt from one end of a large ground to the other, when a hot gleam of ſun-ſhine has come immediately after a ſhower of rain, at which time vapours are all ſeen with the naked eye, but eſpecially with reflecting teleſcopes, to aſcend ſo plentifully as to make a clear and diſtinct object become immediately very dim and tremulous; nor was there any dry gravelly vein in the ground along the courſe of this ſcorch; it was therefore, probably, owing to the much greater quantity of ſcorching vapours in the middle, than the outſides of the ground, and that being a denſer medium, it was much hotter than a more rare medium.

And, perhaps, the great volume of aſcending vapours might make the ſun-beams converge a little towards the middle of the ground, that being a denſer medium, and thereby increaſe the heat conſiderably; for he obſerved, That the courſe of the ſcorched Hops was in lines at right angles to the ſun-beams about eleven o'clock, at which time the hot gleam was.

The Hop-ground was in a valley which ran from ſouth-weſt to north-eaſt, and to the beſt of his remembrance, there was but little wind, and that in the courſe of the ſcorch; but had there been ſome other gentle wind, either north or ſouth, it is not improbable but that the north wind gently blowing the volume of riſing wreak on the ſouth ſide of the ground, that ſide might have been moſt ſcorched, and ſo vice verſa.

As to particular fire-blaſts, which ſcorch here and there a few Hop-vines, or one or two branches of a tree, without damaging the next adjoining, what aſtronomers obſerve, may hint to us no very improbable cauſe of it, viz. They frequently obſerve (eſpecially with reflecting teleſcopes) ſmall ſeparate portions of pellucid vapours floating in the air, which, though not viſible to the naked eye, are yet conſiderably denſer than the circumambient air; and vapours of ſuch a degree of denſity may very probably either acquire ſuch a ſcalding heat from the ſun as will ſcorch what plants they touch, eſpecially the more tender.

(An effect which the gardeners about London have too often found to their coſt, when they have incautiouſly put bell-glaſſes over their Cauliflowers early in a froſty morning, before the dew was evaporated off them; which dew, being raiſed by the ſun's warmth, and confined within the glaſs, did there form a denſe, tranſparent, ſcalding vapour, which burned and killed the plants:)

Or, perhaps, the upper or lower ſurface of theſe tranſparent, ſeparate, flying volumes of vapours, may, among the many forms they revolve into, ſometimes approach ſo near to an hemiſphere, or hemicylinder, as thereby to make the ſun-beams converge, ſo as often to ſcorch the more tender plants they ſhall fall on, and ſometimes alſo parts of the more hardy plants and trees, in proportion to the greater or leſſer convergency of the ſun's rays.

The learned Boerhaave, in his Theory of Chymiſtry, p. 245, Shaw's edition, obſerves, That thoſe white clouds which appear in ſummer time, are, as it were, ſo many mirrors, and occaſion exceſſive heat. Theſe cloudy mirrors are ſometimes round, ſometimes concave, polygonous, &c. When the face of heaven is covered with ſuch white clouds, the ſun ſhining among them, muſt, of neceſſity, produce a vehement heat, ſince many of his rays, which would otherwiſe, perhaps, never touch our earth, are hereby reflected to us. Thus, if the ſun be on one ſide, and the clouds on the oppoſite one, they will be perfect burning-glaſſes.

I have ſometimes (continues he) obſerved a kind of hollow clouds full of hail and ſnow, during the continuance of which the heat was extreme, ſince, by ſuch condenſation, they were enabled to reflect more ſtrongly. After this came a ſharp cold, and then the clouds diſcharged their hail in great quantity, to which ſucceeded a moderate warmth. Frozen concave clouds, therefore, by their great reflexions, produce a vigorous heat, and the ſame, when reſolved, exceſſive cold.

From which Dr. Hales obſerves as follow:

Hence we ſee, that blaſts may be occaſioned by the reflexions of the clouds, as well as by the above-mentioned refraction of denſe tranſparent vapours.

About the middle of july Hops begin to blow, and will be ready to gather about Bartholomew-tide. A judgment may be made of their ripeneſs, by their ſtrong ſcent, their hardneſs, and the browniſh colour of their ſeed.

When by theſe tokens they appear to be ripe, they muſt be picked with all the expedition poſſible; for if at this time a ſtorm of wind ſhould come, it would do them great damage, by breaking the branches, and bruiſing and diſcolouring the Hops; and it is very well known, that Hops, being picked green and bright, will ſell for a third part more than thoſe which are diſcoloured and brown.

The moſt convenient way of picking them is into a long ſquare frame of wood, called a bin, with a cloth hanging on tenter-hooks within it, to receive the Hops as they are picked.

The frame is compoſed of four pieces of wood joined together, ſupported by four legs, with a prop at each end to bear up another long piece of wood, placed at a convenient height over the middle of the bin; this ſerves to lay the poles upon which are to be picked.

This bin is commonly eight feet long, and three feet broad; two poles may be laid on it at a time, and ſix or eight perſons may work at it, three or four on each ſide.

It will be beſt to begin to pick the Hops on the eaſt or north ſide of your ground, if you can do it conveniently; this will prevent the ſouth-weſt wind from breaking into the garden.

Having made choice of a plot of the ground containing eleven hills ſquare, place the bin upon the hill which is in the center, having five hills on each ſide; and when theſe hills are picked, remove the bin into another piece of ground of the ſame extent, and ſo proceed till the whole Hop-ground is finiſhed.

When the poles are drawn up to be picked, you muſt take great care not to cut the binds too near the hills, eſpecially when the Hops are green, becauſe it will make the ſap to flow exceſſively.

And if the poles do not come up without difficulty, they ſhould be raiſed by a piece of wood in the nature of a lever, having a forked piece of iron, with teeth on the inſide, faſtened within two feet of the end.

The Hops muſt be picked very clean, i. e. free from leaves and ſtalks, and, as there ſhall be occaſion, two or three times in a day the bin muſt be emptied into a Hop-bag made of coarſe linen cloth, and carried immediately to the oaſt, or kiln, in order to be dried; for if they ſhould be long in the bin, or bag, they will be apt to heat, and be diſcoloured.

If the weather be hot, there ſhould no more poles be drawn than can be picked in an hour, and they ſhould be gathered in fair weather, if it can be, and when the Hops are dry: this will ſave ſome expenſe in firing, and preſerve their colour better when they are dried.

The beſt method of drying Hops is with charcoal on an oaſt or kiln, covered with hair-cloth, of the ſame form and faſhion that is uſed for drying malt. There is no need to give any particular directions for the making it, ſince every carpenter, or bricklayer, in thoſe countries where Hops grow, or malt is made, knows how to build them.

The kiln ought to be ſquare, and may be of ten, twelve, fourteen, or ſixteen feet over at the top, where the Hops are laid, as your plantation requires, and your room will allow. There ought to be a due proportion between the height and breadth of the kiln, and the beguels of the ſteddle where the fire is kept, viz. if the kiln be twelve feet ſquare on the top, it ought to be nine feet high from the fire, and the ſteddle ought to be ſix feet and a half ſquare, and ſo proportionable in other dimenſions.

The Hops muſt be ſpread even upon the oaſt a foot thick or more, if the depth of the curb will allow it, but care is to be taken not to overload the oaſt, if the Hops be green or wet.

The oaſt ought to be firſt warmed with a fire before the Hops are laid on, and then an even ſteady fire muſt be kept under them; it muſt not be too fierce at firſt, leſt it ſcorch the Hops; nor muſt it be ſuffered to ſink or ſlacken, but rather be increaſed till the Hops be near dried, leſt the moiſture, or ſweat, which the fire has raiſed, fall back, or diſcolour them. When they have lain about nine hours, they may be turned, and in two or three hours more they may be taken off the oaſt. It may be known when they are well dried by the brittleneſs of the ſtalks, and the eaſy falling off of the Hop leaves.

The Dutch and Flemings have another method of drying their Hops: they make a ſquare kiln, or room, about eight or ten feet wide, built of brick or ſtone, having a door at one ſide, and a fire-place in the middle of the room, on the floor, about thirteen inches wide within, and thirteen inches high in length from the mouth of it, almoſt to the back part of the kiln, a paſſage being left juſt enough for a man to go round the end of it; this they call a horſe, ſuch as is commonly made in malt-kilns, the fire paſſing out at the holes at each ſide, and at the end of it.

The bed, or floor, on which the Hops lie to be dried, is placed about five feet high above; about that is a wall near four feet high, to keep the Hops from falling.

A window is made at one ſide of the upper bed, to ſhove off the dry Hops down into a room prepared to receive them. The beds are made of laths, or rails, ſawn very even, lying a quarter of an inch diſtant from one another, with a croſs beam in the middle to ſupport them; the laths are let in even with the top of the beam, and this keeps them even in the places; this they call an oaſt.

The Hops are laid on this bed by baſkets full, without any oaſt-cloth, beginning at one end, and ſo going on till all is covered, half a yard thick, without treading them; then they even them with a rake, that they may lie of equal thickneſs.

This being done, they kindle the fire below, either of wood or charcoal, but the latter is accounted the better fuel for Hops; this fire is kept as much as may be at an equal or conſtant heat, and only at the mouth of the furnace, for the air will ſufficiently diſperſe it.

They do not ſtir them till they are thoroughly dried, i. e. till the top is as fully dried as the bottom; but if they find any place not to be ſo dry as the reſt, (which may be known by reaching over them with a ſtick or wand, and touching them in ſeveral places,) they obſerve where they do not rattle, and where they do; and where they do not rattle, they abate them there, and diſpoſe of them where the places were firſt dry.

They know when they are thoroughly dry, by the brittleneſs of the inner ſtalk, if it be ſhort when it is rubbed; which when they find, they take out the fire, and ſhove out the Hops at the window that is made for that purpoſe, into the room made to receive them, with a coal-rake made with a board at the end of a pole, and then go in at a door below, and ſweep up the Hops and ſeeds that fall through, and put them to the other Hops; then they lay another bed of green Hops, and renew the fire, and proceed as before.

This method is diſapproved by ſome, becauſe (they ſay) the Hops lying ſo thick, and not being turned, the under part of them muſt needs dry before the upper; and the fire paſſing through the whole bed to dry the uppermoſt, muſt neceſſarily over-dry, and much prejudice the greateſt part of the Hops, both in ſtrength and weight, beſides the unneceſſary expenſe of firing, which muſt be long continued to dry thoroughly ſo many together.

Therefore ſome have improved on this method, and adviſed to make the kiln much as is before directed as to the Dutch way.

Firſt to make a bed of flat ledges about an inch thick, and two or three inches broad, ſawn, and laid acroſs one another the flat way, chequerwiſe, at about three or four inches diſtance one from the other, the edges being ſo entered one into the other, that the floor may be even and ſmooth; this bed may be made to reſt on two or three joiſts, ſet edgewiſe to ſupport it from ſinking.

This bed is to be covered with large double tin, ſoldered together at each joint, and the ledges muſt be ſo ordered, before they are laid, that the joints of the tin may always lie over the middle of the ledge, the bed being wholly covered over with tin: boards muſt be fitted about the edges of the kiln, to keep up the Hops, but one ſide muſt be made to remove, that the Hops may be ſhoved off as before.

On this bed, or floor of tin, the Hops may be turned without ſuch hazard or loſs, as upon the hair-cloth: and alſo it will require a leſs expenſe of fuel, and, beſides, any ſort of fuel will ſerve in this kiln, as well as charcoal, becauſe the ſmoke does not paſs through the Hops as it does the former ways, but then care is to be taken, that there be paſſages made for it at the ſeveral corners and ſides of the kiln.

It is found by experience, that the turning of Hops, though it be after the moſt eaſy and beſt manner, is not only an injury and waſte to the Hops, but alſo an expenſe of fuel and time, becauſe they require as much fuel, and as long a time, to dry a ſmall quantity, by turning them, as a large one.

Now, this may be prevented, by having a cover (to be let down and raiſed at pleaſure) to the upper bed whereon the Hops lie.

This cover may alſo be tinned, by nailing ſingle tin plates over the face of it, ſo that when the Hops begin to dry, and are ready to burn, i. e when the greateſt part of their moiſture is evaporated, then the cover may be let down within a foot, or leſs, of the Hops (like a reverbatory) and will reflect the heat upon them, ſo that the top will ſoon be as dry as the lowermoſt, and every Hop be equally dried.

As ſoon as the Hops are taken off the kiln, lay them in a room for three weeks or a month to cool, give, and toughen; for if they are bagged immediately, they will powder; but if they lie a while (and the longer they lie the better, provided they be covered cloſe with blankets to ſecure them from the air,) they may be bagged with more ſafety, as not being liable to be broken to powder in treading, and this will make them bear treading the better, and the harder they are trodden, the better they will keep.

The common method of bagging is as follows; they have a hole made in an upper floor, either round or ſquare, large enough to receive a Hop-bag (which conſiſts of four ells and a half of ell-wide cloth, and alſo contains ordinarily two hundred and a half of Hops) they tie a handful of Hops in each lower corner of the bag, to ſerve as handles to it, and they faſten the mouth of the hole, ſo placed that the hoop may reſt upon the edges of the hole.

Then he that is to tread the Hops down into the bag, treads the Hops on every ſide, another perſon continually putting them in as he treads them, till the bag is full, which being well filled and trodden, they unrip the faſtening of the bag to the hoops, and let it down, and cloſe up the mouth of the bag, tying up a handful of Hops in each corner of the mouth, as was done in the lower part.

Hops being thus packed, if they have been well dried, and laid up in a dry place, they will keep good ſeveral years; but care muſt be taken, that they be neither deſtroyed nor ſpoiled by the mice making their neſts in them.

The crop of Hops being thus beſtowed, you are to provide for another, firſt by taking care of the poles againſt another year, which are beſt to be laid up in a ſhed, having firſt ſtripped off the haulm from them; but if you have not that conveniency, ſet up three poles in the form of a triangle, or ſix poles (as you pleaſe) wide at the bottom, and having ſet them into the ground, with an iron pitcher, and bound them together at top, ſet the reſt of your poles about them; and being thus diſpoſed, none but thoſe on the outſide will be ſubject to the injuries of the weather, for all the inner poles will be kept dry, unleſs at the top; whereas, if they were on the ground, they would receive more damage in a fortnight, than by their ſtanding all the reſt of the year.

In the winter time provide your ſoil and manure for the Hop-ground againſt the following ſpring.

If the dung be rotten, mix it with two or three parts of common earth, and let it incorporate together till you have occaſion to uſe it in making your Hop-hills; but if it be new dung, then let it be mixed as before, till the ſpring come twelvemonths, for new dung is very injurious to Hops.

Dung of all ſorts was formerly more commonly made uſe of than now it is, eſpecially when rotted, and turned to mould, and they who have no other manure muſt uſe it; which, if they do, cows or hogs dung, or human ordure mixed with mud, may be a proper compoſt, becauſe Hops delight moſt in a manure that is cool and moiſt.

Some recommend chalk, or lime, as the beſt manure, except in cold lands, and in ſuch, pigeons dung will do beſt; a little of which laid to a hill, and ſo mixed, that it may not be too hot in a place, is of great advantage.

[*Hop Grounds in Kent.*

The principal part of the plantations of Eaſt Kent are on a good deep rich loamy ſurface, with a deep ſubſoil of loamy brick earth. There are however ſome good grounds, where the ſurface is very flinty, and ſome of a gravelly nature; but theſe are very inferior. The Hops growing about Canterbury and in Eaſt Kent are of a very fine rich quality, and if well managed, of a good colour. Middle Kent alſo, or the country round Maidſtone, the original ſpot where Hops were firſt planted, grows a great quantity, moſt of which is likewiſe of a very good quality; though ſome, being planted on land not fit for Hops, is coarſe.

When a piece of land is intended to be planted, plough the land as deep as poſſible early in october, and harrow it level; they mete or meaſure it each way with a four-rod chain, placing pieces of reed or ſtick at every tenth link, to mark the place of the hills, which makes one thouſand to an acre. Some few grounds are planted eight hundred, and ſome twelve hundred to an acre. Some are planted wider one way than the other, to admit ploughing between the hills; but this practice, although it has been tried many years, does not ſeem to increaſe, on account of the difficulty of digging along the rows where the plough cannot go; that part being much trodden with the horſes in ploughing digs ſo much the worſe, that an extraordinary expenſe is incurred, which in ſome meaſure defeats the economy of the plan. When the hills are marked out, holes are dug about the ſize of a gallon, which are filled with fine mould, and the nurſery plants placed in them.

Some put three plants, others two, and ſome only one good one to each hole. If cuttings be planted, the holes are dug in the ſpring, as ſoon as cutting-time commences; ſome fine mould is provided to fill up the holes, in which four or five cuttings are placed, each three or four inches in length: they are covered an inch deep with the fine mould, and preſſed down cloſe with the hand. Cuttings do not require any ſticks; but nurſery-plants muſt have ſticks or ſmall poles, ſix or ſeven feet high the firſt year: in both caſes the land is kept clean during the ſummer by horſe and hand hoeing: the next winter it is dug, and early in the ſpring the old binds are cut off ſmooth, about an inch below the ſurface; a little fine mould is then drawn over the crown of the hills. As ſoon as the young ſhoots appear, ſo that the hills may be ſeen, they are ſtuck with ſmall poles, from ſeven to ten feet long, in proportion to the length it is expected the bind will run; theſe poles are called ſeconds, and are generally bought in the woods at from five ſhillings to eight ſhillings the hundred, and three of them are placed to each hill. As ſoon as the binds are about two feet in length, women are employed to tie them to the poles: and the land is kept clean during the ſummer with horſe and hand hoeing as before.

The proper time for gathering them is known by the Hop rubbing freely to pieces, and the ſeed beginning to turn brown. They are picked in baſkets containing five buſhels each, and are carried to the oaſt in bags, at noon and evening, for drying. Great care and ſkill are neceſſary in this branch of the buſineſs; the ſmalleſt neglect or ignorance in the management of the fires will ſpoil the Hops, and occaſion great loſs to the planter. When dried and ſufficiently cool to get a little tough, ſo as not to crumble to powder, they are put into bags or pockets; the former containing two hundred weight and a half, the latter a hundred and quarter: they are then trodden very cloſe, and weighed by the exciſeman.

The ſecond year after planting, full ſized poles from fifteen to twenty feet in length, according to the ſtrength of the land, coſting from ſixteen ſhillings to thirty-ſix ſhillings the hundred, are placed to the hills inſtead of the ſeconds, which are removed to younger grounds. Here great care is neceſſary not to overpole; for thus young grounds are often much weakened: and it is equally neceſſary not to overdung them, as that will make them mouldy. Fifty cartloads of well-rotted farm-yard dung and mould, once in three years, are generally eſteemed ſufficient for an acre of land[p].

In order to have Hops of a good quality: 1ſt. They ought to be ripe before they are gathered; and in getting ſo, they paſs from a green to a rich yellow colour. 2dly. They ought to grow on a ſoil, that inſtead of enlarging the ſize of the Hop, grows them full of farina (provincially condition). 3dly. They ought to be very much but ſlowly dried, and then packed for market in the thickeſt covering that can be found, to preſerve their ſtrength. The colour of Hops that hang till they are ripe can never be ſo beautiful as if they were gathered green, for they are generally bruiſed by the equinoctial winds. But the quality of their bitter is ſuperior in flavour, goes farther, and will never deceive in brewing; they will alſo keep good, when full dried, many years[q].

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[p] Boys in Agric. Survey of Kent, 117 8° edit.

The implements neceſſary to a Hop-ground are,

1. An oaſt (to every plantation of four or five acres) about ſixteen feet ſquare, which built ſubſtantially with the requiſite ſtowage room, coſts from 150l. to 200l.

2. A ſet of picking baſkets, about twelve in number, which coſt about 5s. 6d. each. Alſo a good ſcale-beam with weights and ſcales, which together coſt about 5l.

3. A ſkim made with a frame like a wheelbarrow, which coſt about two guineas. This implement is very uſeful for tearing up weeds on ſummer-fallows.

4. A harrow to be drawn by one horſe, with a ſmall wheel in front, to go round at the ends of the plantation, and a pair of handles to be holden by the man who follows it, in order to keep it from bruiſing the binds. It coſts 1l. 15s.

5. An iron peeler to make holes in the land for the poles, coſting 6s. or 7s.: and a hop-dog to wrench them up, coſting 5s.[r]

Hop Grounds in Surry.

Mr. Miller mentions only three varieties of the Hop. In Surry they have what they call the Orchard Hop, which bears a long ſquare ſtrobile, and is perhaps the ſame with Mr. Miller's firſt. The ſtreaked Bind. Two or three varieties of White Bind. Smooth and rough Red Bind. The moſt eſteemed are the Streaked and the White Bind. The ſmooth Red is of little value; and as to the laſt, it is generally eradicated whenever it appears. The White Canterbury Bind is moſtly in uſe. The Golden Hop with a white Bind, which is probably the ſame with Mr. Miller's Oval Hop, ripens later than the other, and therefore on that account may be uſeful to the planter. There is alſo the Cluſter Hop, produced from a White Bind, but having the Hops growing more in cluſters than the others. The ſtreaked Bind is a deſirable Hop for a part at leaſt of a plantation, being early, of a pleaſant flavour, and generally of a good ſize. As to the term Garlick, it is not appropriate to any one variety; for they will all acquire that ſort of ſmell from diſtemper.

As to the ſoil, there will be no doubt of Hops thriving when there is good marl or chalk, or even a moiſt rock at bottom, with a ſurface of tolerably deep mould frequently manured.

In the preparation for planting, and the manner of it, the practice is very various. The ground is generally ploughed and harrowed well the winter before it is intended to be planted; but it does not ſeem neceſſary: for by the time the workmen have gone over it, firſt to ſet out the hills, and then to dig the holes and plant the Hops, the ground becomes ſo trodden as to be little the better for ploughing. A better method ſeems to be to prepare the ground well the ſummer before, and ſow it with Turneps, by which means it is thoroughly clean; and early in winter, (or if in autumn the better) either to pull up the Turneps or feed them off with ſheep, as occaſion may require; and ſo let it remain till the ſpring; and then plant the Hops, and immediately dig the ground. Sow Turneps again the enſuing ſummer, and as theſe muſt be hoed twice, the young Hops are cleaned at the ſame time. When they are ſpent, care muſt be taken, if they are fed off on the ground, to do it in dry weather. Thus the land is dreſſed by the ſheep, and will not require ſo much dung at firſt. Beans alſo or Potatoes may be planted the firſt year between the hills; and by either mode ſomething is made of the ground, for the Hops yield nothing that year, and indeed very little for profit the ſecond.

In Surry they have not the practice of planting Cherry or Apple trees as in Kent. About Alton they generally plant their Hops ſix feet ſquare; but about Farnham they plant much nearer: the ſuperiority of their ſoil enables them to do this with ſucceſs; but in blighting years they ſuffer more than the Alton planters, the circulation of air being much obſtructed by the cloſeneſs of the hills.

October is the moſt proper ſeaſon for planting with cuttings of the laſt year, or nurſery plants, as they are uſually called; and march, if you plant with cuttings of the ſame ſpring, that being the time of cutting Hops in general.

With regard to manuring the Hop-ground, every other year is often enough, and then about twenty dung-cart loads on an acre. It is the more frequent practice to lay the dung on the crown of the hill, that the rains in winter may waſh it down to the roots: but ſome ſpread the dung over the ground in autumn, and ſeldom dig it in before february. Part of it is brought to the hills in the courſe of hilling the Hops in ſummer; and part remains in the intervals for the nouriſhment of the fibres.

In cutting the Hops, a neceſſary caution ſhould be obſerved reſpecting ſuch as are young, not to uſe the knife too freely the firſt year. At this age a ſufficient number of joints ſhould be left below the knife; and if the plants are weak, it may be as well only to trim off the dead bind of the laſt year.

As to the length and ſize of the poles experience muſt direct the planter: but it is undoubtedly better to underpole, than to uſe ſuch poles as the Hop cannot over-climb.

After tyeing follows hoeing and the firſt hilling; then the ſecond hoeing and hilling, which finiſhes the buſineſs of cultivation; and ought to be done before the fibres get out much in the intervals, leſt theſe be diſturbed, and of courſe the growth of the Hops be checked. A very uſeful implement in this buſineſs is a triangular harrow drawn by one horſe, ſo conſtructed that the tines may break up all the ground. It not only roots up the weeds, but by looſening the ſurface expedites the workman's labour, and keeps the ground from cracking, eſpecially after the laſt hilling, when it is ſcraped over ſmoothly by the hoe in drawing up the hills. A man with a boy to lead the horſe will go over three acres in a day.

The Hop-grower has many enemies to dread. A fly ſimilar to that which is ſo injurious to Turneps attacks them on their firſt appearance in the ſpring, and ſometimes deſtroys the firſt ſhoots entirely: it is a very ſmall animal, and on going near to touch it, retreats into the ground with the nimbleneſs of a bed-flea. A handful of aſhes ſcattered over every hill is very ſerviceable in driving them away. The next enemy is the fly mentioned by Mr. Miller, by which he means the long-winged fly, as it is here called. The appearance of theſe animals is dreaded by the planter as a peſtilence; they are the forerunners of lice, and in the end generally prove fatal to the crop. It is an opinion with many that rain will waſh them off, but in this they are undoubtedly miſtaken, for they moſtly ſhelter themſelves on the under ſide of the leaf, where no rain can touch them. Lightning ſeems to be their greateſt enemy. Honey-dews are likewiſe very injurious to Hops; cauſing their leaves to turn black, ſhrink and at length fall off. They are ſometimes ſo affected with this diſtemper and the lice united, as to periſh entirely, and require to be planted anew for many hills together. Another calamity to which Hops are liable is the Red Blight. This ſeldom attacks them until the time of their coming to maturity; cauſing the Hops to turn reddiſh, or rather of deep yellow, and the leaves frequently to grow pale and ſickly. When this is the caſe, they acquire a garlick-like ſmell, and ought to be picked with the greateſt expedition. This diſorder being incident to particular lands, thoſe eſpecially of a light and weak nature, it appears rather to be a natural decay than a blight.

Experience will beſt teach the planter when his Hops are fit for picking. It is however the more prudent way to begin too ſoon than too late, as the high winds which prevail towards the equinox many times produce more injury to the planter, than he would ſuſtain by beginning a day or two before his Hops were thoroughly ripe. It is the prevailing opinion that the laſt-picked Hops will weigh heavier when dried than the firſt. This however is an error; for in the year 1788 I began picking Hops on the 18th of auguſt, being induced by the extreme ſcarcity of Hops in London, and knowing that I ſhould get a great price at that market. I was however at the ſame time perſuaded that they were ripe enough not to loſe their colour on the kiln. By the 28th of auguſt I was enabled to ſend near a ton to London, where I got ſome pounds for the hundred weight more than I did afterwards at Weyhill. Having cleared my kiln, and bagged off all that I had gathered, I had a fair opportunity of judging of the different weights of the firſt and laſt pickings, and on compariſon I found that the advantage lay on the ſide of the firſt. A buſhel of green Hops, in a favourable year, when they are well conditioned will yield about a pound and half in weight when dry[*].

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[q] Ibid. app. 188.

[r] Ibid. p. 49. & 120.

Hop Grounds in Worceſterſhire.

The different ſorts of Hop cultivated here, are the red, the green, and the white. A various cultivation, the real ſource probably of theſe firſt diſtinctions, has introduced a variety of each, though differing little more than in name and degree, of the ſame colour, ſhape, and ſize. There are two, however, in more particular eſteem, both with the planter and merchant; the Golding Vine, brought from the neighbourhood of Canterbury, and the Mathan White, the name of which denotes it to be a native of this plantation, and of the pariſh of that name. The moſt hardy, that which will flouriſh with the leaſt attention, and is leaſt liable to ſuffer from the ſeaſons, is the red; perhaps the original ſtock. The next is the green; which is alſo the moſt productive. The tendereſt, though at the ſame time the more valuable, is the white. The plantations of this county are principally to the weſt of the Severn, increaſing as they approach the banks of the Teame, and the confines of Herefordſhire. The ſituations preferred, are a gentle deſcent, with a ſouth, ſouth-weſt, or weſtern expoſure, ſcreened at a diſtance to the north and eaſt by high ground, or plantations of timber; but not ſo as to prevent a free ventilation: the ſoil, a deep loamy land, or ſtrong clay, after it has been thoroughly limed and manured: but above all, a boggy ſoil, when completely drained, and duly meliorated, is ſaid to produce the beſt Hops.

When meadow or paſture land is broke up for this purpoſe, it is either dug, or the ſward, being firſt pared thinly off by the paring plough, it is buried by the furrow plough, working full ten inches deep. Old tillage, when converted into Hop-grounds, requires to be very completely cleared of woods; to be thoroughly manured, and to have the ridges, provincially lands, entirely levelled. The different manners in which they are worked, are, the tump, and the ploughed grounds; the former by hand, and the latter by the plough: thoſe are laid out in the quincunx form, each tump (or hill) being at the diſtance of from five to ſeven feet from the centre of each other. On theſe, the diſtance between the ſtocks, is from three to four feet; that between the rows, from ſeven to nine; the greater or leſs ſpace being always allowed, as the land is either richer or poorer. In the ploughed, if the circumſtances of the ground will admit of it, the rows run moſtly north and ſouth, with a view to admit the ſun more generally when it has moſt force; but ſhould it be long and narrow, its greateſt length extending eaſt and weſt, that direction is preferred: there are thoſe who give it the preference when not influenced by any accidental circumſtances, as receiving the morning ſun, by which the chill of the night is ſooneſt diſſipated. The ſets are procured from the ſhoots, or roots of the ſtocks, at the annual time of dreſſing, the latter end of march, or beginning of april. They muſt have two joints each, the roots ſtriking from that in the ground, and the vine ſhooting from that above. Four are planted to a ſtock, at the diſtance of about four or ſix inches from each other, all inclining or pointing, ſo as to meet together in the centre.

There are two methods obſerved in planting young Hop-grounds; the firſt and more general is, to plant the ſets on the ſituation in which they are to remain, immediately after they are parted from the old ſtocks. In the other, the ſets are planted in nurſeries, in rows about three inches aſunder, with about five or ſix inches between the rows; here they grow till the month of october, when they are tranſplanted into the Hop-ground. Under this latter management, if the roots are good, one will be ſufficient for a ſtock. In removing them, great care muſt be taken to make the opening to receive them ſo large, as not to confine the roots; when planted from the ſtocks, a hole made with a peg, to place them in, is all that is required. The nurſery has certainly great advantage; beſides the ſaving of a conſiderable expenſe, where the ſets are to be purchaſed, the land may be worked through the ſummer, to prepare it for the plantation. During the firſt year, the grounds are ploughed, or hoed, provincially kerfed, three times. They produce no Hops; but a good crop of Peaſe, Beans, Cabbage, or Turneps, is obtained between the rows. The ſecond year they are poled, and yield half a crop: the third year, they are in perfection. When they have reached this ſtate, the management is uniformly as follows:—They are gone over, moſtly four times, with the plough or kerf, beginning about march. The firſt buſineſs is to throw down the tumps, and rows of the former year, and to work in the manure, previouſly brought on in the winter. This conſiſts of freſh earth, rotten dung, or a compoſt of dung, earth, and lime, judiciouſly proportioned, according to the nature of the ſoil; each acre receiving not leſs than ſixty cart loads, for a good dreſſing—it is repeated, according as the nature of the land renders it neceſſary. The ſtocks are now pruned, the remains of the old vines, and ſuperfluous ſhoots, are removed with the hop-knife. The ſecond moulds up the tumps and rows; the ſucceeding ones complete moulding up the plants, and deſtroy the weeds. The tumps are formed round, flat at top, and about twenty inches diameter, and ſomewhat broader at their bottom. The ploughed lands are thrown up much in the ſame manner as for Potatoes, or Beans, only higher, and with more ſoil. The ſhoots begin to appear in april, and the poles are pitched the latter end of the ſame month, or beginning of may. Theſe are ſet two or three to a ſtock, at a foot diſtance from each other, with great regularity and exactneſs, and inclining a little outwards, over the alleys. Some attention is neceſſary, in this part of the buſineſs, not to overpole the plants, either in number, or length of the poles, as it weakens them; and by drawing the vine out to too great a length, renders them leſs productive. About the cloſe of this month, and beginning of june, women are employed to direct the vine to the poles, and tie them with dried ruſhes. This is continued till they are out of reach. The only care now remaining is, to keep under weeds, and to go over the plantations occaſionally, to replace any vines that may ſtray, and repair any damage the plants or poles may have received from the weather. When they have reached their full growth, which is, in ſome meaſure, regulated by the number and length of the poles, the ſide ſhoots put out. The method of topping the vines, to promote the lateral ſhoots, ſaid to be practiſed in other plantations, is never uſed in this.

About the ſecond week in ſeptember they ripen, when the hop-pulling begins. In a plentiful year, it continues ſix weeks, more or leſs, according to the crop. The cribs are now placed, beginning on that part which lies moſt expoſed to the ſun, as being ſooneſt ripe; one, two, or more, as the proprietor's plantation is large or ſmall, and he has the convenience of kilns to dry them. Each crib has eight or ten pickers, women and children; they pick, if there is a tolerable crop, and they are any ways induſtrious, from ſix to eight buſhels each per diem, which is about a ſackful (the ſack in which they are carried green to the kiln); eight of theſe ſacks, when dried, make about one hundred weight; but in ſome ſeaſons, though no ways negligent, they will fall ſhort of one half of this quantity. The pickers come from the neighbouring counties; but the far greateſt number out of Wales; ſome from thirty and forty miles diſtant. From the cribs, the Hops are conveyed to the kilns, four or five of the ſacks alluded to before, at a time, on a horſe, and are dried as ſoon as poſſible: they damage conſiderably, if ſuffered to lie long together before they are put on the kilns. They will heat in ſix or eight hours, and loſe colour; to avoid which, the kilns are kept conſtantly employed day and night. The time the Hops take in drying, is from eight to twelve hours, according as they are ripe and dry. Great attention, and conſiderable judgment, are neceſſary in this part of the buſineſs, the whole of the year's expenſes and labour, and at times property to ſome amount, being at ſtake on a ſingle kiln—it is uſually entruſted to thoſe who have been long uſed to the practice. The general principle on which they proceed, is to begin with a very gentle fire, till warmed through; the heat is then gradually increaſed, and continued till the core (fruit ſtalk) is quite ſunk and dry. They are then removed, and thrown together in a heap, in a corner of a large room, appropriated to this purpoſe, and frequently turned from one ſide to the other, in order to cool them completely before they are bagged.

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[*] Obſervations communicated by Mr. Prowting of Chawton.

The method of bagging is as follows:—A ſtrong hoop is made faſt round the mouth of the ſack, which is then let down through a circular opening in the floor, made for this purpoſe; a few are firſt put in, when the man who is principal in this part of the buſineſs, gets in, and by conſtant treading, preſſes them down as cloſe as he can. A ſecond perſon is employed in breaking them (that is, tearing the flowers, &c. from the fruit ſtalk) and throwing them into the bag as they are wanted: thus they proceed, till it is full, when the mouth is looſened from the hoop, and cloſed, leaving at each corner of the ſack a ſpace for the hand, for the better convenience of thoſe who are employed in carrying them.

In the ground, nothing more is done, but ſtripping and piling the poles; theſe are always ſet up in them, about three hundred in a pile, ſloping and propping each other, the better to withſtand the wind. Different opinions are entertained reſpecting the ſuperiority of the tump and plough management; the former has certainly the advantage in many particulars; and is ſaid to be cheaper and more productive: but as it is impoſſible, from the preſent extent of the plantation, that any conſiderable proportion can be worked in this manner, from want of hands, the enquiry cannot be of much conſequence. The expenſes of theſe plantations may be calculated from the following ſtatement:—As they always occupy the moſt valuable tract on the farm, the rent cannot be ſet down lower than thirty-one ſhillings per acre, in ſome inſtances it is much higher. The acre is not to be eſtimated as ſtatute meaſure, but after the rate of one thouſand ſtocks to the acre, which is in general one-fifth leſs. The expenſe of manure is very heavy, as they produce none, except the aſhes from the burning of the vines and leaves; ſo that were juſtice done to the reſt of the land, the greater part ought to be procured from home. The price of dung (provincially muck) in general, is about ſix ſhilling per waggon-load, or three ſhillings per ton; (if from ſtables, in which horſes are fed plentifully with corn, the price runs higher in proportion) and is frequently to be fetched eight or ten miles.

The Hop-grounds are worked ſometimes through the ſeveral ſeaſons, as they are termed, at a fixed price, which is from fifteen ſhillings to twenty ſhillings per acre, according to the different quality of the ſoil. The ſeaſons are four, and thus divided:—throwing down and cutting, ſpreading and pitching poles, kerfing and tumping, ſtripping and piling poles: otherwiſe the workman receives his uſual pay of one ſhilling per day, with drink; or ſome parts are taken by the acre, as pitching poles three ſhillings, ſtripping and piling two ſhillings and ſix-pence to three ſhillings and ſix-pence. The women employed to tie the vine receive ſix-pence per day, with two quarts of drink; or they take them by the year, at three ſhillings or three ſhillings and ſix-pence per acre. The Hop pullers receive from ſix-pence to eight-pence per day, with a pint of thickened milk, or ſomething ſimilar, for breakfaſt every morning; two quarts of drink per day, and two dinners every week. The pole-man, he who brings and removes the poles, has all his meals, drink, and from four ſhillings to ſix ſhillings per week. The coal (pit-coal charked) with which they are dried, is alſo an expenſe of conſiderable conſequence; it is chiefly procured at Pinſax, in this county, at a diſtance of ſeveral miles from ſome of the plantations, where it coſts two-pence halfpenny or three-pence per buſhel; twenty-eight buſhels are a ton, and it takes two tons of coal to dry one of Hops. The drier is paid from twelve ſhillings to twenty-one ſhillings per week, varying according to the number of kilns he has to attend: he has alſo his meals and drink. He who has the management of the bagging, is paid four-pence per hundred weight, excluſive of his aſſiſtant. There are different articles uſed for bagging: the Lubecks, and a ſort of cloth manufactured at Dudley, in this county, are the moſt in uſe, and chiefly the latter. The price varies according to the demand. The Lubecks are deareſt; they coſt, in general, from twenty-eight ſhillings to thirty-four ſhillings per piece, and are thirty-ſix yards long, and about thirty-one inches wide. The Dudleys coſt from twenty-two ſhillings to thirty-two ſhillings, and are of the ſame dimenſions, each piece making eight ſacks, four yards and three quarters long.

Moſt of the eſtates which grow many Hops, have plantations in which the poles are raiſed. Aſh and barked oak are preferred; but willow, poplar, and alder are alſo uſed. Where the eſtate does not produce a ſufficiency, they are bought at the woods and coppices in the neighbourhood, at from five ſhillings to fifteen ſhillings per hundred: their length is from eight to eighteen, or twenty feet, proportioned to the goodneſs of the lands; they laſt, with care, ſeven or eight years. The ſets, when bought, coſt from ſix-pence to two ſhillings and ſix-pence per hundred. The laſt expenſe is the duty, which is one penny per pound, and fifteen ſhillings per cwt. on the produce. The average of the expenſes in general, is thus eſtimated: that of workmanſhip, from twenty-five ſhillings to thirty ſhillings per acre; thoſe of picking, drying, charcoal, ſack, and duty, thirty ſhillings per hundred weight. The implements uſed throughout this plantation are, the plough, the kerf, the ſpade, iron-crow, and the hop-knife. The plough is the common one of the diſtrict; the kerf is a large hoe, with a plate about nine inches broad, and thirteen deep; the ſpade needs no particular deſcription; the crow is an iron bar, about four feet and a half long, generally ſquare at top, with a large point, in the octagon form, uſed to make the hole in the ground in pitching the poles: the hop-knife reſembles in make the ſickle, an old one being often converted to this purpoſe, by grinding off its ſaw-edge, and giving it a ſharp one in its ſtead; when made with new metal, it is ſomething ſmaller. The crib into which the Hops are picked, is an open frame made of wood, ſtanding about four feet high, four feet broad, and nine long. To the upper edge of this, is faſtened the crib-cloth, which is nine yards double, made with the ſame ſtuff with the bags, but coarſer and cheaper. The ſacks in which they are conveyed to the kiln, are the ſame The kiln will be afterwards deſcribed.

When the Hop-grounds are come to perfection, it is the general practice to exclude every other growth, and truſt to them alone, for a return of the great expenſe at which they are cultivated. Under this management, thoſe which have been uniformly attended to in their prime, and not weakened by over poling, will continue to produce plentifully from twenty to thirty years; and in ſome inſtances much longer, care being taken to replace the ſtocks that accidentally decay. On the other hand, freſh grounds are generally allowed to produce the fineſt Hops, and in greateſt abundance. A queſtion of ſome difficulty ariſes, at what time it will anſwer beſt to give up the old, and plant new grounds, and muſt at laſt be determined by the peculiar circumſtances of each plantation. But the error of continuing the old, as they often are, years after they have paſſed their prime, is ſelf-evident. The firſt expenſe of the new, may weigh with the occupier who holds his farm by the year, or for a ſhort term; but this is not the caſe with many of the principal planters. The ſame obſervation holds good with reſpect to the fruit plantations: theſe are often ſuffered to encumber the grounds, when there is ſcarce a hope left, that they may produce a crop anywiſe adequate to the expenſe of continuing them. This has given riſe to the following practice, and were it univerſally adopted, it would probably prove advantageous to the planters in general:—The young Hop-grounds are planted at proper diſtances with fruit-trees; theſe, from the frequent turning the ſoil and manure, are found to thrive better, and of courſe come to perfection ſooner, by this than any other management followed in this county. The conſtant attention to the fences neceſſary for the Hops, is of the greateſt ſervice to the trees, by protecting them from their greateſt bane, the teeth and rubbing of cattle of every deſcription. For years, there can be no doubt but the advantage to the trees more than compenſates any loſs the Hops ſuſtain, conſiderably. Later, it is true, the trees prove prejudicial, by the ſpreading of their roots, and by their branches intercepting the light and heat of the ſun; preventing alſo a free circulation of air. This, however, will not happen in any conſiderable degree, till they are fifteen or twenty years growth, the time when the Hops, under this management, may be expected to decline, and it will be neceſſary to apply the land to the purpoſes of which it is moſt capable as an orchard. In this method, there would always be a conſtant ſucceſſion of young vigorous plantations of both produce. Thoſe years in which the Hops fail, ſome return for the great labour and expenſe they are attended with, might be looked for from the fruit; a larger proportion of the land would ſhare in turn that extraordinary attention which is now confined to thoſe parts on which the Hops are grown. The crops of theſe would probably never riſe ſo high as they occaſionally do now; but it muſt be remembered, theſe are not thoſe which pay the planters beſt, as all the expenſes on the produce are the ſame, on a given weight, whatever price it bears. Moreover, the average produce of the plantations is now ſaid to exceed the conſumption: in the great years, ſuch as the preſent, ſo much ſo, as to reduce the price ſo low as ſcarcely to repay the planter; they are, nevertheleſs, increaſing: thoſe of this county, within the laſt three years, have added one hundred and fifty acres to their former growth, and this, notwithſtanding there appears but little proſpect of any new markets for them being found: a very ſerious conſideration, and highly deſerving the utmoſt attention of the planters. If this ſtatement proves true, the following practical inference may be with certainty drawn from it—that it will be adviſeable to forego ſome of thoſe points which are particularly calculated to aſſiſt the crops of Hops alone, in favour of a produce, the value and conſumption of which are conſtantly increaſing.

The circumſtance of thoſe Hops which are moſt in requeſt, ripening all at nearly one time, is a conſiderable inconvenience both to the owner, and holder of the eſtate: as they damage ſo ſoon, whether left on the wires when ripe, or gathered, if not dried immediately, it is neceſſary to have buildings, and a number of kilns in proportion to the ſize of the plantations, and more hands during the ſeaſon, than would be otherwiſe wanting. Could thoſe ſorts which ripen earlier or later, be improved, or any others introduced, that do ſo, it would be a conſiderable acquiſition. The parts neceſſary to perfect the ſeeds, are found on different plants; and as the greateſt ſtreſs is laid on theſe, it may be proper to notice, that the practice of removing the barren ſtocks, may be carried too far: it is an enquiry well worth attending to, whether this may not be the cauſe, in ſome inſtances, of the early decay on ſome grounds.

The following obſervations of Dr. Withering (Bot. arrang.) on the honey-dew, deſerve to be introduced to the notice of the planters.—"If the hop-yards were "covered with ſtones, the plants would be leſs liable "to ſuffer from the honey-dew, or from the otter "moth; for the honey-dew is the excrement of a "ſpecies of louſe (aphis); but theſe inſects ſeldom "increaſe ſo as to endanger the plant, unleſs it is in a "weak condition; and the larvæ of the otter moth at "the roots, firſt occaſion the plant to be ſickly. Now, "when the Hop grows wild in ſtony places, and fiſ"ſures of rocks, where the moth cannot penetrate to "depoſit its eggs, the Hop is never known to ſuffer "from the honey-dew."

Under this view of the diſeaſe, might not the practice of ſmoaking the fruit plantations, on the firſt alarm of a blight uſed in ſome fruit countries, be applied here to thoſe of Hops? The other injuries to which they are liable, ſtill remain without a remedy. A free circulation of the air through them, and complete draining of the land, are the only dependence. The uſe of the kerf is attended with one diſadvantage, and which, when employed almoſt ſolely to deſtroy weeds, is of conſequence: the perſon working with it, in ſome meaſure, defeats the intention of his labour, as he is continually treading down the ſoil again, he has thus looſened; and thus, in ſome degree, re-ſets the weed he had but a little before turned up; but the greater diſpatch made with it, more than can be done with the ſpade, will probably continue it that preference in which it is held.

The conſtruction of the kiln is as follows—The brick-work riſes perpendicular from the ground, to a height ſufficient to admit of about two or three feet below the bars, or grate, on which the fire is made, and about ſix or ſeven above it. The dimenſions at the baſe vary, according to the ſize required for the grate, and to give the brick-work ſufficient ſtrength to ſupport the ſuperſtructure. The height of this is determined by that of the building, when it is not erected new for the purpoſe. At the top of the perpendicular brick-work, iron bars are fixed at right angles; on them are laid tiles, or large flat ſtones, where they can be procured; theſe are covered on the upper ſide with a coat of mortar. The name given to this part of the kiln, the ſpark ſtone, ſufficiently denotes its uſe; it is placed in the centre, and of ſuch ſize, as leaves room around it to admit the heat above, at the ſame time that it prevents the ſparks from the fire being carried there. From this part, the brick-work becomes wider, overhanging gradually for about four feet, in a funnel ſhape, when it again riſes perpendicular about two feet: here joiſts are worked in, at ſmall diſtances from each other, and on theſe, laths are nailed, forming the floor. The brick-work is continued a foot higher, forming a breaſt-work round the top; on the floor, and round this breaſt-work, the hair-cloth is ſpread, in which the Hops are contained [t].

Hop-grounds in Eſſex.

The culture of Hops at Hedingham is perhaps as good as in any part of England; the quality of thoſe at Farnham are ſuperior. There are fifty-five or fifty-ſix acres here contiguous, remarkable for yielding an almoſt certain crop. The ſoil is a moory marſh, improved into a rich loam on the ſurface. They are perſuaded here that Hops ſucceed better in very large plantations than in ſmall ones; and obſerve that the outſides of the contiguous acres do not anſwer equally with the more central diviſions. If a man therefore increaſes his Hop-ground, it ſhould not be in diſtinct plantations, but united to what he had before [u]. In Eſſex they are too apt to uſe long poles, even ſuch as are two rods in length, and thirteen inches round at bottom, coſting 3 l. a hundred [x].

In making a plantation they fallow the land a year, ploughing three or four times. They plant in november, three ſets to a hill, and a thouſand hills to an acre. They put on no manure, if the land be good. They dig the ground over as ſoon as planted, on account of its being trodden.

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[t] Pomeroy, in ſurvey of Worceſterſhire, p. 46 to 57.

[u] Young's Ann. 18. 436.

[x] Ibid. 2. 34.

In the ſecond year nothing is done but keeping the ground clean, by ſkimming and harrowing; after michaelmas they put on ſixty loads of compoſt to an acre. Glovers and taylors ſhreds are a good dreſſing.

In the third year in february they cut down to the crown of the plant or the black rind. At the end of march they pole the ground, three poles to a hill. The beſt poles are cheſtnut, aſh, oak, ſallow, maple, all fourteen years growth, if from a wood, or eleven from a plantation. After poling, they dig round the plants.

In drying, much attention is neceſſary, to vary it according to ripeneſs and dryneſs.

The beſt ſoil is a ſtrong loam; clay and a light black mould are both bad.

The flea attacks the Hop as ſoon as it is out of the ground. Chalky land is much ſubject to it, and warm dry weather occaſions it. The beſt remedy is to dung highly, in order that the plants may grow out of danger, which is at two feet high. They apply nothing to ſtop it, but a heavy ſhower of rain does it.

In june and july the green-fly blows them, when lice come, which do not appear to eat, but poiſon the leaf; they are worſt in thick, cloudy, hot, moiſt weather; when honey-dews come alſo upon them. (The flies and lice are all Aphides, ſome of which have wings, others not; and the honey-dew is their excrement.)

Hops when ripening get mouldy at the tip, where the Hop joins the ſtalk. This is a ſort of rottenneſs, and moiſt weather is bad for it: a cloſe low plantation, too much ſheltered, or near trees, will be mouldy, when an open free expoſure eſcapes [y].

Hop-grounds in Suffolk.

The ſoil they plant on about Stowmarket, is a black looſe moor, on a gravelly bottom, very wet and boggy, lying on a dead level with the little river that runs by the town; the more boggy and looſe it is the better the Hops thrive, eſpecially if the gravel be within three feet; the neighbouring grounds riſe in ſuch a manner as to ſhelter them very well. In preparing for Hops they form beds ſixteen feet wide, by digging trenches about three feet wide, and two feet or two feet and a half deep, the earth that comes out being ſpread upon the beds, and the whole dug and levelled. Upon this in march they form holes ſix feet aſunder every way, twelve inches diameter, and a ſpit deep, conſequently there are three rows on each bed. Into each hole they put half a peck of very rotten dung, or rich compoſt, ſcatter earth upon it, and plant ſeven ſets in each, drawing earth enough to them afterwards to form ſomething of a hillock. Some in the firſt years ſow Kidney Beans, or common Beans, or plant Cabbages; but others do not reckon this a good way. In two or three weeks, according to the ſeaſon, they will be fit to pole with old ſhort poles, to which they tie all the ſhoots or vines, and then keep the land clean by hoeing and raking; and at midſummer they hill them. The produce the firſt year is from three to one hundred weight of Hops on an acre.

Manure is not always given regularly, but amounts on an average to ten loads a year. They keep it till it would run through a ſieve, which they prefer to a more putrid ſtate.

Three poles are put to each hill. They are generally of aſh, and the length they prefer is twenty-four feet. When a Hop riſes much above a pole, they ſet another to take the ſhoot, to prevent its falling, impeding the circulation of air, and entangling with the poles of other hills.

A Hop garden will laſt almoſt for ever, by renewing the hills that fail, to the amount of about a ſcore annually; but it is reckoned better to grub up and new plant in twenty or twenty-five years.

The only diſtempers to which they are ſubject are the fly and honey-dew; they know the blaſt, and the red worm; but they are rare; the latter chiefly on dry land. They think lightning favourable, by killing flies and lice [z].

General obſervations.

Hops are occaſionally very profitable, but they are very uncertain in their produce, and are ſure to be very expenſive. To leſſen the expenſe of poling, and the trouble of picking, it has been ſuggeſted that planting Hops in form of an eſpalier might probably anſwer; for it is obſerved that when a pole falls, and another is obliged to be fixed in a lateral poſition, the Hops always bear more by being thus trained horizontally; and Hops in an eſpalier might be picked as forward as the planter choſe without cutting the vines [a].

If Hops alſo were only planted in ſuch ſoils and ſituations as are well adapted to them, there would be a much greater probability of an efficient crop; and thus though the expenſe would not be diminiſhed, the average profit would be increaſed.

The quantity of Hops produced on different ſoils in different years, varies from almoſt nothing, or perhaps two hundred weight to twenty and even twenty-four hundred weight on an acre: but the average produce on middling ſoils may be eſtimated at ſix, and on ſuch as are better, at ſeven or eight hundred weight; ſome ſpeak of nine, and a good ſoil, with a run of favourable years, may yield ſuch a produce, or even more, but it ought not to be looked upon as general. The expenſe on an acre of Hops may be eſtimated at about 30l., including rent, taxes, &c. Taking then 7 C. to be the average produce, the planters muſt evidently be loſers when they ſell for four guineas. Or taking 30l. as a ſtandard, the price of Hops ſhould vary according to the following table.

Quantity.	Price.		
2 C. on an acre,	15 l. the hundred weight.		
3	10		
4	7	10 s.	
5	6		
6	5		
7	4	5	8½
8	3	15	
9	3	6	8
10	3		
11	2	14	6½
12	2	10	
13	2	6	1¾
14	2	2	10¼
15	2		
16	1	17	6
17	1	15	3½
18	1	13	4
19	1	11	7
20	1	10	0

Neglecting ſmall fractions in two or three inſtances. Whatever the grower gains more than this is profit. The average price of Hops has been eſtimated in different places, and by ſeveral perſons in the ſame places at three guineas, at 4l. at 4l. 10s., at 5l. and at 6l. 2s. or 3s. The average of the prices given in the table above is 3l. 17s. 11¼d. nearly.

Savings might certainly be made in poles; in cultivating only on proper ſoils, as hinted above, where a leſs quantity of manure is wanted than on ſuch as are congenial to this crop; or in the vicinity of great towns where manure may be had in great plenty; by an attention to the quality, operation and effect of different manures, with the beſt time of laying them on; by uniting the buſineſs of malſter to that of hop-grower, by which means the malt-office may ſave the expenſe of building an oaſt, or kiln for drying them; and by other attentions of which the hop-planter ought to be the beſt judge. The tythe of Hops ſhould be regulated; where the expenſe to the cultivator is ſo prodigious, nothing can be more reaſonable.

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[y] Young's Ann. 18. 451.

[z] Ibid. 2. 162.

[a] Ibid. 2. 34. & 77.

In Suſſex, brimſtone is uſed in drying Hops: it is thought there to be a well-grounded opinion, that this is a very proper fuel, ſince the inflammable principle with which it abounds, by ſuddenly paſſing through the Hops, quickly diſſipates the moiſture, by which means the Hops are brought off with a better colour, and with much leſs fuel than in the ordinary way[b].

I do not know whether this is practiſed in the other countries where Hops are grown, but I rather ſuſpect that brimſtone is uſed more to gratify the eye than for any good purpoſe. Almoſt every thing, in manufactures as in common life, is ſacrificed to appearance.

Though in very favourable ſoils, Hops may be continued on the ſame ſpot at pleaſure, yet it is generally adviſeable to break up the hop-yard entirely in twenty or thirty years; and then the ground is in high order for almoſt any crops for ſome years after, particularly for Potatoes, of which an immenſe burden may be produced from ſuch ground.]

HURA. (*The Mexican vernacular name.*)

Lin. gen. n. 1087. *Reich.* 1189. *Schreb.* 1475. *Juſſ.* 391.

Claſſ. 21. 8. Monoecia Monadelphia.

Nat. order of *Tricoccæ.—Euphorbiæ*, Juſſ.

GENERIC CHARACTER.

* *Male flowers.*

Cal. *Ament* from the divarication of the branches, oblong, drooping, covered with ſeſſile, ſpreading florets, *ſcales* oblong.

Perianth within each ſcale of the ament, cylindric, two-leaved, truncate, very ſhort.

Cor. none.

Stam. *Filament* cylindric, a little longer than the calyx, peltate at the tip, rigid, below the tip twice or thrice verticilled with tubercles. *Anthers* two, immerſed in each tubercle, oval, bifid.

* *Female flower in the ſame plant.*

Cal. *Perianth* one-leafed, cylindric, furrowed, truncate, quite entire, cloſely ſurrounding the germ.

Cor. none.

Pist. *Germ* roundiſh, within the calyx. *Style* cylindric, long. *Stigma* large, funnel-ſhaped, plano-convex, coloured, twelve-cleft, blunt, equal.

Per. woody, orbiculate, or globular-flatted, toroſe, with twelve furrows, twelve-celled: cells diſſilient, creſcent-ſhaped, with an elaſtic dagger point at the end.

Seeds ſolitary, compreſſed, ſuborbiculate, large.

ESSENTIAL CHARACTER.

Male. *Ament* imbricated. *Perianth* truncated. *Cor.* none. *Filam.* cylindrical, peltate at the tip, ſurrounded by very many anthers in pairs.

Fem. *Cal.* and *Cor.* none. *Style* funnel-form. *Stigma* twelve-cleft. *Capſ.* twelve-celled. *Seed* one.

SPECIES.

1. Hura crepitans. *Sand-box Tree.*

Lin. ſpec. 1431. *ſyſt.* 867. *Reich.* 4. 198. *hort. cliff.* 486. *t.* 34. *Comm. hort.* 2. 131. *t.* 66. *Ehret. pict. t.* 12. *Trew Ehret.* 34. 35. *f.* 1.

Hippomane 2. *Brown. jam.* 351.

Baruce ex Hura Celſa arbore. *Cluſ. exot.* 47. *Raii hiſt.* 1826. *n.* 24.—e pluribus nucibus arboris Huræ. *Bauh. hiſt.* 1. 333. *Sloan. jam.* 2. 186.

Quauhtlatlatzin ſeu Arbor crepitans. *Hern. mex.* 88.

DESCRIPTION, &c.

This grows naturally in the Spaniſh Weſt-Indies, from whence it has been introduced into the Britiſh colonies of America, where ſome of the plants are preſerved by way of curioſity. It riſes with a ſoft woody ſtem to the height of twenty-four feet, dividing into many branches, which abound with a milky juice, and have ſcars on their bark, where the leaves have fallen off. The branches are garniſhed with heart-ſhaped leaves; thoſe which are biggeſt are eleven inches long, and nine inches broad in the middle, indented on their edges, having a prominent midrib, with ſeveral tranſverſe veins from that to the ſides, which are alternate; theſe ſtand upon long ſlender foot-ſtalks. The male flowers come out from between the leaves, upon peduncles which are three inches long; they are formed into a cloſe ſpike, or katkin, forming a column, lying over each other like the ſcales of fiſh.

[It is ſimple, and either terminating or axillary. The female flowers are ſolitary, and very near the ament. The leaves are alternate, and accompanied by caducous ſtipules; the petiole is glandular above; the younger leaves are involuted[a].

Browne makes this tree of the ſame genus with the Mangeneel (Manchineel or Hippomane). The branches are divided alike in both; and the leaves, which ſtand in the ſame manner, reflecting a little backwards from the direction of the foot-ſtalks, are diſpoſed pretty thick at the extremities of the branches, and have one gland only on each foot-ſtalk; whereas in the Manchineel there are two. This is full of a thick tranſparent juice, that of milk, both acrid; and the flowers, notwithſtanding they differ in ſome degree, agree in the formation of the ſtyle and ſtigma, as well as in the diſpoſition of the anthers; though the number of theſe be not the ſame in both. In this the fruit is regularly divided into cells: in that the nut or ſhell is harder, and the diviſions not ſo regular; yet they are longitudinal, adjoining, in a number proportioned to the diviſions of the ſtigma, and generally both regular and many in the younger germs, but ſome abortive as the fruit increaſes.

The fruit is very curious in its ſtructure; and the tree, when it grows well, is very ſpreading and ſhady[b]. It riſes to the height of thirty-five or forty feet, and ſometimes caſts a ſhade of ſixty feet diameter. But from the quickneſs of its vegetation, its parts are of ſo looſe a texture, that a loud clap of thunder, or a ſudden guſt of wind, frequently cauſes the largeſt boughs to ſnap aſunder. Nor is its trunk of any uſe, except for fire-wood[c].

Linneus ſays that the wood is fit for joiſts and ſpars: and that the juice, when it gets into the eyes, brings on blindneſs after the eighth day[d].

The ſeeds, according to Hernandez, when roaſted, purge both upwards and downwards. Browne taſted one of them, and it appeared at firſt to be both mild and pleaſant; but it ſoon began to warm and ſcald both his palate and throat; which induced him to look upon it as an improper purgative.

This tree was introduced here before 1733, by William Houſtoun, M.D.[e]]

PROPAGATION AND CULTURE.

It is propagated by ſeeds, which ſhould be ſown early in the ſpring, in pots filled with light rich earth, and plunged into a hot-bed of tanner's bark. If the ſeeds are freſh, the plants will appear in about five or ſix weeks after the ſeeds are ſown. As the plants will advance very faſt, where due care is taken of them, they ſhould have a large ſhare of freſh air admitted to them in warm weather, otherwiſe they will draw up too weak. When the plants are about two inches high, they ſhould be tranſplanted each into a ſeparate ſmall pot filled with light rich earth, and plunged again into the hot-bed of tanner's bark, being careful to ſhade them from the heat of the ſun, until they have taken new root; after which time they muſt have free air admitted to them, by raiſing the glaſſes in proportion to the warmth of the ſeaſon, and ſhould be frequently, but gently, watered. When the plants have filled theſe ſmall pots with their roots, they muſt be ſhaken out of them, and their roots trimmed, and then placed in larger pots, which ſhould be filled with the like rich earth, and plunged again into the hot-bed, where they ſhould remain till michaelmas, provided the plants have room, without touching the glaſſes, at which time they muſt be removed into the bark-ſtove, and plunged in the warmeſt part thereof: during the winter ſeaſon they muſt be ſparingly watered, for as the plants have ſucculent ſtalks, much moiſture will rot them; they muſt alſo be kept very warm, otherwiſe they will not live in this country. In ſummer they muſt have a large ſhare of freſh air in warm weather, but they muſt not be removed into the open air, for they are too tender to live abroad in the warmeſt part of the year in this country.

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[b] Young's Ann. 22. 299.

[a] Juſſieu gen. [b] Browne. [c] Long, jam. 3. 844.
[d] Diſſ. alt. ſurin. [e] Hort. kew. from Mill. dict. vol. 2. 1739.

This plant is now pretty common in the Engliſh gardens, where there are collections of tender plants preſerved, ſome of which are grown to the height of twelve or fourteen feet, and many of them have produced flowers, but there has not been any of their fruit produced as yet in England.

As theſe plants have ample leaves, which are of a beautiful green colour, they afford an agreeable variety among other tender exotic plants in the ſtove; for where they are kept warm, and duly refreſhed with water, they retain their leaves all the year in verdure.

[It is much cultivated in Jamaica, for its beauty, and the fine ſhade it yields. It loves a deep rich ſoil, and thrives beſt near water[f].

Hyacintho Affinis. See *Agapanthus* & *Hæmanthus*.]

HYACINTHUS (*of Pliny.* Ὑακινθος *of Theophraſtus and Dioſcorides. Fabled to have ſprung from the blood of Hyacinthus, when he was accidentally ſlain by Apollo with a quoit; or from that of Ajax. Derived by ſome from* ια *violet and* Cynthius *one of the names of Apollo: if ſo, it ſhould be written* Hiacinthus.)

Lin. gen. n. 427. *Reich.* 461. *Schreb.* 577. *Tourn.* 180. *Gærtn.* 12. *Juſſ.* 52.

Muſcari. *Tournef.* 180.

Claſſ. 6. 1. Hexandria Monogynia.

Nat. order of *Lilia* Roy. or *Liliaceæ.—Coronariæ*, Lin. —*Aſphodeli*, Juſſ.

GENERIC CHARACTER.

Cal. none.

Cor. monopetalous, campanulate: *border* ſix-cleft, reflex.—*Nectary*, three honied pores, at the tip of the germ.

Stam. *Filaments* ſix, awl-ſhaped, ſhorter. *Anthers* converging.

Pist. *Germ* ſuperior, round-three-cornered, three-furrowed. *Style* ſimple, ſhorter than the corolla. *Stigma* obtuſe.

Per. *Capſule* roundiſh, three-ſided, three-celled, three-valved.

Seeds in pairs (generally), roundiſh.

Obs. *This natural genus has been divided into others not natural, as*

1. Hyacinthus Tournef. *when the tube of the corolla is oblong.*
2. Muſcari T. *when it is almoſt globular. Some ſpecies have the corolla ſix-parted; in one it is funnel-ſhaped.*

It has the germination of Aſphodelus. *Juſſ.*

ESSENTIAL CHARACTER.

Cor. bell-ſhaped, with three honied pores by the germ.

SPECIES.

1. Hyacinthus non ſcriptus. *Common Hyacinth* or *Harebells.*

Lin. ſpec. 453. *Reich.* 2. 76. *hort. cliff.* 125. *Hudſ. angl.* 141. *Wither. arr. ed.* 2. 356. *ed.* 3. 343. *Lightf. ſcot.* 182. *Curt. lond.* 2. 18. 139. *Relh. cant. n.* 263. *Hall. helv. n.* 1248. *Neck. gallob.* 167. *Blackw. t.* 61. *Dod. cer.* 172.

H. oblongo flore cæruleus major. *Bauh. pin.* 43.

H. anglicus. *Ger.* 99. 1. *emac.* 111. 1, 2. *Raii hiſt.* 1159. *ſyn.* 373.—ſ. belgicus. *Bauh. hiſt.* 2. 586. —belgicus vel hiſpanicus. *Park. parad.* 125. 5.

Corollas tubular, bell-ſhaped, ſix-parted, ſegments rolled back, bractes in pairs.

2. Hyacinthus cernuus. *Bending Hyacinth.*

Lin. ſpec. 453. *ſyſt.* 335. *Reich.* 2. 77.

H. hiſpanicus. *Cluſ. hiſt.* 1. 177. *Raii hiſt.* 1160.

H. oblongo flore ſuaviter rubente, minor. *Bauh. pin.* 44?

Corollas bell-ſhaped (ſwelling at the baſe) ſix-parted, raceme drooping.

3. Hyacinthus ſerotinus. *Late-flowering Hyacinth.*

Lin. ſpec. 453. *Reich.* 2. 77. *Gærtn. fruct.* 1. 38. *Cavan. hiſp.* 18. *n.* 28. *t.* 30.

H. obſoleto flore. *Bauh. pin.* 44.—hiſpanicus major. *Ger. emac.* 115. *f.* 14.

H. obſol. coloris, hiſpanicus ſerotinus. *Cluſ. hiſt.* 1. 177, 178.—hiſp. obſoletus. *Park. parad.* 122. *t.* 125. *f.* 3. *Raii hiſt.* 1160.

H. ſerot. maximus. *Beſl. eyſt. vern.* 2. *t.* 16. *f.* 1.

Outer petals almoſt diſtinct, inner coadunate.

[4. Hyacinthus viridis.

Lin. ſpec. 454. *ſyſt.* 335. *Reich.* 2. 77. *Murr. comm. gott.* 1781. *p.* 44. *t.* 5.

The outermoſt ſegments of the corollas awl-ſhaped and very long.]

5. Hyacinthus amethyſtinus. *Amethyſt-coloured Hyacinth.*

Lin. ſpec. 454. *Reich.* 2. 78. *hort. upſ.* 85. *Pallas it.* 3. 589.

H. oblongo cæruleo flore, minor. *Bauh. pin.* 44. *Rudb. elyſ.* 2. 27. *f.* 8.

H. minor hiſpanicus. *Ger. emac.* 115. *f.* 15.—anguſtifolius. *Bauh. hiſt.* 2. 587. *Cluſ. cur. app. alt. Raii hiſt.* 1160.

H. hiſp. minor, Orientalis facie, flore cæruleo albo & rubente. *Park. parad.* 120. *t.* 125. *f.* 1.

Corollas bell-ſhaped, half-ſix-cleft, cylindrical at the baſe.

[6. Hyacinthus revolutus. *Wave-leaved Hyacinth.*

Lin. ſyſt. 335. *ſuppl.* 204. *Thunb. prodr. cap.* 64.

Corollas bell-ſhaped, ſix-parted, revolute, leaves oblong, waved.]

7. Hyacinthus orientalis. *Garden Hyacinth.*

Lin. ſpec. 454. *Reich.* 2. 78. *hort. upſ.* 85. *cliff.* 125. *Gron. orient. n.* 115. *Mill. fig. t.* 148. (fl. pleniſſimo).

H. orientalis 1—15 & plenus 1—3. *Bauh. pin.* 44.

H. orient. major & major. *Dod. pempt* 216.

H. orient. quibuſdam. Conſtantinopolitanus. *Bauh. hiſt.* 2. 575.—& brumalis ſ. præcox. *Park. par. Raii hiſt.* 1159. *n.* 18, 19.

H. orient. cæruleus & polyanthus. *Ger.* 100. *f.* 7, 8. *emac.* 112. *f.* 4, 5.—item 113. *f.* 6, 7, 8, 9. & 114. *f.* 10, 11.

H. orient. *Park. parad.* 118. *n.* 1—8. *t.* 121.—græcus. *Lob. ic.* 104.

Corollas funnel-form, half-ſix-cleft, ſwelling at the baſe, with two ſmall bractes under each pedicel.

[8. Hyacinthus corymboſus.

Lin. ſyſt. 335. *Reich.* 2. 78. *mant.* 223. *Thunb. prodr. cap.* 64.

Corollas funnel-form, raceme erect, ſcape ſhorter than the leaves.

9. Hyacinthus romanus. *Roman Grape Hyacinth.*

Lin. ſyſt. 335. *Reich.* 2. 78. *mant.* 224.

H. comoſus albus belgicus. *Bauh. pin.* 42.

H. com. alb. cum cæruleis ſtaminibus. *Bauh. hiſt.* 2. 584.

H. com. albus. *Ger.* 103. 2. *emac.* 117. 2. *Park. parad.* 115. *n.* 1. *t.* 117. *f.* 1. *Raii hiſt.* 1163.

Corollas bell-ſhaped, half-ſix-cleft, in racemes, ſtamens membranaceous.]

10. Hyacinthus muſcari. *Muſk Hyacinth.*

Lin. ſpec. 454. *Reich.* 2. 79. *hort. cliff.* 126. *upſ.* 85.

H. racemoſus moſchatus. *Bauh. pin.* 43. *Raii hiſt.* 1162.

H. botryoides major moſch. ſ. Muſcari flore flavo & cineritio. *Park. parad.* 112. *n.* 1, 2. *t.* 113. *f.* 3, 4.

Muſcari racemoſus. *Mill. dict. n.* 3.

M. flavum & Cluſii. *Ger.* 105. *f.* 1, 2. *emac.* 120. *f.* 1, 2.

Corollas ovate, all unequal, with one bracte under the pedicel, and another above it.

[11. Hyacinthus convallarioïdes.

Lin. ſyſt. 335. *ſuppl.* 204. *Thunb. prodr. cap.* 64.

Corollas bell-ſhaped, ovate, pendulous, ſcape filiform.]

12. Hyacinthus monſtroſus. *Feathered Hyacinth.*

Lin. ſpec. 454. *Reich.* 2. 79. *vir. cliff.* 28.

H. pennatus ſ. comoſus ramoſus elegantior. *Park. parad.* 116. *n.* 5. *t.* 117. *f.* 5. *Raii hiſt.* 1163. 34. *Ger. emac.* 117. *f.* 5.

Muſcari monſtroſus. *Mill. dict. n.* 4.

β. H. floribus paniculatis monſtroſis. *Linn. hort. cliff.* 126.

H. panicula cærulea. *Bauh. pin.* 42.

H. ſanneſius pan. comoſa. *Col. ecphr.* 2. 10. *t.* 12.

H. com. ram. purpureus. *Park. parad.* 116. *n.* 4. *t.* 117. *f.* 4. *Ger. emac.* 118. *n.* 4. *Raii hiſt.* 1163. 35.

Corollas ſubovate.

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[f] Long.

13. Hyacinthus comoſus. *Purple Grape Hyacinth.*
Lin. ſpec. 455. *ſyſt.* 336. *Reich.* 2. 79. *mant.* 366. *Hall. helv. n.* 1247. *Scop. carn. n.* 423. *Pollich pal. n.* 342. *Jacqu. auſtr.* 2. *t.* 126. *Krock. ſileſ. n.* 537. *Villars dauph.* 2. 263. *Curt. magaz.* 133.

H. com. major purpureus. *Bauh. pin.* 42.

Hyacinthus. *Camer. epit.* 798.—comoſus. *Ger.* 103. *f.* 1. *emac.* 117. *f.* 1. *Raii hiſt.* 1162.—major purpureus. *Bauh. pin.* 42. *Park. parad.* 116. *n.* 3. *t.* 117. *f.* 3.—com. ſpurius tertius. *Dod. pempt.* 218.—maximus botryoides cæruleus. *Bauh. hiſt.* 2. 371.

Muſcari comoſus. *Mill. dict. n.* 2.

Corollas angular-cylindrical, the upper ones barren on longer pedicels, bractes ſmall, acuminate.

14. Hyacinthus botryoides. *Blue Grape Hyacinth.*
Lin. ſpec. 455. *ſyſt.* 336. *Reich.* 2. 80. *mant.* 366. *hort. cliff.* 126. *upſ.* 85. *Hall. helv. n.* 1246. *Scop. carn. n.* 424. *Curt. magaz.* 157.

H. racemoſus cæruleus major. *Bauh. pin.* 42.

H. botryoides vernus minor latifolius cæruleus inodorus. *Bauh. hiſt.* 2. 572. *Raii hiſt.* 1161.—purpureus 3. *Cluſ. hiſt.* 1. 181.—cæruleus major. *Ger.* 103. *f.* 4. *emac.* 119. *f.* 8.—cær. amoenus. *Lob. ic.* 108. *Park. parad.* 114. *t.* 113. *f.* 5.

Muſcari botryoides. *Mill. dict. n.* 1.

Corollas globular, uniform, leaves channelled-cylindrical, ſtrict.

15. Hyacinthus racemoſus. *Cluſtered Grape Hyacinth.*
Lin. ſpec. 455. *ſyſt.* 336. *Reich.* 2. 80. *mant.* 367. *Retz. obſ.* 3. 17. *Hall. helv. n.* 1245. *Jacqu. auſtr.* 2. *t.* 187. *Krock. ſileſ. n.* 538. *Villars dauph.* 2. 264. *Curt. magaz.* 122. *Dod. pempt.* 217.—cæruleus minor juncifolius. *Bauh. pin.* 43.

H. botryoides 1. *Cluſ. hiſt.* 1. 181.—cæruleus. *Ger.* 103. *f.* 3. *emac.* 118. 6.—minor cærul. obſcurus. *Park. parad.* 114. *Raii hiſt.* 1161.—vernus minor cæruleus anguſtioribus foliis odoratus. *Bauh. hiſt.* 2. 571.

H. comoſus minor, Bulbine Plinii. *Dalech.* 1511.

M. arvenſe juncifolium cæruleum minus. *Tourn. inſt.* 348. *Garid. aix.* 319. *Ger. prov.* 156.

Corollas ovate, the upper ones ſeſſile, bractes ſolitary, very ſhort, leaves looſe.

[16. Hyacinthus brevifolius.
Thunb. prodr. cap. 63.

Corollas ſix-parted, raceme drooping, leaves ſhorter than the ſcape.

17. Hyacinthus flexuoſus.
Thunb. prodr. cap. 64.

Corollas bell-ſhaped, raceme upright, leaves linear, longer than the ſcape.

DESCRIPTIONS.

1. Root a roundiſh bulb, the ſize of a nutmeg. Scape from ſix inches to a foot in height, upright, round, ſmooth and ſolid, bowed down when it begins to flower. Leaves four, ſix, or ſometimes more, only half the length of the ſcape, and about half an inch broad, keeled, hollow, ſmooth, ſhining, graſs green, flaccid, bending downwards, ending in an acute point. Flowers in a long raceme or ſpike, from eight to twelve, often more, all pointing one way, pedicelled, pendulous, ſweet-ſmelling, of a blue or violet colour, varying to white and fleſh-coloured, ſix-parted to the very baſe. Bractes two to each flower, lanceolate or awl-ſhaped, and nearly upright. This part was little obſerved before the time of Linneus; Ray, however, remarks it here, and calls it *ligula:* he ſays there are two to each flower, of a violet colour, longer than the pedicel, one larger than the other. Filaments adhering to the ſegments of the corolla, every other of them almoſt to the anthers; the three longeſt are equal to the tube of the corolla. Anthers upright, incumbent, ſomewhat arrow-ſhaped. Germ conical, whitiſh. Style at top of a blueiſh colour. Stigma villoſe, moiſtened with a drop of liquor, according to Linneus, and having club-ſhaped glands, according to De Necker. The honied pores, which Linneus gives as the eſſential character of the genus, are not diſcoverable in this ſpecies. The valves of the capſule are ovate, and terminate in a ſhort point. Seeds numerous, of a fine blue colour, with a poliſhed ſurface [a].

The abſence of the nectariferous pores, the very deep diviſions of the corolla, almoſt forming ſix diſtinct petals, and the ſtructure of the other parts of the fructification induce Dr. Withering to wiſh that Linneus had arranged this plant under the genus Scilla. The corolla ſhrivelling and not falling off, and the ends of the petals being rolled back, ſeem to conſtitute the only obſervable differences. Dr. Stokes alſo thinks it has more of the habit and even ſtructure of Scilla than of Hyacinthus. The drooping of the flowers diſtinguiſhes it from Scilla campanulata, a plant often found in our gardens, and flowering at the ſame time [b].

Native of France, Flanders, Switzerland, Italy, Spain, Perſia. It adorns our woods, coppices, and hedge-rows with its flowers in the ſpring months. Mr. Curtis remarks that the ſeeds are not ripened till the end of the year; and, that on being ſown, they did not vegetate till the ſecond year.

The fanciful term of non ſcriptus was applied to this plant by Dodonæus, becauſe it has not the Αι, Αι on the petals, and therefore is not the Hyacinthus poeticus. Our old botaniſts name it Anglicus and Engliſh Hyacinth from its extreme commonneſs in many parts of our Iſland. Gerarde calls it blew Harebels or Engliſh Jacint; and it is the azur'd Harebell of our Poet, in his Cymbeline [c]. In French it is *Jacinte des bois;* and in German, *Niederlandiſche,* or *Engliſche Hyacinthe.*

Dr. Withering ſays that the freſh roots are poiſonous. According to Gerarde, they are "full of a ſlimy "glewiſh juice, which will ſerve to ſet feathers upon "arrowes in ſteed of glew, or to paſte bookes with: "whereof is made the beſt ſtarche, next unto that of "Wake robin rootes."

Engliſh Hyacinth with blue flowers is very abundant in many places. Carnation and white are not ſo common. Gerarde found them by Colcheſter in Eſſex, by Southfleet near Graveſend, and near Canterbury in Kent, about Bath in Somerſetſhire, and Warrington in Lancaſhire: With white flowers it was alſo remarked by Ray in Scadbury park, Kent; and by Dr. Stokes near Worceſter. In the incloſures about Streatham and other places in Surry.

2. This agrees with the firſt ſort in habit and appearance, but it is ſmaller, and differs in having the leaves more linear or leſs lanceolate, and more erect; the raceme is more nodding; the corollas fleſh-coloured, not blue, rounder, with the ſides of the petals leſs ſpreading, flat at the baſe, not marked with a raiſed line on the back, and leſs rolled back (though ſtill reflex) than in that. The piſtil is ſhorter than the ſtamens: and the two bractes are of a deeper carnation [d]. The corolla ſwells out at the baſe in this, which it does not by any means in the preceding [e].

Native of Spain. Cultivated in 1759, by Mr. Miller [f]; who looks upon it as a variety of the firſt, differing principally in having the flowers of a bluſh peach colour. Ray alſo obſerves that it is not very unlike the preceding, and that Caſpar Bauhin did not ſeparate them. Parkinſon makes them one, under the title of Engliſh Hares-bels, or Spaniſh Iacinth.

Mr. Miller's third ſort, which he abſurdly calls *H. utrinque floribus,* ſeems to be a variety of this. He ſays] it has blue flowers, diſpoſed on every ſide the ſtalk, which riſes about nine inches high, that the thyrſe of flowers is large when the roots are ſtrong, that it is a native of Spain and Italy, and that it was formerly preſerved in gardens, but having been neglected for the fine varieties of the Eaſtern Hyacinths, it is now ſeldom ſeen but in old gardens. [This is the caſe with many of our old favourites, which are caſt out daily to make room for new comers, inſomuch that many of the plants which were moſt known in the time of Caſpar Bauhin are now ſtrangers to us.

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[a] Curt. lond. Ray hiſt. With. Stokes, Relh.

[b] Curtis & Stokes.

[c] Act 4. ſcene 5.

[d] Linn. ſpec.

[e] Linn. ſyſt.

[f] Hort. kew.

3. Bulb ovate-conical, ſolid, covered with brown ſkins. Scape ſingle, a foot high, ſmooth. Leaves channelled, ſheathing the ſcape at the baſe, ſhorter than the ſcape, ſharp at the end. Flowers in a raceme, all pointing the ſame way, drooping a little; each on a ſhort peduncle, with an awl-ſhaped bracte at the baſe. Corolla of a dull greeniſh red colour[g].] When the flowers firſt appear, of a light blue, but fading to a worn out purple colour, according to Miller. [In Gerarde they are deſcribed as of a very duſky colour, as it were mixt with purple yellow and green, and as having no ſmell. In Parkinſon, who calls it Spaniſh dunne-coloured Jacinth, as of a purpliſh yellow colour, with ſome white and green as it were mixed among it. Ray obſerves, that plants which he raiſed from ſeed of the ſame root, varied in the colour of their flowers, ſome being duſky, and others almoſt green.

They are tubular at the baſe; the three outer ſegments ovate-linear, ſeparated almoſt to the bottom, and recurved, the three inner united into a tube, ſpreading a little at top. Filaments inſerted into the baſe of the corolla[h]. Capſule globular-three-cornered, produced at the baſe into a ſhort, conical peduncle, of a leathery-cruſtaceous ſubſtance, opening only at top. Seeds about ten in each cell, ſuborbiculate, bracted, flat on both ſides, ſurrounded with a retuſe rim, very dark coloured, and ſhining a little[i].

Native of Spain near Aranjuez, and of Barbary, about Fez and Morocco. Parkinſon ſays the African plant is in all reſpects greater than the Spaniſh.

With us it flowers in june, and from its flowering later than the other Hyacinths had the name of *ſerotinus* given it by Cluſius. Mr. Miller ſays it flowers early in the ſpring, which muſt be a miſtake with reſpect to England; though in Spain Cavanilles affirms that he has found it in flower on the 20th of april.

Mr. Miller cultivated it in 1759[k].

4. This is of the ſame ſtature with the next ſpecies, but the corolla is green, with the three outer ſegments, which are placed alternately with the three inner, double their length, and ending in a very narrow point. Native of the Cape[l].]

5. This has a ſmaller flower; the petals are cut half their length, and are reflex at the brim; the lower part is cylindrical, a little ſwelling at the baſe, and of a deeper blue.

[The root, according to Cluſius, is the ſize of a ſmall olive, covered with a brown ſkin. Leaves five or ſix, longer and narrower than in the firſt ſort, ſtriated and keeled, lying moſtly on the ground. Scape ſlender, a long ſpan in height, round, ſmooth, glaucous, having ſix or ſeven flowers at top (Ray ſays, ſometimes twelve or more), nodding on pedicels half an inch in length; they are bright blue, ſmaller than thoſe of the firſt ſort, without any ſcent. Moſt of them, ſays Parkinſon, have white ſtripes and edges; and they vary to pure white, and a fine delayed (pale) red colour, with deeper-coloured veins running along the three outer ſegments.] Mr. Miller ſays, it was formerly called Coventry blue Hyacinth by the gardeners.

Native of Spain, [Italy and Ruſſia.—Flowering in april and may. Cultivated by Mr. Miller in 1759[m].

6. This is one of the ſpecies found at the Cape of Good Hope by Thunberg, with ſeveral others, of which we have no deſcriptions. See n. 11, 16, 17, 18.

7. The Garden or Oriental Hyacinth has a large coated bulb, viſcid, and of a ſweetiſh taſte, from the bottom of which ſpring the roots, which are long, round fibres, of a middling thickneſs; from the middle of it a ſingle naked ſtem or ſcape; and from the top ſix, ſeven or more leaves. The leaves are broadiſh, keeled, pale green at bottom, but of a darker green towards the end. The ſcape is a long ſpan in height, ſmooth, roundiſh, pale green below, but tinged with brown towards the top: from the middle of this to the top come out the flowers one above another, not pointing the ſame way, as in the Harebell, but ſtanding on different ſides of the ſtalk; three, four, or five, to twelve or more in number, each nodding on pedicels, half an inch in length, uſually of a very dark green colour, and having a pair of ſmall bractes at the baſe; the corolla is near an inch in length, almoſt cylindrical except at the baſe, where it ſwells or bellies out, and at the top the ſegments are turned back a little. Theſe flowers have a very ſweet ſmell, and are much valued for the variety of their colours, as pure white, white tinged with blue, all ſhades of blue from theſe to the dark violet, and all ſhades of red purple from the faint bluſh to the deep red; they are alſo ſometimes yellow. Culture and great attention have alſo brought the plants to be very ſtrong, and the flowers to be very large and double.

The Garden Hyacinth is a native of the Levant. It is very abundant about Aleppo and Bagdat, where it flowers in february[n]. Lepechin found it not only with purple, but with yellow flowers in Ruſſia[o]. With us it flowers in march and april; and was cultivated by Gerarde in 1596[p]. Probably earlier; ſince neither he nor Parkinſon ſpeak of the Hyacinth as a flower then new in cultivation.

Gerarde figures only two varieties, the blue ſingle, and what he calls the double, but which is only many-flowered, and alſo blue or ſky-coloured; but he mentions alſo the purple and the white.

Parkinſon, in 1629, has eight Oriental Hyacinths.

1. The White winter Orientall Jacinth.
2. The Purple ditto.
3. The greateſt or Zumbul.
4. The ordinary (common) Orientall Jacinth, of different colours and ſhades.
5. The buſhy ſtalked Orientall Jacinth.

   And three Double ones, viz.

6. The bleake Orientall Jacinth, once double. Green at firſt, but of a blueiſh white when open, retaining ſome ſhew of greenneſs, with the brims of the petals white.
7. The fair (handſome) double blue, or purple.
8. The pure white double.

Johnſon, in his edition of Gerarde's herbal, 1633, has ten, viz.

1. Blue Orientall Jacinth: figured in f. 4. both in flower and ſeed.
2. Many-flowered. f. 5.—blue.
3. The other many-flowered, white. f. 6.
4. Reddiſh purple. f. 7.
5. White. f. 8.
6. Winter Jacinth. f. 9.
7. Leafy-ſtalked. f. 10.

   And three Double ones, viz.

8. Greeniſh-flowered.
9. Blue.
10. Milk White.—Only one of theſe is figured f. 11.

Parkinſon and Johnſon had theſe three double flowers from Cluſius's Curæ poſteriores, and Beſler's Hortus Eyſtettenſis, in which latter work they are figured: and they were all that were then known.

I do not find more than theſe enumerated in Rea's Complete Florilege, publiſhed in 1702. And Mr. Miller ſays that] we formerly had no other varieties in the Engliſh gardens, but the ſingle and double white and blue flowering; that from the ſeeds of theſe there were a few others raiſed in England, and alſo by the Flemiſh gardeners, who came over annually with their flower-roots to vend in England; but that the gardeners in Holland have within the laſt fifty years raiſed ſo many fine varieties, as to render the former of little or no value.

Double flowers ſeem not to have been in much eſteem, long after the Hyacinth had attracted the notice of the floriſts. For though Swertius in his Florilegium, printed in 1620, has figured about forty varieties of this flower, yet he has not one that is double. And Peter, the grandfather of the preſent George Voorhelm of Haarlem, cultivated the Hyacinth a con-

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[g] Cavanilles.
[h] Ibid.
[i] Gærtner.
[k] Hort. kew.
[l] Linn. ſpec.
[m] Hort. kew.
[n] Gron. orient.
[o] Reich. in ſyſt.
[p] Hort. kew.

ſiderable time, before he attached himſelf to double flowers. The beauty of this celebrated flower was then ſuppoſed to conſiſt in the regularity and equality of the petals, and the uniformity of the colours. The double Hyacinth was in no more eſteem then, than the double Tulip is now; and Peter Voorhelm was accuſtomed to throw them out of his collection, till having been ill, and not able to viſit his flowers till they were going off, there remained by accident a bulb with double flowers, which fixed his attention, not for any ſuperior excellence it poſſeſſed, for it was ſmall, and of no remarkable beauty, but probably becauſe it was alone. He cultivated it, however, and increaſed it by offsets. Floriſts appeared who were fond of it, and gave him a good price for it. This muſt have been probably towards the end of the laſt century. He then ſet himſelf to cultivate Hyacinths with double flowers with as much zeal as he had ſhewn before in caſting them out. The firſt double flower he raiſed was named *Mary*; this variety is loſt, as well as the two next that were produced. *The King of Great Britain*, which is now looked upon as the oldeſt double Hyacinth, appeared about the beginning of the preſent century; it was greatly preferred to all the flowers then known, and the price of it was conſiderably more than 1000 florins. From this time the greateſt attention has been paid at Haarlem to the raiſing and culture of this beautiful flower: and ſuch has been the rage for it, that from one to two thouſand Dutch florins have been given for a ſingle root; that is, from near one to two hundred pounds ſterling.

The Haerlem gardeners diſtinguiſh near 2000 Hyacinths by name, and generally publiſh catalogues of them from year to year. New varieties are annually produced, and whole acres together are covered with this flower in the circuit of that town alone [q].

They are diſtributed into claſſes from their colours; the principal of which are blue, red, purple and white, with ſome yellow; they are ſubdivided from the ſhades of each colour, as of the blues deep blue, violet blue, blue purple, porcelain blue, agate blue, ſky blue, french gray, &c.; of the reds deep or full red, roſe-coloured, carnation, &c.: alſo from the mixtures of different colours or ſhades, as light blue with a deep blue or purple eye; light red with a deep red eye; white, with a roſe-coloured, blue, purple or yellow eye, white and red of different ſhades, and blue, violet or purple of different ſhades mixed; yellow with a purple eye, &c. Some alſo have their petals ſtriped with a paler or deeper colour: and all theſe varieties are found both in ſingle and double flowers; but the latter only are now much regarded among floriſts, unleſs it be for producing ſeeds, by which alone they can procure new varieties.

The principal properties of a fine double Hyacinth are the following.

1. The ſtalk ſhould be tall, ſtrong and upright. The flowers, or bells as the floriſts call them, ſhould be ſufficiently numerous, each ſuſpended by a ſhort ſtrong peduncle, in a horizontal poſition; the whole having a compact pyramidal form, with the crown or uppermoſt flower perfectly erect.

2. The flowers ſhould be large, and well filled with broad bold petals, appearing to the eye rather convex, than flat or hollow: they ſhould extend to about the middle of the ſcape or ſtalk.

3. The plain colours ſhould be clear and bright, and ſtrong are in general preferred to pale colours; ſuch as are mixed ſhould blend with elegance.

8. Leaves linear, very narrow, commonly three, ſhorter than a finger's length. Scape very ſhort, terminated by a corymb of purple flowers, cloven half way down. Three ſtamens the length of the corolla, and the other three half the length. Style the length of the corolla. Native of the Cape of Good Hope, in paſtures. Obſerved by Koenig [r].

9. Leaves very long, the width of the finger. Raceme long, round, with very numerous flowers. Pedicels the length of the flowers. Bractes minute, membranaceous, awnleſs. Flowers white, cut beyond the middle. Filaments broad-lanceolate, oppoſite to the ſegments of the corolla. Anthers blue [s].

Native of Italy. Obſerved by Capeller in gardens and fields about Rome.—Introduced in 1786, by Mr. John Græfer. It flowers here in may [t].]

10. The tenth ſort has pretty large, oval, bulbous roots, from which ariſe ſeveral leaves, which are about eight or nine inches long, and half an inch broad; they are incurved a little on their ſides, and end in obtuſe points; theſe embrace each other at their baſe; out of the middle of theſe, the ſtalk which ſuſtains the flowers ariſes; it is naked below, but the upper parts are garniſhed with ſmall flowers growing in a ſpike; theſe have ovate pitcher-ſhaped petals, which are reflexed at their brim, and are of an aſh-coloured purple, or obſolete colour, ſeeming as if faded, but have an agreeable muſky ſcent: theſe ſtalks do not riſe more than ſix inches high, ſo the flowers make no great appearance; but where they are in ſome quantity, they will perfume the air to a conſiderable diſtance. This ſort flowers in april, and the ſeeds ripen in july.

Of this there are two varieties, one of which has the ſame coloured flowers with this here enumerated, on the lower part of the ſpike, but they are larger, and have more of the purple caſt, but the flowers on the upper part of the ſpike are yellow, and have a very grateful odour. The Dutch gardeners title it Tibcadi Muſcari. As this is ſuppoſed to be only a ſeminal variety of the third, I have not enumerated it as diſtinct. There is another variety of this with very large yellow flowers, that has been raiſed from ſeeds in Holland, which the floriſts there ſell for a guinea a root.

[It is a native of the Levant; Linneus ſays beyond the Boſphorus, whence it was brought into Europe before 1554. It was cultivated here in 1597, according to Gerarde [u].

11. Flowers without leaves, yellow. Found at the Cape of Good Hope by Thunberg [x].]

12. The twelfth ſort has a large bulbous root, from which come out ſeveral plain leaves a foot long, and about half an inch broad at their baſe; they are ſmooth, and end in obtuſe points. The flower-ſtalks riſe near a foot and a half high; they are naked at the bottom for about ſeven or eight inches, above which the panicles of flowers begin, and terminate the ſtalks. The flowers ſtand upon peduncles which are more than an inch long, each ſuſtaining three, four, or five flowers, whoſe petals are cut into ſlender filaments like hairs; they are of a purpliſh blue colour, and having neither ſtamina nor germ, never produce ſeeds. It flowers in may, and, after the flowers are paſt, the ſtalks and leaves decay to the root, and new ones ariſe the following ſpring.

[Native of the South of Europe. Linneus ſuſpects it to be a variety of the next ſpecies. It was cultivated here in 1629, according to Parkinſon [y].]

13. Bulb as large as a middling onion, [ovate, ſolid and white, covered with a purpliſh ſkin.] Leaves five or ſix, a foot (or eighteen inches) long, and three quarters of an inch broad at the baſe, diminiſhing gradually to a blunt point; [linear, channelled, bright green.] The flower-ſtalk riſes about a foot (or eighteen inches) in height, [round, upright, ſmooth, glaucous green.] The lower half is naked, but the upper part [has a looſe raceme of flowers, frequently for a foot in length. The lower flowers are farther aſunder, before they flower they are upright, but whilſt they flower, and afterwards, they ſtand out horizontally, on pedicels half an inch in length; their colour is a yellowiſh green, with blue or purple at the end; theſe are fertile. The upper ones are ſmaller, barren, ſtand upright, form a corymb, and are blue or violet, as are alſo their long pedicels [z]. Parkinſon ſays, "the whole "ſtalke with the flowers upon it, doth ſomewhat reſemble a long purſe taſſel, and thereupon divers "gentlewomen have ſo named it."

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[q] Des Jacintes, Amſt. 1768. par le Marquis de St. Simon.

[r] Linn. mant.

[s] Linn. mant.

[t] Hort. kew.

[u] Ibid.

[x] Linn. ſuppl.

[y] Hort. kew.

[z] Pollich, Krock. Linn. mant.

Native of the South of Europe, in corn fields.] Mr. Miller ſays he had both roots and ſeeds from Spain and Portugal. [John Bauhin and Ray both obſerved it near Geneva; and I found it at Chatelaine near that city in flower on the 21ſt of april, 1779.] It flowers with us the end of april and beginning of may. It varies with white and with blue flowers, but the purple is moſt common.

Gerarde, who cultivated it in 1596, calls it Faire haired Iacint; Parkinſon, Great purple Faire-haired Iacinth; and Mr. Curtis, Two-coloured or Taſſel Hyacinth. It is diſtinguiſhed more by its ſingularity than its beauty, and by the difference between the lower and the upper barren flowers.]

14. This ſort grows naturally in the vineyards and arable fields in France, Italy, and Germany, and where it is once planted in a garden, it is not eaſily rooted out, for the roots multiply greatly, and if they are permitted to ſcatter their ſeeds, the ground will be filled with the roots. There are three varieties of this, one with blue, another with white, and a third with Aſh-coloured flowers: the firſt has a ſmall, round, bulbous root, from which come out many leaves about ſix inches long, which are narrow, and their edges are incurved, ſo as to be ſhaped like a gutter: between theſe ariſes the flower-ſtalk, which has a cloſe ſpike of blue ſeſſile flowers at the top: they ſmell like new ſtarch, or the ſtones of plums when freſh.

[Mr. Miller probably intends by this the next ſpecies, with which it is frequently confounded.

The leaves are three lines wide, ſtraight on account of their ſhort petioles. The ſpike has from twenty to thirty flowers. The teeth of the corolla are white, and the uppermoſt are ſmall[a].

According to Scopoli, it has the appearance of Anthericum autumnale, the leaves rolled into a cylinder, the raceme (or ſpike) an inch long, the flowers nodding, ſweet-ſmelling, ſcarcely longer than their proper pedicels.

It differs from the next ſpecies, in having the leaves upright, the bunch of flowers ſmaller, the flowers themſelves larger, rounder, of a paler and brighter blue.

Parkinſon enumerates three varieties, the white, the bluſh-coloured and the branched; the firſt is frequently imported with other bulbs from Holland; the laſt ſeems to be a curious variety, and was obtained, according to Cluſius, from the white[b]. The grape Hyacinth was cultivated by Gerarde in 1596[c]. He calls it Great Grape-flower. Parkinſon, Skie-coloured Grape-flower. It is now ſeldom met with but in long-eſtabliſhed gardens.

15. Bulb ſmall. Leaves keeled, very narrow, a line or little more in breadth, cylindrical, on account of the weakneſs of their petioles looſe and decumbent, rolled round and twiſted in a variety of ways. Scape a ſpan high, blue under the flowers, compreſſed at top, terminated by a cloſe globular ſpike or raceme of from forty to fifty flowers, of a very dark blue, with a three-cornered white mouth; they are imbricated downwards, have very ſhort peduncles, a ſweetiſh ſmell, ſomewhat like new ſtarch, or plums, or Iris graminea, and have generally a ſingle very ſhort bracte at the baſe of each; the upper ones are barren[d]. They ſometimes vary to white, according to Haller.

Native of the South of Europe, in corn fields. I gathered it in flower near Geneva, april the 8th, 1779. It was cultivated by Gerarde in 1596[e]. He calls it Blew Grape-flower; and Parkinſon, darke blew Grape-flower. Mr. Curtis names it Starch Hyacinth. This is much more common in our gardens than the botryoides, and flowers in april and may[f].

Mr. Miller's racemoſus ſeems to be the Muſcari; and his botryoides this ſpecies.

16, 17. Found at the Cape of Good Hope by Chevalier Thunberg, along with the revolutus, n. 6. corymboſus, n. 8. and convallarioides, n. 11.]

PROPAGATION AND CULTURE.

1. The firſt ſort, being common in many parts of England, is ſeldom admitted into gardens.

2. The ſecond alſo is in very few gardens.

3, 5. The caſe is the ſame with the third and fifth ſorts. Since ſo many fine flowers have been raiſed from the ſeeds of the Eaſtern Hyacinth, theſe have been almoſt totally neglected.

Such as are deſirous to preſerve them need not be at much trouble about it, for their roots propagate in great plenty in any ſoil or ſituation, and require no other care, but to take up their roots every ſecond or third year, ſoon after their leaves decay, and to plant them again in autumn: for if they are permitted to remain longer in the ground, their roots will multiply to ſuch a degree, as to render their flowers very ſmall and weak. They may all be increaſed either by ſeeds, or offsets from the old bulbs; the latter method only is practiſed with the above ſorts.

The Garden or Eaſtern Hyacinth.

The Eaſtern Hyacinth is propagated by ſeeds or offsets from the old bulbs; the former method has been but little practiſed in England till lately, but in Holland and Flanders it has been followed for many years, whereby they have obtained a very great variety of the moſt beautiful flowers of this ſort: and it is owing to the induſtry of the floriſts in thoſe countries, that the lovers of gardening are ſo agreeably entertained, not only with the curious variety of this, but of moſt other bulbous rooted flowers.

The method of raiſing theſe flowers from ſeed is as follows: having provided yourſelf with ſome good ſeed (which ſhould be ſaved from either ſemi-double, or ſuch ſingle flowers as are large, and have good properties) you muſt have a parcel of ſquare ſhallow boxes or pots, with holes in their bottoms to let off moiſture, which muſt be filled with freſh light ſandy ſoil, laying the ſurface very level; then ſow your ſeeds thereon as equally as poſſible, covering them about half an inch thick with the ſame light earth; the time for this work is about the middle or latter end of auguſt. Theſe boxes, or pots, ſhould be placed where they may enjoy the morning ſun only until the latter end of ſeptember, at which time they ſhould be removed into a warmer ſituation, and towards the end of october they ſhould be placed under a common hot-bed frame, where they may remain during the winter and ſpring months, that they may be protected from hard froſts: though they ſhould be expoſed to the open air when the weather is mild, by taking off the glaſſes. In the latter end of february or the beginning of march, the young plants will begin to appear above ground, at which time they muſt be carefully ſcreened from froſts, otherwiſe they will be ſoon deſtroyed when they are ſo young; but you muſt never cover them at that ſeaſon but in the night, or in very bad weather; for when the plants are come up, if they are cloſe covered, they will draw up very tall and ſlender, and thereby prevent the growth of their roots. About the middle of april, if the weather proves good, you may remove the boxes out of the frame, placing them in a warm ſituation, obſerving, if the ſeaſon be dry, to refreſh them now and then gently with a little water, as alſo to keep them very clear from weeds, which would ſoon overſpread the tender plants, and deſtroy them, if permitted to remain.

Towards the beginning of may theſe boxes ſhould be removed into a cooler ſituation; for the heat of the ſun at that ſeaſon would be too great for theſe tender plants, cauſing their blades to decay much ſooner than they would naturally do, if they were ſcreened from its violence. In this ſhady ſituation they ſhould remain during the heat of ſummer, obſerving to keep them conſtantly clear from weeds; but you muſt not place them under the dripping of trees, &c. nor ſhould you give them any water after their blades are decayed, for that would infallibly rot the roots. About the latter end of auguſt you ſhould ſift a little light rich earth over the ſurface of the boxes, and then remove them again into a warmer ſituation, and treat them, during the winter, ſpring, and ſummer months, as was before directed: and about the middle of auguſt following you ſhould prepare a bed of light rich ſandy ſoil, in proportion to the quantity of your ſeedling plants; and having levelled the ſurface very even, you ſhould take the earth from the boxes in which your plants were raiſed, into a ſieve, in order to get out all the roots, which by this time, (if they have grown well) will be about the thickneſs of a ſmall quill; theſe roots ſhould be placed upon the bed at about two or three inches aſunder, obſerving to ſet the bottom part of their roots downwards; then cover them over two inches thick with the ſame light earth; but as it will be impoſſible to get all the ſmall roots out of the earth in the boxes, you ſhould ſpread the earth upon another bed equally, and cover it over with light earth; by which method you will not loſe any of the roots, be they ever ſo ſmall.

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[a] Linn. mant. [b] Curtis. [c] Hort. kew.
[d] Linn. mant. Retz. Krocker, Villars.
[e] Hort. kew. [f] Curtis.

Theſe beds muſt be arched over with hoops, and in very hard froſty weather they muſt be covered with mats, &c. to protect them from froſt; and in the ſpring, when the green leaves are above ground, if the weather ſhould be very dry, you muſt refreſh them with water; but do this ſparingly, for nothing is more injurious to theſe bulbs than too great quantities of moiſture. During the ſummer ſeaſon you muſt conſtantly keep the beds clear from weeds; but after the blades are decayed, you muſt never give them any water; and in autumn you ſhould ſtir the ſurface of the bed with a very ſhort hand-fork, being exceeding careful not to thruſt it ſo deep as to touch the roots, which, if hurt, are very ſubject to periſh ſoon after. Then ſift a little freſh, light, rich earth over the bed about an inch thick, or ſomewhat more, and in winter cover them again (as was before directed.) In this bed the roots may continue two years, obſerving to treat them, both in ſummer and winter, as before; then the third year the roots ſhould be carefully taken up a little before their leaves decay, laying the roots horizontally in the ground to ripen for three weeks, after which they may be kept out of the ground till the end of auguſt, when they ſhould be planted into new beds prepared as before, placing them at the diſtance of ſix inches aſunder; in theſe beds the roots may remain till they flower, during which time they ſhould be treated as before, with this difference only, that inſtead of covering them with mats in the winter, the ſurface of the ground ſhould be covered with tanners bark.

When their flowers begin to ſhew themſelves, you ſhould mark all ſuch as appear to have good properties, by thruſting a ſmall ſtick down by each root; which roots, at the time for taking them up, ſhould be ſelected from the reſt, and planted by themſelves; though I would by no means adviſe the rejecting any of the other roots, until they have blown two years, before which you cannot aſcertain their value. When the green leaves of theſe plants begin to decay, their roots muſt be taken up, and a bed of light earth, in a ſhady ſituation, ſhould be raiſed into a ridge; the better to ſhoot off the moiſture, the roots ſhould be laid into the earth again in an horizontal poſition, leaving the green leaves hanging out of the ground from the roots, whereby the great moiſture contained in their very ſucculent leaves and flower-ſtalks may be exhaled, and prevented from returning to the roots, which, when ſuffered ſo to do, is very often the cauſe of their rotting after they are out of the ground. In this ridge the roots ſhould remain until the leaves are quite dried off, when they muſt be taken up, and after being cleared of all manner of filth, which would be hurtful to them, they muſt be laid up in boxes, where they may preſerved dry until ſeptember, which is the proper ſeaſon for planting them again; the method of doing this ſhall be hereafter mentioned, when we treat of the management of old roots.

I ſhall now proceed to the culture of ſuch Hyacinths as have either been obtained from Holland, or are of our own product from the ſeeds of ſuch flowers as were very beautiful, and worthy to be preſerved in collections of good flowers: and it has been the want of ſkill in the management of theſe noble flowers, which has occaſioned the ill ſucceſs moſt people have had with them in England, whereby they have been neglected, ſuppoſing their roots to degenerate after they have flowered in England, which is a great miſtake; for were the roots managed with the ſame art as has been practiſed in Holland, I am fully convinced they would thrive near as well in England as there, or elſewhere, as I have experienced; for from ſome hundreds of roots which I have received from Holland at two or three different times, I have had a very great increaſe of their roots, which were as large, and produced as many flowers upon their ſtems, as the ſame ſorts generally do in Holland.

The ſoil in which theſe flowers ſucceed beſt, is a light, ſandy, freſh, rich earth, which may be compoſed after the following manner: take half freſh earth from a common, or paſture land, which is chiefly of a ſandy loam; this ſhould be off the ſurface, and not taken above eight or nine inches deep at moſt; and if you take the turf, or green ſward with it, it will ſtill be better, provided you have time to let it rot before it is uſed; to this you ſhould add a fourth part of ſea-ſand, and the other fourth part of rotten cow dung; mix theſe well together, and caſt it into a heap, where it may remain until you uſe it, obſerving to turn it over once in three weeks or a month, that it may be well mixed. If this compoſt is made two years before it is uſed, it will be much the better; but if you are obliged to uſe it ſooner, then it ſhould be oftener turned, that the parts may the better unite.

This ſoil ſhould be laid two feet deep on the beds which are deſigned for Hyacinths, and if you lay a little rotten cow dung, or tanners bark, at the bottom, which may be within reach of the fibres, but ſhould by no means touch the bulb, it will be better. If the ſoil is very wet where theſe beds are made, you ſhould raiſe them ten or twelve inches above the ſurface of the ground; but if it be dry, they need not be raiſed above three or four inches.

The manner of preparing the beds is as follows: Firſt, take all the former old earth out of the bed to the depth you intend, which ſhould be near three feet; then ſpread ſome rotten neats dung, or tan, in the bottom, about ſix inches thick, laying it very level; upon this you ſhould lay the above-mentioned earth two feet thick, levelling it very even; then ſcore out the diſtances for the roots, which ſhould be eight inches ſquare, in ſtraight rows each way; after which, place your roots exactly in the ſquares, obſerving to ſet the bottom part downward; then cover the roots ſix inches deep with the ſame prepared earth, being very careful in doing this not to diſplace any of the roots; and if the tops of theſe beds are made a little rounding, to ſhoot off the wet, it will be of ſervice in moiſt ground, provided the middle of the beds be not made too high, which is a fault the other way.

The beſt ſeaſon for planting theſe roots is the middle or latter end of ſeptember, according to the earlineſs or lateneſs of the ſeaſon, or the weather when it happens; but I would adviſe you never to plant them when the ground is extremely dry, unleſs there be a proſpect of ſome rain ſoon after; for if the weather ſhould continue dry for a conſiderable time after, the roots will receive a mouldineſs, which will certainly deſtroy them. The beds will require no farther care until the froſt comes on very ſevere, at which time they ſhould have ſome rotten tan ſpread over them, about four inches thick; and if the alleys on each ſide of the bed are filled up, either with rotten tan, dung, or ſand, it will prevent the froſt from penetrating the ground on each ſide to the roots, and ſecure them from being deſtroyed; but when the winters prove very ſevere, it will alſo be proper to have ſome Peas-haulm, Straw, or ſuch like covering laid over them, which will keep out the froſt better than mats; and lying hollow, will admit the air to the ſurface of the ground, and alſo permit the exhalations to paſs off, whereby the earth will remain dry, and prevent the roots from rotting, which has often happened when the beds have been too cloſely covered. But you muſt obſerve to take off this light covering whenever the weather is mild, and only let it continue on in very hard froſts; for where the beds are covered with tan or ſea-coal aſhes, no common froſt can penetrate through; ſo the coverings are uſeleſs, except in very ſevere froſt; for a ſmall froſt cannot injure the roots before the green leaves appear above ground, which is ſeldom before the beginning of february; at which time the beds muſt be arched over with hoops, that they may be covered either with mats, canvas, or ſome other light covering, to prevent the froſt from injuring the buds as they ariſe above ground; but theſe coverings muſt be conſtantly taken off every day when the weather is mild, otherwiſe the flower-ſtems will be drawn up to a great height, and become very weak, and the foot-ſtalks of the flowers will be long and ſlender, and ſo rendered incapable of ſupporting the bells; which is a great diſadvantage to the flowers, for one of their greateſt beauties conſiſts in the regular diſpoſition of their bells. When theſe hoops are fixed over the beds, the rotten tan ſhould be moſt of it taken off them; in doing of which, great care ſhould be taken not to bruiſe or injure the leaves of the Hyacinths, which by that time will be breaking out of the ground with the flower-ſtem, therefore the tan ſhould be removed by the hands; or if any inſtrument is made uſe of in the doing of it, there muſt be great caution how it is performed.

When the ſtems of the flowers are advanced to their height, before the flowers are expanded, you ſhould place a ſhort ſtick down by each root, to which, with a wire formed into a hoop, the ſtem of the flowers ſhould be faſtened, to ſupport them from falling; otherwiſe, when the bells are fully expanded, their weight will incline them to the ground, eſpecially if they are not ſcreened from the wind and rain.

During their ſeaſon of flowering they ſhould be covered in the heat of the day from the ſun, as alſo from all heavy rains; but they ſhould be permitted to receive all gentle ſhowers, as alſo the morning and evening ſun; but if the nights are froſty, they muſt be conſtantly defended therefrom. With this management you may continue your Hyacinths in beauty at leaſt one whole month, and ſometimes more, according to their ſtrength, or the favourableneſs of the ſeaſon.

When their flowers are quite decayed, and the tops of their leaves begin to change their colour, you muſt carefully raiſe the roots out of the ground with a narrow ſpade, or ſome other handy inſtrument; this is what the Dutch gardeners term lifting of them: in the doing of this, the inſtrument muſt be carefully thruſt down by the ſide of the root, being careful not to bruiſe or injure it, as alſo to put it below the bottom of the root; then by the forcing of this inſtrument on one ſide, the fibres of the root are raiſed and ſeparated from the ground. The deſign of this is to prevent their receiving any more nouriſhment from the ground: for by imbibing too much moiſture at this ſeaſon, the roots frequently rot after they are taken up: about a fortnight after this operation the roots ſhould be entirely taken out of the ground, and then carried to beds ſituated where the morning ſun only ſhines upon them; the earth of the beds ſhould be looſe and raiſed into a ſharp ridge, laying the roots into it in a horizontal poſition, with their leaves hanging out, by which means a great part of the moiſture contained in their thick ſucculent ſtalks and leaves will evaporate; which, if it were permitted to return back to the roots, would cauſe them to rot and decay after they are taken up, which has been the general defect of moſt of the Hyacinths in England.

In this poſition the roots ſhould remain until the green leaves are entirely decayed; which perhaps may be in three weeks time. This is what the Dutch gardeners term the ripening of their roots, becauſe by this method the roots become firm, and the outer cover is ſmooth, and of a bright purple colour; whereas thoſe roots which are permitted to remain undiſturbed, till the leaves and ſtalks are quite decayed, will be large, ſpongy, and their outer coats will be of a pale colour; for the ſtems of many of theſe flowers are very large, and contain a great quantity of moiſture, which, if ſuffered to return into the roots, will infallibly cauſe many of them to periſh. After they are ſo ripened, you muſt take them out of the ground, and wipe them clean with a ſoft woollen cloth, taking off all the decayed parts of the leaves and fibres, putting them into open boxes where they may lie ſingly; and be expoſed to the air, but they muſt be preſerved carefully from moiſture; nor ſhould they be ſuffered to remain where the ſun may ſhine upon them; in this manner they may be preſerved out of the ground until ſeptember, which is the ſeaſon for planting them again, at which time you muſt ſeparate all the ſtrong flowering roots, planting them in beds by themſelves, that they may make an equal appearance in their flowers; but the offsets and ſmaller roots ſhould be planted in another ſeparate bed for one year; in which time they will acquire ſtrength, and by the year ſucceeding will be as ſtrong as the older roots.

The ſingle and ſemi-double flowers ſhould be planted alſo in a bed by themſelves, where they ſhould be carefully ſheltered (as was directed before) from the froſt, until the flowers are blown; at which time their covering ſhould be entirely removed, and they ſuffered to receive the open air, but the flower-ſtalks ſhould be ſupported with ſticks; which, though the weather may ſoon deface the beauty of the flowers, yet is abſolutely neceſſary to promote their ſeeding; and when the ſeeds are quite ripe, you muſt cut off the veſſels and preſerve them, with the ſeeds therein, until the ſeaſon for ſowing it. But you muſt obſerve, that after theſe flowers have produced ſeeds, they ſeldom flower ſo well again, at leaſt not in two years after; ſo that the beſt method to obtain good ſeeds is, to plant new roots every year for that purpoſe. Although theſe roots are, by moſt perſons, taken up every year, yet if the beds are well prepared for them, they may remain two years in the ground unremoved, and the roots will increaſe more the ſecond year than the firſt, though the flowers are more liable to degenerate: therefore thoſe who cultivate theſe for ſale, take up their roots annually when they are large and ſaleable; but the offsets and ſmall roots, they uſually leave two years in the ground.

There are ſome perſons who let their Hyacinth roots remain three or four years unremoved, by which they have a much greater increaſe of roots, than when they are annually taken up; but the roots by this great increaſe are frequently degenerated, ſo as to produce ſingle flowers; therefore I ſhould adviſe the taking up of the roots every year, eſpecially thoſe of the moſt valuable kinds, which is the moſt certain method to preſerve them in their greateſt perfection, though the increaſe may not be ſo great; and if theſe roots are planted a fortnight or three weeks earlier in the autumn than is before directed, it will cauſe them to produce ſtronger flowers; and thoſe roots which are annually removed, will be rounder and firmer than ſuch as ſtand two years unremoved.

[Obſerve that if the bulbs of double Hyacinths be planted ſooner than the middle of october, they will be apt to come up during the winter, and thus be injured by ſevere froſts; and if it be deferred later than the middle of november, the bulbs will begin to put out fibres, which will weaken them.

The beds ſhould be in a dry airy part of the garden, with a ſouthern expoſure ſheltered from the north and eaſt, ſix feet diſtant at leaſt from the fence, and made ſloping a little towards the ſun.

Floriſts differ as to the proportion of the materials of the compoſt in which the bulbs are to be planted. Some inſtead of half freſh earth, recommend only one third, with the ſame quantity of rough ſea or river ſand, and the remaining third part to be one fourth old rotten cow-dung, and the reſt the earth of decayed leaves. Some put in tanner's bark, rotten wood or old ſawduſt. Others reprobate tan, as retaining an aſtringency which is pernicious to delicate bulbous flowers.

In uſing freſh earth from a paſture it is neceſſary to guard againſt the wire-worm, by minutely inſpecting the heap as it is turned over, and picking out this deſtructive creature, which is of a yellow colour, and about an inch in length.

Perſons who are nice about their flowers erect a covering or awning over them during the time of flowering, to keep off the rain without excluding the light, and to ſhelter them from cold winds, which are frequently very injurious at the early ſeaſon when theſe delicate flowers are in bloom. This awning ſhould be of coarſe linen on a frame of wood, made to roll up eaſily, that in mild cloudy weather the flowers may have the full benefit of the ſun and air: and it ſhould not continue on more than a fortnight or three weeks, for it weakens the bulbs.

Hyacinths never require any water; moderate rains are ſufficient for them after planting and till they bloom; and when they have paſt their bloom heavy rains ſhould be kept from the bulbs by hoops covered with mats.

Such bulbs as are four or five years old flower ſtrongeſt in England; and after this gradually decline: but in Holland the ſame bulb will produce bloom twelve or thirteen years together, nor is it ever known to die merely from age.

The Hyacinth ſucceeds beſt in ſituations near the ſea. In more inland parts the floriſt muſt introduce freſh bulbs annually to ſupply his deficiencies; and keep a reſerve in narrow deep pots to fill up the vacancies in his beds.

Single Hyacinths may be planted a week or two ſooner than the double ones, and thus will bloom two or three weeks earlier than the latter.

Upon theſe you muſt depend for ſeed, for the double ones rarely produce any. Save your ſeeds from thoſe plants which have ſtrong ſtraight ſtems, and a regular well-formed pyramid of flowers, which are ſemi-double: and do not gather it till it is perfectly black, when the pericarp will appear yellow on the outſide, and begin to open. Then cut off the ſtem, and place it in a dry, airy, cool place till the time of ſowing; which is either the end of october or the beginning of march. (Mr. Miller recommends auguſt.) By the ſixth year after ſowing, all the bulbs that ſurvive will have produced their bloom, and if one in five hundred ſhould deſerve to be recorded in the annals of the Floriſt, the cultivator may eſteem himſelf fortunate.]

The Grape-Hyacinths or Muſcari.

Theſe are hardy, will thrive in the open air, and require no other culture but to take up the roots every ſecond or third year, to ſeparate the bulbs; for ſome of them multiply faſt, and when the bunches of bulbs become large, they do not flower ſo ſtrong. They ſhould be taken up ſoon after their ſtalks and leaves decay, and ſpread on a mat in a dry ſhady room for a fortnight, to dry, after which they may be kept in boxes till Michaelmas, when they may be planted in the borders of the flower-garden, and treated in the ſame way as the common Hyacinths.

They are all eaſily increaſed by offsets, which moſt of them ſend out in plenty; ſo that there is no occaſion to ſow the ſeeds, unleſs it be to gain new varieties.

[The botryoides and racemoſus, which are very much alike, being troubleſome from their great increaſe, and the former not flowering readily in an open border, it is a good method to plant the bulbs in moderately ſized pots, filled with light earth, and to plunge them in the borders to flower: in the autumn they ſhould be taken out, and the offsets thrown away. The latter is much the moſt common in our gardens, and is frequently miſtaken for the botryoides[g].

HYACINTHUS. See *Agapanthus*, *Aletris*, *Antholiza*, *Polianthes*, *Scilla*.

———— lanatus. See *Lanaria*.

HYBANTHUS. See *Viola*.

HYDNORA. See *Aphyteia*.

HYDNUM. (Υδνα *of Dioſcorides.* Οιδνον *tuber, in Theophraſtus, from* οιδεω *tumeo; written* υδνον *in Plutarch, ſymp.* 4.)

Lin. gen. Schreb. n. 1676.
Erinaceus. *Dill. Mich.* 72.
Claſſ. 24. 5. Cryptogamia Fungi.

GENERIC CHARACTER.

A horizontal Fungus, echinated beneath with awl-ſhaped fibres.

OBS. *Theſe awl-ſhaped bodies, which Linneus compares to the prickles of a hedge-hog, are ſoft, ſolid, conical or cylindrical ſubſtances, emitting ſeeds from every part of their ſubſtance*[h].

Linneus (ſyſt. veget. ed. 14. 978.) has ſix ſpecies of this Fungus, five with ſtems and one ſtemleſs. Of theſe Hudſon has three, all having a ſtem. Dr. Withering has five with a ſtem, and ſix without. Swartz has added three from Jamaica. They chiefly grow on decaying wood.

HYDRAGONUM. See *Andromeda calyculata.*]

HYDRANGEA. (*So named by Gronovius, from* υδωρ *water, and* αγγος *a veſſel.*)

Lin. gen. n. 557. *Schreb. n.* 760. *Gærtn. t.* 30. *Juſſ.* 310. Hortenſia. *Juſſ. gen.* 214.
Claſſ. 10. 2. Decandria Digynia.
Nat. order of *Succulentæ*. *Saxifragæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-toothed, permanent, ſmall.

COR. *Petals* five, equal, roundiſh, larger than the calyx.

STAM. *Filaments* ten, longer than the corolla, alternately longer and ſhorter. *Anthers* roundiſh, twin.

PIST. *Germ* roundiſh, inferior. *Styles* two, ſhort, diſtant. *Stigmas* blunt, permanent.

PER. *Capſule* roundiſh, twin, two-beaked with the double ſtyle, angular with ſeveral nerves, crowned with the calyx, two-celled with a tranſverſe partition, opening by a hole between the horns.

SEEDS numerous, angular, acuminate, very ſmall.

ESSENTIAL CHARACTER.

Capſ. two-celled, two-beaked, containing many ſeeds. *Cor.* five-petalled. *Cal.* five-cleft, ſuperior.

SPECIES.

1. Hydrangea arboreſcens. *Shrubby Hydrangea.*
   Lin. ſpec. 568. *Reich.* 2. 305. *Mill. fig. t.* 251. *Gron. virg.* 50. *Duham. arb.* 1. 298. *t.* 118. *Du Roi harbk.* 1. 309.
   H. arborea. *Gærtn. fruct.* 1. 150.
   Leaves ovate ſmooth, alternate ſtamens longer.

[2. Hydrangea radiata. *Downy Hydrangea.*
   Walt. carol. 251. *Smith ic. rar.* 12.
   Leaves lobed tomentoſe underneath.

3. Hydrangea hortenſis. *Garden Hydrangea,* or *Chineſe Guilder-Roſe.*
   Smith ic. rar. t. 12.
   Hortenſia. *Commerſ. Juſſ. gen.* 214.
   Primula mutabilis. *Lour. cochinch.* 104.
   Viburnum ſerratum. *Thunb. jap.* 124?
   Sijo. *Kæmpf. exot.* 854.
   L'Obier de la Chine. *Buchoz chin. t.* 45.
   Leaves elliptical ſerrate very ſmooth, ſtamens all of an equal length.]

DESCRIPTIONS, *&c.*

1. This has a ſpreading woody root, which produces ſeveral ſoft, pithy, woody ſtems, from three to four feet high; they are four-cornered when young, and have a green bark, but as they grow older they become taper, and have a light-brown bark. Leaves at each joint oppoſite, three inches long, and two broad near the baſe, pointed, ſerrate; they are deep green above, and pale underneath, with many tranſverſe veins; the petioles are about an inch long. Flowers terminating, in a cyme. Corolla ſmall, white, having an agreeable odour.

[The flowers have ſometimes eight ſtamens only according to Du Roi.

The calyx is faſtened to the pericarp, which is a ſmall capſule, almoſt hemiſpherical; marked with ten ſtreaks, flattiſh above, not opening by valves, but by a central hole between the ſtyles. Partition membranaceous, pervious at top when ripe. Seeds about twenty in each cell, compreſſed like a lens, netted-veined, brown[i].

Linneus had deſcribed the capſule as opening between the horns formed by the two permanent ſtyles; we are at a loſs to know why in his firſt mantiſſa he corrected this, and affirmed that the capſule is what he terms *circumſciſſa*, or cut round horizontally into two hemiſpheres. Gærtner however ſuggeſts, that although in all his ſpecimens the capſules opened by a hole at top, yet in ſome it may be otherwiſe, and they may

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[g] Curtis.

[h] Withering, 4. p. 334. and Bulliard.

[i] Gærtner.

I ſplit

ſplit in half horizontally: of this we have an inſtance in Heuchera.

Native of Virginia and Canada. Introduced in 1736, by Peter Collinſon[k].]

The flowers appear towards the end of july, and in auguſt, but ſeldom perfect their ſeeds in England.

[2. This has a ſomewhat ſhrubby ſtem, branched, and growing to the height of about five feet: the leaves are broad, heart-ſhaped, ſerrated, and ſharp-pointed: they are footſtalked and ſtand oppoſite, and the lower ſurface is downy and of a ſilvery appearance.

Gathered in Carolina by T. Walter, Eſq. and in Florida by Mr. J. Bartram[l].

3. Root fibrous, much branched, whitiſh. Stems ſeveral growing together, erect, ſhrubby, branched, round, with a ſmooth brown bark. Branches oppoſite, each pair croſſing the others, round, ſmooth, leafy, green with dark purple ſpots, flowering at the top. Leaves oppoſite, ſpreading and curved backwards, obtuſely pointed, entire towards their baſe, bright green, pale beneath: foot-ſtalks ſhort and thick, ſmooth, pale, channelled above. Cymes terminating, the ſize and figure of the common Guilder-Roſe, and like that almoſt entirely compoſed of radiated abortive flowers, of a beautiful roſe-colour, inodorous, green when young, as well as in decay. Flower-ſtalks variouſly ſubdivided, ſmooth, ſometimes hairy: partial ones of a deep roſe-colour, roundiſh. Bractes none, except a few leaves about the baſe of the cyme, reſembling thoſe on the branches, but ſmaller. Calyx in a luxuriant ſtate of deformity, very large, compoſed of four (rarely three or five) ſpreading, unequal, obovate leaves, which are entire, ſmooth, roſe-coloured, ſlightly ribbed and permanent. Petals generally four, nearly equal, ſmall, obovate, concave, the colour of the calyx, fading. Filaments eight, ſometimes ſix or ten, as long as the corolla, ſpreading, awl-ſhaped, red. Anthers didymous, grayiſh with yellow pollen. Germ wanting. Styles two or three, (rarely one) nipple-ſhaped, ſtanding cloſe together, purple, half as long as the ſtamens. Stigmas blunt.

At the diviſions of the cyme are ſometimes found a few more complete five-cleft flowers, having a ſmall five-toothed calyx, three ſpreading ſtyles, and an inferior germ conſiſting of three cells; but theſe flowers wither away without coming to maturity. If the fruit ſhould prove a capſule with many ſeeds, the plant will belong to this genus; but if it ſhould be a berry, with a ſingle ſeed when ripe, it muſt be referred to the genus Viburnum; there is every appearance however of its being an Hydrangea.

It is much valued on account of the great profuſion of its very elegant flowers, which are monſtrous in the ſame manner as the Viburnum Opulus or European Guilder-Roſe.

Its native place is unknown. It is commonly cultivated in the gardens of China and Japan, whence it was introduced at Kew by Sir Joſeph Banks, Bart. in 1790[m].

Loureiro ſays, that on diſſecting the germ, and viewing it with the microſcope, it appeared to be many-ſeeded, which confirms the idea of its being an Hydrangea.]

PROPAGATION AND CULTURE.

1. This is eaſily increaſed by parting the roots at the end of october, which is alſo the beſt time to tranſplant them. It ſhould have a moiſt ſoil, for it grows naturally in marſhy places; and requires no other culture, but to keep the plants clean from weeds, and to dig the ground between them every winter. If in ſevere froſts the ſtalks are killed, they will put out new ones the following ſpring.

[3. This beautiful plant being very eaſily increaſed by cuttings, has been pretty generally diffuſed within the compaſs of a few years. The ſoil that it thrives beſt in is a good rich loam. Some trials have been made with it to ſtand abroad; and it is hardy enough in a ſheltered ſituation and warm ſoil to endure moſt of our winters; but it does not flower ſo well in the open air as in a greenhouſe. The Garden Hydrangea therefore muſt be conſidered rather as a greenhouſe plant than a hardy one; and ſuperfluous plants only ventured in the open borders of the flower-garden.

The ſecond ſort has not yet been introduced among us.

HYDRASTIS. (*So named by Ellis—a nobiliſſima virgine americana.* Linn.—*Probably it was ſent to Ellis by Miſs Colden. May it not be derived from* υδραινω?

Lin. gen. n. 704. *Schreb. n.* 958. *Juſſ.* 232.

Warneria. *Mill. fig.* 190. *t.* 285. Warnera. *Mill. dict.* (*from Richard Warner, Eſq. of Woodford Row, Eſſex, a very curious botaniſt, and a great collector of growing plants.*)

Claſſ. 13. 7. Polyandria Polygynia.

Nat. order of *Ranunculaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. none.

COR. *Petals* three, ovate, regular.

STAM. *Filaments* numerous, linear, compreſſed, a little ſhorter than the corolla. *Anthers* compreſſed, blunt.

PIST. *Germs* numerous, ovate, collected into an ovate head. *Styles* very ſhort. *Stigmas* broadiſh, compreſſed.

PER. *Berry* compounded of oblong acini, or grannulations.

SEEDS ſolitary, oblong.

ESSENTIAL CHARACTER.

Cal. none. *Pet.* three. *Nect.* none. *Berry* compoſed of one-ſeeded acini, or grannulations.

SPECIES.

1. Hydraſtis canadenſis. *Canadian Yellow-root.*
Lin. ſpec. 784. *Reich.* 2. 674.]
Warnera canadenſis. *Mill. dict.*—*fig.* 190. *t.* 285.
Hydrophyllum verum canadenſium. *Lin. ſpec. ed.* 1. 146.

DESCRIPTION, &c.

The root is compoſed of thick fleſhy tubers, of a deep yellow colour within, but covered by a brown ſkin, ſending out fibres from ſeveral parts in the ſpring. It ſends up one or two ſtalks about nine inches high, at their firſt appearance of a light green, but afterwards changing to a purpliſh colour, and hairy towards the top. Each ſtalk has one or two leaves, the lower petioled, but the upper embracing; they are ſix or ſeven inches in diameter, and are deeply cut into three, four, or five lobes, which are irregularly ſerrate; they are of a light green in the ſpring, but change afterwards to a deep green, with ſome dark ſpots or marks, and after the flower is decayed turn to a purpliſh colour. The ſtalk is terminated by one flower, which is white, and of very ſhort duration, ſeldom continuing above three or four hours after it is expanded. The fruit is red and ſucculent; [a compound berry like the Raſpberry and Mulberry; not at all like the Strawberry in ſtructure.

According to Linneus, this plant reſembles the Hydrophyllum. Leaves on each ſtalk two, petioled, emarginate at the baſe, palmate, ſerrate, the lobes having a ſmall lobe on each ſide of them.

Juſſieu ſays it has the fruit and habit of a Rubus, and is allied to Podophyllum.

Native of Canada. It was cultivated in 1759, by Mr. Miller, and flowers in may and june[n].]

PROPAGATION AND CULTURE.

This plant not increaſing much, is rather uncommon in the Engliſh gardens; it delights in great ſhade and moiſture; and when planted in dry ground, or much expoſed to the ſun, it rarely lives through one ſummer. In a moiſt loamy ſoil and ſhady ſituation, if it be left undiſturbed three or four years, it will flouriſh.

[HYDROCERATOPHYLLUM. See *Ceratophyllum.*

HYDROCHĂRIS. *From* Υδωϱ *water, and* χαρις *grace: The grace or beauty of the water.*)

Lin. gen. n. 1126. *Schreb. n.* 1535. *Juſſ.* 67.
Stratiotes. *Dill. gen.* 9.
Morſus Ranæ. *Tournef. mem. acad.* 1705. *t.* 4.
Microleuconymphæa. *Boerh.* 232.

Claſſ. 22. 8. Dioecia Enneandria.

Nat. order of *Palmæ: Hydrocharides*, Juſſ.

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[k] Hort. kew.

[l] Walter,

[m] Smith.

[n] Hort. kew.

GENERIC CHARACTER.

Male.

Cal. *Spathe* three-flowered, two-leaved, oblong.
Perianth proper, three-leaved: *leaflets* ovate-oblong, concave, membranaceous at the edge.
Cor. *Petals* three, roundiſh, flat, large.
Stam. *Filaments* nine, awl-ſhaped, upright, in three rows, the middle one puts forth an awl-ſhaped ſtipe from the inner baſe, like a ſtyle, which is placed in the centre; the two others are connected at the baſe, ſo that each inner filament coheres with each outer. *Anthers* ſimple.
Pist. The rudiment of a germ in the centre.

Female.

Cal. *Spathe* none; flowers ſolitary.
Perianth as in the male, ſuperior.
Cor. as in the male.
Pist. *Germ* roundiſh, inferior. *Styles* ſix, the length of the calyx, compreſſed, bifid-channelled. *Stigmas* bifid, acuminate.
Per. *Capſule* coriaceous, roundiſh, ſix-celled.
Seeds numerous, very ſmall, roundiſh.

ESSENTIAL CHARACTER.

Male. *Spathe* two-leaved. *Cal.* trifid. *Cor.* three-petalled. *Filam.* the three inner ſtyle-bearing.
Fem. *Cal.* trifid. *Cor.* three-petalled. *Styles* ſix. *Capſ.* ſix-celled, many-ſeeded, inferior.

SPECIES.

1. Hydrocharis Morſus ranæ. *Frog-bit.*
Lin. ſpec. 1466. *Reich.* 4. 267. *hort. cliff.* 460. *fl. ſuec. n.* 914. *Hudſ. angl.* 436. *Wither. arr.* 1127. *ed.* 3. 394. *Curt. lond.* 3. 64. 167. *Lightf. ſcot.* 622. *Relh. cant. n.* 732. *Hall. helv. n.* 1068. *Pollich pal. n.* 933. *Villars dauph.* 3. 528. *Fl. dan. t.* 878.
Nymphæa alba minima. *Bauh. pin.* 193. *Raii hiſt.* 1320,—ſ. Morſus ranæ. *Park. theat.* 1252. 4.
N. minor ſ. Morſus ranæ. *Bauh. hiſt.* 3. 773. 1.
Morſus ranæ. *Dod. pemp.* 583. 1. *cereal.* 228. *Lob. ic.* 1. 596. 1. *Ger. emac.* 818. 2.
Stratiotes foliis aſari, ſemine rotundo. *Raii ſyn.* 290.
β. Morſus ranæ flore pleno odoratiſſimo. *Raii cant.* 101.
γ. Nymphæa alba minor. *Bauh. pin.* 193.

DESCRIPTION, &c.

Root of many long, thick, white fibres. Leaves at each joint of the ſtalk, ſix or eight together, floating, roundiſh, kidney-ſhaped, fleſhy, ſmooth, thick, perfectly entire, almoſt tranſparent, reddiſh underneath, marked with a few circular, and many tranſverſe veins; they are about an inch and half in diameter, and when dry, on removing the outer ſkin, a moſt beautiful cloſe net-work of veins is ſeen. Leafſtalks from three to ſix or ſeven inches long, round, ſmooth, thick, tranſparent, having numerous croſs bars. Sheaths in plants of both ſexes numerous, next the root, ovate, tranſparent; in the male plant there is alſo a pair about the middle of the flower-ſtalk, containing the tender unopened bloſſoms as in a bladder. Flower-ſtalks the ſame length with the leaf-ſtalks, upright; in the male producing three or four flowers, in the female only one. Corolla white, with a yellow bottom, a little wrinkled and tender. Calyx yellowiſh. Stamens ſometimes more than nine, as far as twelve. Anthers almoſt linear, two-celled. The nectary conſiſts of three yellow glands, crowning the germ.

This plant increaſes by runners, furniſhed with pendulous gems, ſupported on long foot-ſtalks. Theſe gems conſiſt of two ſtipulaceous ſcales, folded together, within which are curiouſly enveloped the embryo leaves of the future plant.

Native of many parts of Europe, in deep ditches, and ſlow ſtreams, with a muddy bottom, multiplying itſelf greatly by runners which ſhoot out to a great length, and at the joints drop down long roots, which penetrate deep into the mud. It flowers from june through the autumn[o].

β. Ray found it with a double flower ſmelling very ſweet, in a ditch by the ſide of Audrey cauſeway, cloſe by the great wooden bridge, in the iſle of Ely, plentifully[p].]

HYDROCOTYLE. (*From* Υδωρ, *water, and* κοτυλη, *a ſmall cavity, veſſel or cup. Becauſe it grows in water, and the leaves are hollow; or the leaves being hollow contain water.*)
[*Lin. gen. n.* 325. *Schreb. n.* 457. *Tournef.* 173. *Gærtn. t.* 22. *Juſſ.* 226.
Claſſ. 5. 2. Pentandria Digynia.
Nat. order of *Umcellatæ* or *Umbelliferæ*.

GENERIC CHARACTER.

Cal. *Umbel* ſimple.
Involucre commonly four-leaved, ſmall.
Perianth ſcarcely any.
Cor. *univerſal* uniform in figure, not in ſituation: *Florets* all fertile.
Proper five-petalled: *Petals* ovate, acute, ſpreading, entire.
Stam. *Filaments* five, awl-ſhaped, ſhorter than the corolla. *Anthers* very ſmall.
Pist. *Germ* upright, compreſſed, orbiculate, inferior, peltate. *Styles* two, awl-ſhaped, very ſhort. *Stigmas* ſimple.
Per. none. *Fruit* orbiculate, compreſſed, tranſverſely bipartile.
Seeds two, ſemiorbiculate, compreſſed.

ESSENTIAL CHARACTER.

Umbel ſimple, with a four-leaved involucre. *Pet.* entire. *Seeds* ſemiorbiculate-compreſſed.

SPECIES.

1. Hydrocotyle vulgaris. *Common Marſh Pennywort.*
Lin. ſpec. 338. *ſyſt.* 271. *Reich.* 1. 651. *hort. cliff.* 88. *fl. ſuec. n.* 234. *Crantz. umb.* 119. *Hudſ. angl.* 110. *Wither. arr.* 265. *ed.* 3. 284. *Curt. lond. n.* 63. *Relh. cant. n.* 207. *Hall. helv. n.* 812. *Pollich pal. n.* 264. *Fl. dan. t.* 90. *Krock. ſileſ. n.* 396. *Villars dauph.* 2. 661. *Tourn. inſt.* 328. *Raii ſyn.* 322.
Cotyledon aquatica. *Bauh. hiſt.* *Lob. ic.* 387. *Dod. pempt.* 133. 1. *Raii hiſt.* 1323. *Petiv. brit. t.* 6. *f.* 12.—acris ſeptentrionalium. *Lob. obſ.* 209. 4.—paluſtris. *Ger.* 424. 3. *emac.* 529. 5. *Park. theat.* 1214.
Ranunculus aquaticus Cotyledonis folio. *Bauh. pin.* 180.
β. Hydrocotyle natans. *Cyrill. neap.* 1. 20. *t.* 6. *f.* 2. *Col. ecphr.* 1. 315. *t.* 316.
Leaves peltate, crenate, umbels five-flowered.
2. Hydrocotyle umbellata.
Lin. ſpec. 338. *ſyſt.* 271. *Reich.* 1. 651. *Swartz obſ.* 111. *Brown. jam.* 185. *Gron. virg.* 30. *Plum. ſpec.* 7. *Lour. cochinch.* 177.
Cotyledon aquatica. *Sloan. jam.* 1. 212.
Erva de capitaon. *Marcgr. braſ.* 27. *Raii hiſt.* 1323. 2.
Acaricoba. *Piſ. braſ.* 90.
Leaves peltate crenate-gaſhed, umbels many-flowered.
3. Hydrocotyle americana.
Lin. ſpec. 338. *ſyſt.* 271. *Reich.* 1. 651. *Loefl. itin.* 281.
Leaves kidney-form ſublobate crenate.
4. Hydrocotyle hirſuta.
Swartz prodr. 54.
Hirſute, leaves kidney-form lobate crenate, whorls four-flowered.
5. Hydrocotyle aſiatica.
Lin. ſpec. 338. *ſyſt.* 272. *Reich.* 1. 652. *hort. cliff.* 88. *fl. zeyl. n.* 118. *Gærtn. fruct.* 1. 95. *Thunb. jap.* 116. *prodr. cap.* 49. *Herm. par. t.* 238. (Valerianella). *Pluk. phyt. t.* 106. *f.* 5. (Ranunculo affinis).
Pes equinus. *Rumph. amb.* 5. 455. *t.* 169. *f.* 1.
Codagam. *Rheed. mal.* 10. 91. *t.* 46.
Leaves kidney-form toothletted.
6. Hydrocotyle chinenſis.
Lin. ſpec. 339. *Reich.* 1. 652.
Leaves linear, umbels many-flowered.
7. Hydrocotyle villoſa.
Lin. ſyſt. 272. *ſuppl.* 175. *Thunb. prodr. cap.* 49.

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[o] Curtis, Lightf. Woodw. in With. Pollich, Linn. ſuec.

[p] Ray cant.

Centella villoſa. *Lin. ſpec.* 1393. *ſyſt. ed.* 13. 708.
Reich. 4. 123. *amœn.* 6. 112.
Mercurialis afra. *Lin. ſyſt. ed.* 13. 746.
Leaves cordate entire villoſe.

8. Hydrocotyle glabra.
Lin. ſyſt. 272. *ſuppl.* 176. *Thunb. prodr. cap.* 49.
Centella glabrata. *Lin. ſpec.* 1393. *ſyſt. ed.* 13. 708.
Reich. 4. 124. *amœn.* 6. 112.
Leaves obovate ſmooth.

9. Hydrocotyle virgata.
Lin. ſyſt. 272. *ſuppl.* 176. *Thunb. prodr. cap.* 49.
Leaves linear ſmooth.

10. Hydrocotyle linifolia.
Lin. ſyſt. 272. *ſuppl.* 176. *Thunb. prodr. cap.* 49.
Leaves linear-lanceolate hirſute entire.

11. Hydrocotyle tomentoſa.
Thunb. prodr. cap. 49.
H. Solandra. *Lin. ſyſt.* 272. *ſuppl.* 176. *Gærtn. fruct.* 1. 96.
Solandra capenſis. *Lin. ſpec.* 1407. *ſyſt. ed.* 13. 767.
Reich. 4. 336.
Leaves obovate toothed tomentoſe.

12. Hydrocotyle tridentata.
Lin. ſyſt. 272. *ſuppl.* 176. *Thunb. prodr. cap.* 49.
Leaves wedge-ſhaped trifid villoſe.

13. Hydrocotyle Ranunculoides.
Lin. ſyſt. 272. *ſuppl.* 177.
Leaves five-parted gaſhed.

14. Hydrocotyle erecta.
Lin. ſyſt. 272. *ſuppl.* 177.
Leaves cordate crenate, ſcapes few-flowered the length of the petioles.

15. Hydrocotyle moſchata.
Forſt. flor. auſtral. n. 135.
Leaves kidney-form ſeven-lobed ſerrate villoſe, umbels many-flowered.

DESCRIPTIONS, *&c.*

1. Roots perennial, capillary, whitiſh. Stems creeping, round, ſmooth, ſtriking root at the joints. Leaves orbicular, ſmooth, gloſſy, bright green, about an inch in diameter, waved, ſcalloped or ſomewhat lobed and notched on the edge, the centre a little depreſſed, and marked with a white dot; the veins form a kind of net-work on both ſurfaces. Leaf-ſtalks about two inches long, upright, round, ſmooth, naked below, above beſet with briſtly, horizontal, diſtant hairs. Common peduncles ſingle, axillary, from the baſe of the leaf-ſtalks, little more than an inch in length, upright, round, ſlender, naked or ſlightly hairy, terminated by two umbels or glomerules, one ſpringing out of the other, each containing from four or five to ſix and nine florets, which are very ſmall, reddiſh white or roſe-colour, on very ſhort pedicels. There are two roundiſh, membranous white ſtipules at the baſe of each peduncle, and a very minute narrow tapering leaflet is placed under each floret. Seeds of a pale brown colour[a]. Linneus remarks, that this plant has a ſimple umbel proliferous from the centre, and the two ſtyles diſtant.

Native of moſt parts of Europe in marſhes, alſo in Japan, and Jamaica, but not common. It flowers with us from may or june through july and auguſt. The flowers being very ſmall, and hidden by the leaves, are not much remarked, though they are abundant in their ſeaſon; but the plant is eaſily known by the petiole of the leaf being inſerted into the middle of it, a circumſtance uncommon in European plants.

Gerarde calls this plant Water Penny-woort, Sheep-killing Penny-graſſe, Penny-rot; in the north country, he ſays, it is called White-rot, to diſtinguiſh it from the Red-rot or Droſera; in Norfolk Flowkwoort (from its being ſuppoſed to occaſion the Flukes in the liver of rotten ſheep:) and by the huſbandmen Sheep's-bane, becauſe it killeth ſheep that do eat thereof. This however is a vulgar error; for the rot in ſheep is owing to their feeding in wet grounds; and perhaps to an inſect (Faſciola hepatica) which from its ſhape is called a Fluke (or Flounder), and abounds in ſuch ſituations, adhering to ſtones and plants, as well as in the livers and biliary ducts of ſheep affected with the rot. This plant, together with Droſera or Sundew, and Pinguicula or Butterwort, is common in marſhy places, and therefore the diſorder has been aſcribed to theſe; but it is pretty certain that neither ſheep nor any other quadruped feed on theſe plants.

In German it is called *Waſſernabel, Sumpfnabel.* In Dutch, *Waternavel.* In French, *Hydrocotle commune, le Goblet, l'Ecuelle d'eau, l'herbe des Patagons.* In Spaniſh, *Sombrera de agua.*

β. The Italian floating Hydrocotyle has very ſlender ſimple fibres collected into a head, iſſuing from the joints of the ſtems, and faſtening themſelves into the mud. Stems horizontal, thick, even, fleſhy, tinged with browniſh red, horizontal, jointed, floating. A ſingle leaf comes out from each joint, on petioles a ſpan long or more, curved inwards, thick at the baſe, fleſhy, growing thinner at the top; the leaves are kidney-form, crenate-lobed or repand, with five large lobes, the middle one ſmall, the two or three others with three-lobed notches; in front they are cut to the very centre with a ſcarcely gaping ſinus, as in H. americana. All of them are floating. Flowers from five to ten, ſmall, collected into a head. Seeds compreſſed, ſemiorbiculate. The peduncles are three inches long, and iſſue from the joints of the ſtem.

The leaves are not peltate and emarginate, as in the common ſort, but kidney-form and ſublobate, the ſtems thick, and the petioles very fleſhy. It ſeems to approach nearer to H. americana[b].

Native of Italy.

2. Roots filiform, capillary, branched, whitiſh. Leaves radical, peltate, orbiculate, crenate-gaſhed, ſmooth, veined, on ſmooth round petioles, from two to five inches, and often in watery places a foot long. Peduncles alſo radical, the length of the petioles, round. Flowers in umbels, hermaphrodite. Involucre ſcaly, with ovate minute leaflets. Umbel ſimple; pedicels numerous, erect, one-flowered. Corolla acute, reflex, white. Styles contiguous at the baſe, the length of the petals. Fruit roundiſh, compreſſed, ſtriated[c].

According to Linneus it is very like the common ſort, and has been confounded with it; but it differs in having the ſcape twice as long as the leaves, and more than twenty florets in a ſimple umbel.

Native of Jamaica, in marſhes, of ſeveral parts of the continent of America, and alſo of Cochinchina; if the plant which theſe authors deſcribe be the ſame.

3. This has the appearance and ſize of the firſt. The leaves are cut in front to the very centre with a ſinus that ſcarcely gapes, and are divided at the edge into nine obſolete lobes, each of which has three ſmaller notches. Umbel five-flowered[d]. This deſcription ſeems to accord with Columna's plant, (1. β.) and that may perhaps be the ſame with this, or a variety of it.

Native both of North and South America, and the Eaſt Indies.

4. Native of Hiſpaniola[e].

5. This differs from the fourth ſpecies in having the toothlets or notches round the leaves equal, the ſubſtance alſo of the leaves is twice as thick, and they are almoſt hoary, and there are ſeveral together at each joint of the ſtalk, whereas in that they are ſingle[f].

Native of the Eaſt Indies, Japan, the Cape of Good Hope, Jamaica, &c. Introduced here in 1774, by Mr. Francis Maſſon[g].

6. This is of the ſame ſize with the foregoing ſorts. Stem creeping. Leaves even, blunt, flat, often two at a joint. Scapes the length of the leaf. Umbel many-flowered.—Native of China[h].

7. Root fibrous. Leaves petioled, undivided, quite entire, reſembling thoſe of the ſweet Violet (Viola odorata), mucronate, tomentoſe, both at the roots, and about the extremities of the ſtems, which are proſtrate, and have flowers at the ends with the leaves. Peduncles ſeveral, filiform, ſhorter than the leaves, one-flowered. Flowers ſmall.—Native of the Cape of Good Hope.

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[a] Curtis, Withering.

[b] Cyrillo. [c] Swartz. [d] Linn. ſpec. [e] Swartz. [f] Linn. ſpec. [g] Hort. kew. [h] Linn. ſpec.

8. Stems creeping. Leaves alternate, three-nerved, quite entire, acute, petioled: ſtipules linear, acuminate, flowers axillary, peduncled.—This alſo is a native of the Cape of Good Hope.

9. Found at the Cape of Good Hope by Thunberg[i]. Of this we have no deſcription.

10. This is like the preceding, but the leaves are much longer; the peduncles more ſlender and alſo longer.—Found at the Cape of Good Hope by Thunberg[k].

11. Root cauleſcent, branched on the ſurface of the earth. The whole plant hoary tomentoſe. Stems an inch long, ſcarcely branched. Leaves alternate, petioled, gaſhed and ſeven-toothed. Peduncles lateral next the lower leaves, and of the ſame length with them. Receptacles of the flowers very dark purple. Petals white[l].

The central flower being fertile (having ſix ſtamens and a piſtil), and being ſurrounded by barren flowers, Linneus made a diſtinct genus of it, placed it in the order Monoecia of the claſs Polygamia, and named it *Solandra*, from the amiable and learned D. C. Solander, L. L. D., who found it at the Cape of Good Hope; in the Supplement, however, and in the 14th edition of the Syſtema it is removed into this genus, with which it certainly agrees in habit. Gærtner thus deſcribes the fructification: Umbel pedicelled. Involucre four-leaved, linear, the length of the fruit, tomentoſe on the outſide. Florets four or ſix, barren, peduncled in the circuit, and a ſingle one in the centre becoming a ſeſſile fruit; which is ovate, gibbous, compreſſed on the ſide, twin, whitiſh. Seeds ſemiovate, turgidly lenticular, with five ſharp ribs, and in the intervals between theſe netted with tranſverſe nerves.

12. This is very like the preceding, but differs in having linear leaves, narrower towards the baſe, with three equal teeth at the end; not ovate and five or ſeven-toothed, as in that; peduncles much ſhorter than the leaf, not equal in length; ſtem ſhorter, woolly, herbaceous, not woody and proſtrate. The central is certainly hermaphrodite in this.—Found at the Cape of Good Hope by Sparrmann[n].

13. Stem creeping, jointed. Leaves ſolitary or two together; the diviſions three-lobed and blunt, as in Ranunculus. Petioles frequently the length of the finger. Scapes cauline, an inch long. Umbel ſimple. Petals white.—Found in Mexico by Mutis.

14. Leaves ſharply toothed on the ſides, an inch in length; petioles radical, a ſpan long, hairy at the top. Scapes radical, the length of the plant, erect as is the whole plant, not creeping, and having a few flowers at the top.—Native of Jamaica[n].

15. Native of New Zealand[o].

HYDROLĔA.

Lin. gen. n. 318. *Schreb. n.* 445. *Loefl.* 310. *Aubl.* 110. *Gærtn. t.* 55. *Juſſ.* 134.
Claſſ. 5. 2. Pentandria Digynia.
Nat. order of *Convolvuli*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* five-parted: *parts* oblong, acute, unequal, permanent.

Cor. one-petalled, wheel-bell-ſhaped. *Tube* ſhorter than the calyx. *Limb* five-parted, ſpreading; *ſegments* ovate, incumbent.

Stam. *Filaments* five, awl-ſhaped, cordate at the baſe. *Anthers* oblong, curved, incumbent.

Pist. *Germ* ovate. *Styles* two, filiform, ſpreading. *Stigmas* truncate.

Per. *Capſule* ovate, two-celled, two-valved: *partition* contrary.

Seeds very many, minute, imbricated: with an ovate large *Receptacle*.

Obs. *In ſome flowers the calyx and corolla are ſix-cleft, with ſix ſtamens.* Aubl.

ESSENTIAL CHARACTER.

Cal. five-leaved. *Cor.* wheel-ſhaped. *Filam.* cordate at the baſe. *Capſ.* two-celled, two-valved.

SPECIES.

1. Hydrolea ſpinoſa.
Lin. ſpec. 328. *Reich.* 1. 633. *Gærtn. fruct.* 1. 263.
Planta lacuſtris ſ. paluſtris ſpinoſa. *Loefl. itin.* 310.
Stem with axillary ſpines, flowers cluſtered terminating.

2. Hydrolea inermis.
Lour. cochinch. 272.
Stem unarmed, flowers ſolitary lateral.

3. Hydrolea zeylanica.
Vahl ſymb. 2. 46.
Nama zeylanica. *Lin. ſyſt.* 265. *ſpec.* 327. *Reich.* 1. 633. *fl. zeyl. n.* 117. *t.* 2. *amœn.* 1. 395.
Steris javana. *Lin. mant.* 54. *ſyſt.* 264.
S. aquatica. *Burm. ind.* 73. *t.* 39. *f.* 3.
Tsjeru-vallel. *Rheed. mal.* 10. 55. *t.* 28.
Alſine veronicæ affinis, &c. *Pluk. phyt. t.* 130. *f.* 2. *Raii app.* 498.
Stem unarmed, flowers ſubracemed, leaves lanceolate.

4. Hydrolea trigyna.
Swartz prodr. 54.
Campanula americana ſpinoſa & hirſuta, flore patulo & ſeſſili cæruleo. *Houſt. Mſs.*
Stem ſpiny, leaves oblong hirſute, flowers three-ſtyled axillary.

DESCRIPTIONS, &c.

1. Stems upright, a foot high, with alternate branches. Leaves lanceolate, ſeſſile, ſomewhat waved, viſcid. Spines axillary, ſpreading. Flowers terminating, ſubſeſſile, few, cluſtered[p]. Capſule acuminate, with a groove on each ſide, membranaceous, very thin, ſubdiaphanous. Partition ſimple, very narrow. Receptacle very large, fungoſe, hollowed with a groove into which the partition is inſerted, divided as it were into two hemiſpheres. Seeds ovate, attenuated towards the umbilicus, very obſcurely grooved, pale browniſh red[q]. When the flowers are ſix-cleft and have ſix ſtamens, there are three ſtyles, and the capſule is three-celled and three-valved, with a three-ſided partition[r].

Native of South America.

2. Stem herbaceous, annual, one foot high, upright, almoſt ſimple. Leaves lanceolate-linear, quite entire, ſmooth, ſeſſile, ſcattered. Flowers blue, on one-flowered peduncles. Calyx inferior. Corolla bell-ſhaped, with a ſhort tube, the ſegments nearly equal to the calyx. Filaments placed on the tube, ſhorter than the limb. Styles upright, ſhorter than the ſtamens. Seeds roundiſh, ſurrounding two ovate columns, adhering to the bottom of the capſule, free at top, as in Gentiana. The corolla is not properly wheel-ſhaped, but wheel-bell-ſhaped.

Native of Canton in China, in moiſt places.

3. Stem herbaceous, half a foot high, even, upright, branched. Leaves lanceolate, alternate, petioled, ſmooth, quite entire, ſpreading. Racemes erect, one from each axil of the leaves, ſimple, erect, the length of the leaves. Flowers alternate, on pedicels the length of the flowers[s].

It is thus deſcribed under the name of *Steris* in the firſt Mantiſſa: Appearance that of a ſmall Capſicum. Stem herbaceous, very much branched and even. Leaves alternate, petioled, oval-oblong, quite entire, ſharpiſh, even. Peduncles oppoſite to the leaves, axillary or terminating, ſubdivided or one-flowered. Corolla blue, the ſame ſize as that of Capſicum.

Native of the Eaſt Indies.

4. Native of the Weſt Indies[t].

Hydrophace. See *Lemna*.

HYDROPHY̆LAX. (*From* Ὑδωρ *water, and* φυλαξ *a keeper or guardian.*)

Lin. gen. Schreb. n. 159. *ſuppl.* 14. *Juſſ.* 210. Sariſſus. *Gærtn. t.* 25.
Claſſ. 4. 1. Tetrandria Monogynia.
Nat. order of *Rubiaceæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, upright, four-parted, ſuperior, permanent: *ſegments* ovate, acute, margined, ſomewhat fleſhy.

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[i] Linn. ſuppl.
[k] Ibid.
[l] Linn. ſpec.
[m] Linn. ſuppl.
[n] Ibid.
[o] Forſter.
[p] Linn. ſpec.
[q] Gærtner.
[r] Juſſieu.
[s] Linn. zeyl.
[t] Swartz.

Cor. one-petalled, funnel-form: *tube* longer than the calyx: *limb* angular, four-cleft; ſegments ovate, revolute: *throat* bearded.

Stam. *Filaments* four, placed on the tube, decurrent, upright, longer than the corolla. *Anthers* ſubhaſtate.

Pist. *Germ* oblong, inferior. *Style* filiform, curved. *Stigma* bifid.

Per. *Berry* juiceleſs, ovate, compreſſed, with three ribs on each ſide, the middle one higher, with an attenuated margin, a little bowed in, fungous, two-celled; with a tranſverſe partition.

Seeds ſolitary, oblong, bowed in a little, three-ſided, two-grooved on the inner ſide, ſomewhat rugged.

ESSENTIAL CHARACTER.

Cal. four-parted. *Cor.* funnel-form. *Fruit* ancipital, one-ſeeded.

SPECIES.

1. Hydrophylax maritima.
Lin. ſyſt. 160. *ſuppl.* 126.

DESCRIPTION, &c.

It has the appearance of Arenaria rubra maritima, but is larger. Root ſimple, filiform, blood-red, long, fleſhy, ſweet. Stem creeping, filiform, ſmooth, coloured, jointed, ſheathed with blunt membranaceous permanent ſheaths, very long. Leaves oppoſite, ſpreading, ovate, acute, quite entire, approximating, fleſhy, ſhining, roughened with very ſmall, whitiſh, pellucid calluſes; petioles ſhort, membranaceous, margined, ſheathing the ſtem, permanent; when the leaves fall theſe become permanent ſheaths of the ſtalks; flowers axillary, ſubſeſſile, uſually two together, but not oppoſite, erect; corolla pale blue; anthers blue.—Found by Koenig in driving ſand on the ſea ſhore near Guduluhr in the Eaſt Indies [a].]

HYDROPHYLLUM. (*From* Υδωϱ, *water, and* φυλλον, *a leaf.*)
Lin. gen. n. 204. *Schreb. n.* 267. *Tournef.* 16. *Juſſ.* 129. *Gærtn. t.* 110.
Claſſ. 5. 1. Pentandria Monogynia.
Nat. order of *Borragineæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* five-parted, ſcarcely ſhorter than the corolla, ſpreading, permanent, with awl-ſhaped ſegments.

Cor. one-petalled, bell-ſhaped, five-cleft; ſegments upright, obtuſe, emarginate.

Nectary, a cleft cloſed by two longitudinal converging plates, faſtened to the petal within the middle of each ſegment.

Stam. *Filaments* five, awl-ſhaped, longer than the corolla. *Anthers* incumbent, oblong.

Pist. *Germ* ſuperior, ovate, acuminate. *Style* awl-ſhaped, the length of the ſtamens. *Stigma* bifid, acute, ſpreading.

Per. *Capſule* globular, one-celled, two-valved.

Seed ſingle, round, large. (Seeds four, neſtling within a berried receptacle. *G.*)

ESSENTIAL CHARACTER.

Cor. bell-ſhaped, having five longitudinal melliferous ſtreaks on the inſide. *Stigma* bifid. *Capſ.* globular, two-valved.

SPECIES.

1. Hydrophyllum virginicum. *Virginian Water-leaf.*
Lin. ſpec. 208. *ſyſt.* 195. *Reich.* 1. 417. *hort. cliff.* 44. *Gærtn. fruct.* 2. 133. *Gron. virg.* 21. *Sabb. hort.* 1. *t.* 15.
Dentariæ facie planta monopetalos, fructu rotundo monopyreno. *Mor. hiſt.* 5. 599. *ſ.* 15. *t.* 1.
D. affinis. Echii flore, capſula Anagallidis. *Dod. mem. t.* 77. *Raii hiſt.* 1346.
Leaves pinnatifid.

[2. Hydrophyllum canadenſe. *Canadian Water-leaf.*
Lin. ſpec. 208. *Reich.* 1. 417.
Leaves lobate-angular.]

DESCRIPTIONS, &c.

1. The root is compoſed of many ſtrong fleſhy fibres, which ſpread wide on every ſide: from this ariſe many leaves on foot-ſtalks five or ſix inches long, jagged into three, five or ſeven lobes, almoſt to the midrib; they are indented on their edges, have ſeveral veins running from the midrib to the ſides, and are of a lucid green. The flowers riſe with foot-ſtalks from the root, having one or two ſmall leaves of the ſame ſhape with the lower; they are in looſe cluſters hanging down, of a dirty white, and making no great figure. [Capſule marked on each ſide with a ſhallow groove, and ſprinkled all over with ſmall white briſtles. Receptacle globular, free, filling the whole cavity of the capſule, at firſt herbaceous and fleſhy, divided into little cells equal in number with the naſcent germs, afterwards membranaceous and ſpongy, rufeſcent, ſplitting in two with the capſule. Seeds regularly four, but often fewer, neſtling in the receptacle, irregularly ovate and angular, elegantly netted with very minute excavations, yellowiſh white [b]. It flowers here in may and june, and the ſeeds ſometimes ripen in auguſt.

Native of Virginia and Carolina, on moiſt ſpongy ground. It was cultivated in 1739, by Mr. Miller [c].] He ſuppoſes that Morinus gave it the title of Water-leaf, becauſe in ſpring water ſtands in the cavities of the leaf, and not from its growing in water, as Tournefort conjectures.

[2. This has all the ſame ſtructure with the preceding, and differs only in the leaves, which have the ſame ſhape with thoſe of the Acer or Maple, half-five-lobed, ſmooth, with the lobes acute, ſlightly toothed, and having a ſinus at the petiole, as in the leaves of Maple.

Native of Canada [d]. Cultivated by Mr. Miller in 1759. It flowers in may [e].]

PROPAGATION AND CULTURE.

Theſe plants are very hardy in reſpect to cold, but they ſhould be planted in a moiſt rich ſoil and ſhady ſituation: in a warm dry ſoil they will not proſper, unleſs they be conſtantly watered in dry weather. They may be increaſed by parting the roots in autumn; for if they are not well rooted before ſpring, they will require abundance of water.

[Hydrophyllum. See *Hydraſtis.*

Hydropiper. See *Elatine* and *Polygonum.*]

HYMENÆA. (*From Hymen the god of marriage.*)
Lin. gen. n. 512. *Schreb. n.* 698. *Juſſ.* 351.
Courbaril. *Plum.* 36.
Claſſ. 10. 1. Decandria Monogynia.
Nat. order of *Lomentaceæ. Leguminoſæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, coriaceous: *tube* ſhort, turbinate, compreſſed, permanent, with an oblique mouth: *limb* five-parted, almoſt regular, upright, deciduous; ſegments ovate, blunt; two oppoſite flattiſh, a little broader; two others concave, with one ſide narrower.

Cor. five-petalled, inſerted into the neck of the calyx, ſubpapilionaceous, with the petals almoſt equal. *Banner*, the two uppermoſt petals, obliquely ovate, obtuſe, ſeſſile, at the upper concave ſegment of the calyx. *Wings*, two petals, ſimilar, lateral, a little narrower. *Keel*, the loweſt petal, channelled and excavated, approximating to the wings, within the lower hollow ſegment of the calyx.

Stam. *Filaments* ten, diſtinct, awl-ſhaped, erect, bent down above the middle, very long, between the keel and the wings, inſerted into the neck of the calyx. *Anthers* linear, fixed by the back.

Pist. *Germ* ſabre-ſhaped, compreſſed, pedicelled. *Style* very long, briſtle-ſhaped, bent down. *Stigma* thickened, obliquely truncate.

Per. *Legume* woody, very large, ovate-oblong, obtuſe, one-celled, filled with farinaceous pulp.

Seeds ſeveral, (four to eight, large) ovate, wrapped up in pollen and fibres.

ESSENTIAL CHARACTER.

Cal. five-parted. *Pet.* five, almoſt equal. *Style* twiſted inwards. *Legume* filled with farinaceous pulp.

SPECIES.

1. Hymenæa Courbaril. *Locuſt Tree.*
Lin. ſpec. 537. *ſyſt.* 392. *Reich.* 2. 248. *hort. cliff.* 484. *upſ.* 305. *mat. med.* 510. *Gærtn. fruct.* 2. 305. *Brown. jam.* 221. *Jacqu. amer. pict.* 63. *t.* 264. *f.* 65.

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[a] Linn ſuppl.

[b] Gærtner.

[c] Hort. kew.

[d] Linn. ſpec.

[e] Hort. kew.

Courbaril bifolia, fructu pyramidato. *Plum. gen.* 49.
Ceratia diphyllos, &c. *Pluk. phyt. t.* 82. *f.* 2.
Jetaiba. *Marcgr. braſ.* 101. *l.* 3. *c.* 5. *Piſ. braſ.* 60. *l.* 4. *c.* 8.
Arbor ſiliquoſa ex qua Gummi Anime. *Bauh. pin.* 404. *Raii hiſt.* 1760.

DESCRIPTION, &c.

This is a very large ſpreading tree in the Weſt Indies, where it grows in great plenty; it has a large ſtem, covered with a ruſſet bark, which divides into many ſpreading branches, garniſhed with ſmooth ſtiff leaves, which ſtand by pairs, their baſe joining at the foot-ſtalk, to which they ſtand oblique, one ſide being much broader than the other, the two outer ſides being rounded, and their inſide ſtraight, ſo that they reſemble a pair of ſheep-ſhears; they are pointed at the top, and ſtand alternately on the ſtalk. The flowers are produced in looſe ſpikes at the end of the branches, ſome of the ſhort ligneous foot-ſtalks ſupporting two, and others three flowers, which are compoſed of five yellow petals ſtriped with purple; the petals are ſhort and ſpread open; the ſtamina are much longer, and of a purpliſh colour; theſe flowers are ſucceeded by thick, fleſhy, brown pods, ſhaped like thoſe of the Garden Bean; they are ſix inches long, and two inches and a half broad, of a purpliſh brown colour, and a ligneous conſiſtence, with a large ſuture on both edges; they contain three or four roundiſh compreſſed ſeeds, divided by tranſverſe partitions, [and incloſed in a whitiſh ſubſtance of fine filaments, as ſweet as honey. The Indians eat this ſubſtance with great avidity, though it is apt to purge when freſh gathered; but it loſes this quality as it grows old.

Between the principal roots of the tree exudes a fine tranſparent reſin, yellowiſh or red, which is collected in large lumps, is called gum *Anime*, and makes the fineſt varniſh that is known, ſuperior even to the Chineſe *lacca:* for this latter uſe it is diſſolved in the higheſt rectified ſpirits of wine. It burns readily, and with a clear flame, emitting a grateful and fragrant ſmell, for which reaſon it is ſometimes ordered by way of fumigation in the chambers of perſons labouring with aſthmas or ſuffocative catarrhs. Its vapours not only ſtrengthen the head, but all parts of the body affected with cold. Some apply it outwardly, diſſolved in oil or ſpirits of wine, to ſtrengthen the nerves. An oil may be diſtilled from it, prevalent in palſies, cramps and contractions of the ſinews. The ſolution in ſpirits has been thought not inferior to Guaiacum in venereal caſes. A decoction of the leaves expels flatulencies, and gives eaſe in colichy pains, by gently opening the bowels; and the inward bark is an excellent vermifuge in ſubſtance or decoction.

The wild bees are fond of building their neſts in this tree, which grows to a conſiderable ſize, and is looked upon as excellent timber; but it muſt be very old before it is cut, otherwiſe the heart will be but ſmall[a].

It is in great requeſt for wheel-work in the ſugar-mills, particularly for cogs to the wheels, being extremely hard and tough, it is ſo heavy that a foot cube weighs about a hundred pounds, and it will take a fine poliſh[b].

Native of the Weſt Indian iſlands, and the continent of America. Cultivated here in 1739[c].]

PROPAGATION AND CULTURE.

It is eaſily raiſed from the ſeeds if they are freſh; theſe muſt be ſown in pots, and plunged into a hot-bed of tanners bark: there ſhould be but one ſeed put into each pot, or if there be more, when the plants appear, they ſhould be all drawn out to one ſoon after they come up, before their roots entangle, when it will be hazardous doing it; for if great care be not taken, the plant intended to be left may be drawn out with the other. As the roots of this plant are but ſlender, ſo they are very difficult to tranſplant; for unleſs a ball of earth is preſerved to their roots, they ſeldom ſurvive their removal, therefore they muſt be ſeldom tranſplanted from one pot to another. The plants muſt conſtantly remain in the tan-bed in the ſtove, and ſhould be treated the ſame way with other tender plants of the ſame country, giving but little water to them, eſpecially in the winter. When theſe plants firſt appear, they make conſiderable progreſs for two or three months, after which time they are at a ſtand perhaps a whole year without ſhooting, being in their growth very like the Anacardium, or Caſhew Nut, and very difficult to preſerve long in this country.

[HYMENOPHYLLUM. See *Trichomanes*.

HYOBANCHE.

Lin. gen. Schreb. n. 1046. *Juſſ.* 101.
Claſſ. 14. 2. Didynamia Angioſpermia.
Nat. order of *Perſonatæ*. *Pediculares*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* ſeven-leaved; *leaflets* linear, acuminate, erect, the length of the corolla.
Cor. one-petalled, ringent: upper lip vaulted, emarginate; lower none.
Stam. *Filaments* four, twin, inſerted into the baſe of the corolla, of a middling length. *Anthers* ovate, nodding, opening on the upper ſide.
Pist. *Germ* ovate. *Style* filiform, curved at the top. *Stigma* thickened, blunt, emarginate.
Per. *Capſule* roundiſh, two-celled.
Seeds numerous, ſmall.

Obs. *The calyx and corolla forbid its being aſſociated with* Orobanche.

ESSENTIAL CHARACTER.

Cal. ſeven-leaved. *Cor.* ringent, without any lower lip. *Capſ.* two-celled, many-ſeeded.

SPECIES.

1. Hyobanche ſanguinea.
Lin. ſyſt. 574. *Reich.* 3. 186. *mant.* 253.
Orobanche mauritanica, flore purpureo. *Pet. gaz. t.* 37. *f.* 4.
Orobanches ſpecies æthiopica. *Pluk. mant.* 142.

DESCRIPTION, &c.

Stem half a foot high, quite ſimple, woody, thick, cloſely imbricated with leaves, or rather ovate ſcales, convex on the outſide, ſmooth, blunt. Spike terminating, denſe, fleſhy, villoſe, the length of the ſtem, and three times as broad, imbricated with bractes and flowers. Bractes (one to each flower) ovate-oblong, hirſute on the outſide, the ſame length with the tube of the flowers, which are ſeſſile. The whole plant reſembles the Orobanche in ſtature, but it is blood red. The ſeven-leaved calyx, and corolla deſtitute of a lower lip, are ſufficient reaſons for the removal of this plant from the genus Orobanche.—It is a native of the Cape of Good Hope, and is paraſitical at the roots of ſhrubs[d].]

HYOSCYĂMUS. (Ὑος κυαμος, *Hog-Bean. Theſe animals, according to Ælian, being poiſoned with it, and dying, unleſs drenched within and without with water.*)
Lin. gen. n. 247. *Schreb. n.* 333. *Tournef.* 42. *Juſſ.* 124. *Gærtn. t.* 76.
Claſſ. 5. 1. Pentandria Monogynia.
Nat. order of *Luridæ*. *Solaneæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, tubular, ventricoſe at bottom, with a five-cleft ſharp mouth, permanent.
Cor. one-petalled, funnel-form: *tube* cylindrical, ſhort; *limb* from erect ſpreading, half-five-cleft; *ſegments* obtuſe, one broader than the others.
Stam. *Filaments* five, awl-ſhaped, inclining. *Anthers* roundiſh.
Pist. *Germ* roundiſh. *Style* filiform, the length of the ſtamens. *Stigma* headed.
Per. *Capſule* ovate, obtuſe, marked with a line on each ſide, two-celled, two capſules cloſely approximating, with a lid opening horizontally. *Receptacles* half ovate, fixed to the partition.
Seeds numerous, unequal, (irregular.)

Obs. H. phyſalodes *and* Scopolia *differ in having the fruit ſeldom opening, and a more regular corolla.*

ESSENTIAL CHARACTER.

Cor. funnel-form obtuſe. *Stam.* inclined. *Capſ.* two-celled, covered with a lid.

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[a] Browne and Long jam. 3. 728, &c.
[b] Jacquin.
[c] Hort. kew. from Mill. dict.
[d] Linn. mant.

SPECIES.

1\. Hyoſcyamus niger. *Black* or *common Henbane.*
Lin. ſpec. 257. *Reich.* 1. 499. *hort. cliff.* 56. *fl. ſuec. n.* 199. *mat. med.* 64. *Hudſ. angl.* 92. *Wither. arr.* 231. *ed.* 3. 252. *Lightf. ſcot.* 144. *Relh. cant. n.* 173. *Woodv. med. bot.* 143. *t.* 52. *Hall. helv. n.* 580. *Gmel. ſib.* 4. 93. *Scop. carn. n.* 253. *Pollich pal. n.* 225. *Allion. pedem. n.* 375. *Krock. ſileſ. n.* 340. *Villars dauph.* 2. 489. *Blackw. herb. t.* 550. *Plenck, ic.* 97.
Hyoſcyamus. *Brunſ.* 224. *Matth.* 1064. *Camer. epit.* 807. *Rivin. mon. t.* 102.
H. vulgaris. *Bauh. hiſt.* 3. 627. 1. *Raii hiſt.* 711. *ſyn.* 274.—vel niger. *Bauh. pin.* 169. *Tourn. inſt.* 118. *Garid. aix.* 235. *Mor. hiſt. ſ.* 5. *t.* 11. *f.* 1.
H. niger. *Dod. pempt.* 450. 1. *Lob. obſ.* 139. 1. *Ger.* 283. 1. *emac.* 353. 1.—vulgaris. *Cluſ. hiſt.* 2. 83. *Park. theat.* 362. 1.
H. flavus. *Fuchſ. hiſt.* 833.
H. ſecundus Galeni. *Trag.* 133.
Leaves ſtem-claſping ſinuate, flowers ſeſſile.

2\. Hyoſcyamus reticulatus. *Egyptian Henbane.*
Lin. ſyſt. 257. *Reich.* 1. 499. *Gron. orient. n.* 51. *Retz. obſ.* 5. 2.
H. ægyptius. *Raii hiſt.* 712. *Park. theat.* 363. *f.* 3.
H. cauliculis ſpinoſiſſimis, ægyptiacus. *Bauh. pin.* 169. —item, rubello flore. *ejuſd. ibid. Ger. emac.* 355. 5. *Mor. hiſt. ſ.* 5. *t.* 11. *f.* 6, 7.
H. peregrinus. *Cluſ. pann.* 502.
H. peculiaris. *Cam. hort.* 77. *t.* 22.—flore purpuraſcente. *Bauh. hiſt.* 3. 628.—item, ſyriacus, *ejuſd. Camer. hort. t.* 21.
Stem-leaves petioled cordate ſinuate acute, floral leaves quite entire, corollas ventricoſe.

3\. Hyoſcyamus albus. *White Henbane.*
Lin. ſpec. 257. *Reich.* 1. 500. *hort. cliff.* 56. *Gærtn. fruct.* 1. 369. *Sauv. monſp.* 275. *Krock. ſileſ. n.* 341. *Blackw. herb. t.* 111. *Sabb. hort.* 1. *t.* 91. *Beſl. eyſt. æſt.* 8. *t.* 8. *f.* 2. *Mill. fig. t.* 149. *dict. n.* 2, 3. *Plenck. ic.* 98. *Ger.* 283. *emac.* 353. *Park. theat.* 363. *n.* 2. *Bauh. hiſt.* 3. *Raii hiſt.* 712.
H. albus major. *Bauh. pin.* 169. *Mor. hiſt. ſ.* 5. *t.* 11. *f.* 2.—item, albus minor, *ejuſd. Ger. emac.* 354. 3. *Mor. f.* 3.
H. albus vulgaris. *Cluſ. hiſt.* 2. 118. *Lob. adv.* 107.
Leaves petioled ſinuate obtuſe, flowers ſeſſile.

4\. Hyoſcyamus aureus. *Golden-flowered* or *Shrubby Henbane.*
Lin. ſpec. 257. *ſyſt.* 220. *Reich.* 1. 500. *hort. cliff.* 56. *Curt. magaz.* 87.
H. creticus luteus major. *Bauh. pin.* 169. *prodr.* 92. *Raii hiſt.* 712. *Mor. hiſt. ſ.* 5. *t.* 11. *f.* 4.
H. albus creticus. *Cluſ. hiſt.* 2. 84.
H. creticus. *Park. theat.* 362. *f.* 3.
β. H. cret. lut. minor. *Bauh. pin.* 169. *Mor. f.* 5. *Ger. emac.* 354. 4.
H. aureus. *Alp. exot.* 99. *t.* 98. *Raii hiſt.* 712.
Leaves petioled toothed acute, flowers peduncled, fruits pendulous.

5\. Hyoſcyamus muticus.
Lin. ſyſt. 220. *Reich.* 1. 500. *mant.* 45.
H. minor. *Mill. dict. n.* 4.
H. albus ægyptius. *Alp. exot.* 193. *t.* 192? *Mor. f.* 8.
Leaves petioled ovate acutangular, calyxes awnleſs, bractes undivided.

6\. Hyoſcyamus puſillus. *Dwarf Henbane.*
Lin. ſyſt. 220. *Reich.* 1. 501. *mant.* 339. *hort. cliff.* 56. *upſ.* 44. *Murr. prodr.* 144. *Pallas it.* 2. 329. *Gouan illuſtr.* 7.
H. puſillus aureus americanus, antirrhini foliis glabris. *Pluk. phyt. t.* 37. *f.* 5.
Leaves lanceolate toothed, lower floral leaves in pairs, calyxes ſpiny.

[7. Hyoſcyamus phyſaloides. *Purple-flowered Henbane.*
Lin. ſpec. 258. *ſyſt.* 221. *Reich.* 1. 501. *hort. upſ.* 44. *amoen.* 7. *t.* 6. *f.* 1.
Pulmonaria hirta. *Lin. ſpec.* 1667. (deſcr.)
Leaves ovate quite entire, calyxes inflated ſubglobular.

8\. Hyoſcyamus Scopolia. *Nightſhade-leaved Henbane.*
Lin. ſyſt. 221. *Reich.* 1. 501. *mant.* 46, 339. *Scop. carn. n.* 254. *Gærtn. fruct.* 1. 370.
Scopola carniolica. *Jacqu. obſ.* 1. 32. *t.* 20.
Solanum ſomniferum bacciferum. *Bauh. pin.* 166.
S. ſomn. alterum. *Camer. epit.* 816. *Park. theat.* 346. *f.* 5. *Raii hiſt.* 680.
Leaves ovate entire, calyxes inflated bell-ſhaped even.]

DESCRIPTIONS, *&c.*

1\. Common black Henbane has long fleſhy roots, which ſtrike deep into the ground, and are branched. Bottom leaves ſoft, deeply ſlaſhed on their edges, and ſpreading on the ground. The ſtalks, which do not riſe till the ſecond ſpring, have leaves of the ſame ſhape, but ſmaller, and claſping, and are about two feet high: on the upper part are flowers ſtanding on one ſide in a double row, ſitting cloſe to the ſtalk alternately.

[The whole plant is covered with unctuous fetid hairs. The corolla is yellow, or rather pale yellowiſh brown, beautifully netted with purple veins, and a dark purple eye or baſe: the ſhape is irregular, gradually tapering into the tube, with five prominent ribs on the outſide; the upper ſegment is the largeſt, the reſt gradually diminiſhing downwards; the upper inciſions are ſhallow, the lowermoſt extending half way to the baſe, and much wider than the reſt. Calyx a little diſtended on the under-ſide, woolly at the baſe with long ſoft hairs, matted with thoſe of the flowers next above and below. Filaments white, with ſoft hairs below; the uppermoſt ſhorteſt, thoſe below gradually increaſing in length. Anthers and ſtyle of a fine deep purple. The capſules do not ſplit, as moſt others do, into two or more valves, but are covered with a lid, that rain, as Linneus expreſſes it, may not ſpoil the ſeeds. This lid, though it may may eaſily be ſeparated with a knife, yet adheres ſo ſtrongly to the body of the capſule, that the ſeeds more frequently eſcape by the perforations of inſects, than from the falling off of the lid. The calyx becomes rigid, and the capſules continue on the dead plant till the plants of the next year are in flower; when, the leaves being fallen off, the fruit appears in bunches pointing one way, in two rows from one ſide of the ſtem and branches. Seeds very abundant, gray, excavated and angular[a].

The whole plant has a ſtrong and peculiar odour, ariſing from the viſcid hairs with which it is covered, greatly affecting the head of ſome perſons, as ſoon as they come within its atmoſphere.

The root, herb, and ſeeds, taken internally, are reputed poiſonous, and well atteſted inſtances of their bad effects are recorded. Madneſs, convulſions, and death are the general conſequence. Dr. Smith ſays, he has often eaten the ſeeds with impunity[b] (and I have done the ſame, in ſmall quantities). Lightfoot however affirms, that a few of the ſeeds have been known to deprive a man of his reaſon and limbs; relying probably on the relation of Haller, that one of his fellow pupils under Boerhaave at Leyden, in the year 1725, having eaten Aconite, Apocynum, and Belladonna with impunity, was at length taken in by the ſeeds of Henbane; loſt his reaſon and the uſe of one ſide, but his life was ſaved by Boerhaave.

Linneus affirms, that the roots have been frequently eaten for Parſneps, and have produced delirium and not unfrequently death.]

Mr. Miller informs us, that a mixture of theſe roots having been imported with Gentian, has been attended with very bad effects.

[Other relations of the narcotic and poiſonous effects of the ſeveral parts of Henbane may be met with in almoſt all the authors who have treated of this nauſeous plant.

Linneus ſays, it is not touched by any quadruped, except perhaps the goat, and that animal is not fond of it. Sheep, it is ſaid, will ſometimes eat it when young. There is a ſort of bug (cimex hyoſcyami) very common on it. Chryſomela hyoſcyami alſo feeds upon it. According to Linneus, the roots ſcattered about a houſe will drive away mice[c].

Henbane has been uſed medicinally from time immemorial; and there is no doubt of its being an uſeful

[a] Withering, Stokes in With. Pollich, Linn. ſuec. Lightf.
[b] Withering.
[c] Fl. ſuec.

medicine under proper management. The Edinburgh college order the expreſſed juice of the plant to be evaporated to an extract; and perhaps in this ſtate it may be advantageouſly joined with opium, where the effects of the medicine are deſirable, and coſtiveneſs is to be avoided. The doſe is from half a ſcruple to half a dram[d]. Villars ſays, the extract may be given ſafely in a doſe of two or three grains, increaſing the quantity gradually; but that it ought to be prepared from the plant juſt going into flower, and in balneo mariæ; for it has neither odour nor activity, if the plant be young, or if the extract be made with an open ſtrong fire. He has adminiſtered it internally in epilepſy and convulſions, and found that it put off the fits, and diminiſhed their violence, but did not effect a cure. Stoerck and others after him have recommended it not only in the above diſorders, but in mania, hæmoptoe, the dry cough, but univerſally wherever an anodyne is wanting to quiet the nervous irritations: beginning with a ſingle grain of the extract, and increaſing the doſe gradually to five grains; ſome more daring practitioners proceed as far as fifteen grains; but in general perhaps it is more adviſeable to continue the uſe of the medicine longer than to give it in very large doſes. It has been even adminiſtred in a cataract, to the quantity of two grains, mixed with mercurius dulcis. The leaves bruiſed and fried have been applied with effect to the piles, and in muſcular ſpaſms. Like other narcotics they aſſiſt in ſoftening indurations of the glands. An oil expreſſed from the ſeeds is uſed outwardly as an anodyne: and the common people ſometimes ſmoke them for the tooth-ach; or put a piece of the root boiled in milk at the root of the tooth.] The roots alſo, cut in pieces and ſtrung like beads, are uſed for anodyne necklaces to hang about children's necks, to prevent fits, and cauſe the teeth to breed eaſily. [Some give a decoction of Henbane in clyſters to aſſwage the pains of the inteſtines, but this is dangerous[e]. In general it is a medicine not to be trifled with, or taken without good advice.

Henbane is a native of moſt parts of Europe, in waſte places, particularly near towns and villages, whence Linneus remarks that it aſſociates with mankind, like the magpie, and ſome other birds. It is generally known by its peculiar fetid odour. The Engliſh name Henbane is probably derived from a notion of its being noxious to poultry; but whether this notion be well founded or not, I have not had any opportunity of knowing.

In German it is *Bilſenkraut*. In Dutch, *Bilſenkruid*. In Daniſh, *Bulme*, *Honſebane*, &c. In Swediſh, *Bolmort*, *Honſabale*. In French, *la Juſquiame*. In Italian, *Giuſquiamo*, *Fava porcina*. In Spaniſh, *Beleno*, *Veleno*. In Portugueze, *Miemendro*, *Velenho*, *Yoſciamo*. In Ruſſian, *Belena*.

A variety of this was found by Profeſſor John Martyn, near the Caſtle at Cambridge, about the year 1729, with the corolla and anthers of a pure brimſtone colour, without the leaſt tinge of purple. The ſeeds being ſown in the botanic garden at Chelſea, produced the very ſame variety[f].

Henbane is a biennial plant, forming the root and lower leaves the firſt ſeaſon, and the ſtem with the fructification the ſecond. It flowers in june.]

2. This riſes with a branching ſtalk two feet high. The lower leaves are regularly cut on both ſides into acute ſegments, which are oppoſite, but the upper leaves are entire. The flowers grow at the end of the ſtalk in bunches. They are of a worn-out red colour, and ſhaped like thoſe of the common ſort, but their tubes are ſwollen.

[The whole plant is ſmooth[g]. It reſembles common Henbane, but the ſtem-leaves are ovate, repand, more ſmooth above; the floral leaves ovate, ſeſſile, entire. Flowers on a very ſhort peduncle. Corolla bell-ſhaped, red, beautifully netted with dark veins[h].

Native of Egypt, of Syria near Aleppo, according to Rauwolff, and of the iſland of Crete or Candia, according to Cluſius. It is an annual plant, flowering in july, and was cultivated by Mr. Miller in 1731.

This ſpecies was left out in the twelfth, thirteenth, and fourteenth editions of Syſtema Vegetabilium, but is reſtored by Reichard, Retzius and others; unleſs it be the ſame with H. muticus, n. 5. and H. Datura of Forſkall[i].

3. White Henbane reſembles the Black in moſt circumſtances, but the leaves are more rounded or obtuſe, petioled, ſinuate, very ſoft, bearded with white hairs, as is alſo the ſtem. Flowers fewer, the lower ones on longer peduncles, but the upper flowers have very ſhort ones. Calyx green, five-toothed, hairy. Throat of the corolla longer than in the firſt ſort; limb revolute, five-cleft, with unequal ſegments[k]. Capſule clothed with the calyx, membranaceous, knobbed with the protuberant ſeeds, ovate, ventricoſe at bottom, marked with a depreſſed ſtreak on each ſide. Receptacle fungoſe, ſcrobiculate, ovate-oblong, plano-convex, fixed on both ſides to the partition. Seeds very numerous, ſmall, compreſſed a little, incurved or kidney-form, cloſely ſcrobiculate, whitiſh aſh-coloured[l].

Native of the South of Europe. Annual. Flowering in auguſt. Cultivated here in 1570[m].

The corolla varies with the baſe dark purple, or green. Hence Miller has made two ſpecies, *major* and *albus*;] the firſt having the flowers on ſhort peduncles, of a pale yellow colour, with very dark purple bottoms, and growing naturally in the iſlands of the Archipelago: this is H. major, albo ſimilis, umbilico floris atro-purpureo. *Tournef. cor.* The ſecond has the flower in larger bunches, ſitting very cloſe on the ends of the branches, of a greeniſh yellow colour, with green bottoms. This is the white Henbane of the South of Europe. H. major, albo ſimilis, umbilico floris virenti. *Juſſieu.*

4. This is a perennial plant (biennial), with weak ſtalks, which require a ſupport. Leaves roundiſh, acutely indented on their edges, and on pretty long foot-ſtalks. The flowers come out at each joint of the ſtalk; they are large, and of a bright yellow, with a dark purple bottom. The ſtyle is much longer than the corolla. [The ſtem is hairy, and about a foot high. The petioles are very hairy. Leaves lobed, toothletted. Peduncles at the ſide of the petioles, erect with the flower, but quite bent down when in fruit. The outer lobe of the corolla is larger than the reſt; and the lower ſinus is cut beyond the limb, as in the Teucriums, and there the purple ſtamens with the very long piſtil iſſue and hang down[n].

Native of Candia, and other parts of the Levant.] It flowers moſt part of the ſummer, and ſometimes ripens ſeeds in the autumn. [Cultivated in 1640, by Parkinſon[o].

Proſper Alpinus and others make two varieties of this, differing only in ſize and the ſhade of colour in the corolla.

5. Stem a foot high, the thickneſs of a finger, erect, roundiſh, ſubpubeſcent; branches axillary, ſhorter. Leaves alternate, obtuſely ſinuated; acute, even, quite entire, paliſh, with pubeſcent petioles. Floral leaves ſubpetioled, ovate or ovate-oblong, entire, one or two to a flower alternately. Raceme of flowers all directed one way, curved in at top. Calyx bell-funnel-form, with broadiſh ſegments, not at all ſpiny. Corolla a little longer than the calyx, but not broader, ſubcampanulate, the three upper ſegments broader, the two lower ſmaller, deeply ſeparated; the colour on the outſide at firſt green, then whitiſh; on the inſide very dark purple, with the two loweſt ſegments whitiſh; but finally the whole corolla becomes white and unſpotted. Stamens declining, purple, a little longer than the corolla. Piſtil longer, declining. Native of Egypt and Arabia. Biennial[p].]

Miller deſcribes his minor as having a ſmaller ſtalk than the preceding, with joints farther diſtant; the leaves roundiſh, and deeply indented in obtuſe ſegments, ſtanding upon pretty long foot-ſtalks; the flowers coming out ſingly from the ſide of the ſtalks, at a good diſtance from each other; of a yellow colour, with dark bottoms. It was brought from the Levant by Tournefort.

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[d] Withering.
[e] Allioni.
[f] Tourn. par. engl. edit. 2. 26.
[g] Gron. orient.
[h] Linn. ſpec.

[i] Retz. obſ. 5.
[k] Krocker.
[l] Gærtner.
[m] Hort. kew. from Lobel.
[n] Linn. ſpec.
[o] Hort. kew.
[p] Linn. mant.

6. [This is an annual plant, a hand in height. Stem oblique, brittle, undivided, having long hairs. Lower leaves entire, upper oblong, toothed, alternate, ſparingly hairy, on petioles of the ſame length with themſelves. Peduncles ſhort on the outmoſt ſtem, each from the axil of two oppoſite leaves. Calyxes turbinate, ten-angled, almoſt the length of the corolla, and broader than its tube, ſpiny at top. Corolla yellow, with a dark throat, divided on the lower ſide beyond the limb. Stamens declining[q].

Gouan ſays, that the root-leaves in the wild plants are always bipinnatifid, with the ſegments ſharply toothed: but that it occurs alſo with lanceolate leaves, if the ſeeds be ſown very late, or be cultivated in a poor lean ſoil.

Native of Perſia. Cultivated in 1691 by Compton, Biſhop of London, at Fulham. It flowers in july[r].

7. Root perennial. Stems a foot high, ſimple, erect, round, rough-haired. Leaves alternate, petioled, cordate, lurid-green, veined, rough-haired underneath, the upper ones gradually larger. Flowers in bundles, terminating, peduncled. Calyxes very ſhort, five-toothed, rough-haired. Corollas purpliſh, funnel-form, upright. Stamens a little ſhorter than the corolla, converging. Style the ſame length with the corolla. Stigma capitate, emarginate, whitiſh. It flowers early in ſpring. Native of Siberia[s].

It was introduced here in 1777, by Meſſrs. Gordon and Græffer[t].

The deſcription is repeated in the appendix to Linneus's Species plantarum, p. 1668. under Pulmonaria hirta.

8. Root perennial, tranſverſe, knobbed, thick, irregular, branched, flexuoſe, the thickneſs of the human thumb. Stem herbaceous, annual, upright, round, ſmooth, (ſcarcely more than a foot high, according to Linneus and Jacquin, but even three feet in height, according to Scopoli), the thickneſs of the human finger, trifid and bifid, with dichotomous branches, as in Atropa Belladonna. (Branches only two, according to Linneus, ſpreading, and entirely ſimple: or, as Jacquin ſays, ſubtrichotomous, with a groove running down from the leaves.) Leaves ovate and oblong, the length of the human finger; the lower quite entire; the upper frequently moderately ſinuate or repand. (According to Linneus, petioled, naked, ſomewhat wrinkled, ſpreading; on the ſtem alternate, ſolitary; under the forkings in threes, two of which approximate; on the branches alternate, but two together on the ſame tooth or baſe, one of which is a little leſs than the other. According to Jacquin, they are ſubovate or lanceolate, entire except the lower ones, which in gardens at leaſt are ſinuate-toothed in front, veined, wrinkled, decurrent; the lower ones oppoſite, the reſt ſcattered.) Peduncles one-flowered, pendulous, from the axils; weak, two inches long. Calyx ſmooth, five-toothed, permanent, wider than the fruit, and as it were inflated: (bell-ſhaped, five-cleft, awnleſs. *Linn.*) Corolla of the ſame ſhape and colour as in Atropa Belladonna: (three times the length of the calyx, bell-ſhaped, ſlightly five-cleft, blunt, on the outſide ferruginous, with a few pale ſtreaks, within yellow. *Linn.*—oblong, large, five-toothed, narrowing at the baſe into a ſhort tube, yellowiſh purple, deciduous. *Jacqu.*) Stamens attenuated, villoſe, (approximating to the ſtyle, bent down towards the lower ſide. *Linn.*—awl-ſhaped, unequal, upright, hirſute, ſhorter than the petal. *Jacqu.*) Anthers two-celled, pale yellow, (oblong, incumbent, large. *Jacqu.*) Style deciduous, longer than the ſtamens; terminated by a capitate, ſubbifid, pulvinated ſtigma, having a three-cornered aperture at top. Germ ſeſſile, ſmooth, (ovate, blunt, ſitting on the receptacle, with five nectareous toothlets round the baſe of it. *Jacqu.*) Capſule ſmaller than the calyx, five lines in diameter, not eaſily opening; the lid marked with two cruciform lines; (falling with the peduncle and calyx, and after it has fallen, opening tranſverſely. *Jacqu.*—ſubglobular, coriaceous, ruſeſcent, cut round almoſt in the middle. *Gærtn.*) Seeds in each cell from twenty to twenty-four, fixed to an orbiculate receptacle[u]; kidney-form, rather large, elegantly dotted very cloſely in rows, with little holes, and of a very pale yellow colour[x]. It differs from Atropa, which it very much reſembles in habit, in the calyx, ſtigma, and nectareous teeth of the receptacle, but principally in its capſular fruit.

Frequent in the woods about Idria in Friuli, flowering about the middle of april[y]. It flowers with us in may; and was introduced in 1780, by Mr. Daniel Grimwood[z].

Jacquin, thinking that this plant is generically diſtinct from Solanum, with which the old authors had placed it; from Atropa, wherein Scopoli had put it in the firſt edition of his Flora Carniolica, and from Hyoſcyamus, made a new genus of it under the name of *Scopola*, from Giov. Ant. Scopoli, phyſician at Idria, and afterwards profeſſor at Pavia: but he with ſingular modeſty declined the honour in the following words. " Veruntamen merita mea in re herbaria non ea eſſe " fateor, quæ me viris illis adnumerare queant, quo- " rum cognomina novis plantarum generibus data " fuerunt. Alii ſunt his honoribus longe digniores." Had only ſuch received this honour, the names of plants of this ſort would have been very few. Modern botaniſts, however, have agreed to conſider this plant as a ſpecies of Hyoſcyamus; and it has been reſerved to Dr. Smith to name a plant from this amiable and ſkilful naturaliſt.]

PROPAGATION AND CULTURE.

All theſe are biennial plants, which periſh ſoon after they have perfected their ſeeds. They flower in june and july, and their ſeeds ripen in the autumn, which, if permitted to ſcatter, will produce plenty of the plants the following ſpring; or if the ſeeds are ſown at that ſeaſon, they will ſucceed much better than in the ſpring; for when they are ſown in ſpring, the plants ſeldom come up the ſame year. They are all hardy except the ſecond ſort, and require no other culture but to keep them clean from weeds, and thin the plants where they are too cloſe. The ſecond ſort ſhould have a warm ſituation and a dry ſoil, in which it will live much better through the winter than in rich ground.

The fourth ſort is a perennial plant. If the ſeeds are ſown in pots as ſoon as they are ripe, and placed under a hot-bed frame in winter, the plants will come up in the ſpring; but if they are kept out of the ground till the ſpring, they rarely ſucceed. This ſort will continue ſeveral years, if it be kept in pots and ſheltered in winter, for it will not live in the open air at that ſeaſon, but only requires to be protected from froſt; therefore if theſe plants are placed under a common hot-bed in winter, where they may enjoy as much free air as poſſible in mild weather, they will thrive better than when they are more tenderly treated. This ſort may be eaſily propagated by cuttings, which, if planted in a ſhady border during any of the ſummer months, will take root in a month or ſix weeks, and may be afterwards planted in pots, and treated like the old plants.

[HYOSCYAMUS. See *Oenothera* & *Pedalium.*

HYOSĔRIS. (Υος σερις, *Swine's Lettuce, or Succory, Linn.*)

Lin. gen. n. 916. *Schreb. n.* 1242. *Juſſ.* 169. *Gærtn. t.* 160.

Taraxaconaſtrum. *Vaill. mem. acad.* 1721. 45. 40. 31. 32. 24.

Claſſ. 19. 1. Syngeneſia Polygamia Æqualis.

Nat. order of *Compoſitæ Semifloſculoſi.*—*Cichoraceæ*, Juſſ.

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[q] Linn. mant. & Murr. prodr.

[r] Hort. kew. from Pluk.

[s] Linn. amoen.

[t] Hort. kew.

[u] Scopoli.

[x] Gærtner.

[y] Scopoli.

[z] Hort. kew.

GENERIC CHARACTER.

Cal. *common* cylindric-angular, conſiſting of about eight leaves, permanent; *ſcales* lanceolate, erect, acute, ſlightly keeled, equal; calycled at the baſe with fewer, very ſhort, cloſe ſcales.

Cor. *Compound*, ſubimbricate, uniform; compoſed of many hermaphrodite corollets.

Proper one-petalled, ligulate, linear, truncate, five-toothed.

Stam. *Filaments* five, capillary, very ſhort. *Anther* cylindrical, tubular.

Pist. *Germ* oblong. *Style* filiform, the length of the ſtamens. *Stigmas* two, reflex.

Per. none. The common calyx cloſe or ſpreading.

Seeds ſolitary, oblong, membranaceous, ſtreaked on one ſide along the middle, almoſt the length of the calyx.

ESSENTIAL CHARACTER.

Cal. almoſt equal. *Down* hairy and calycled. *Recept.* naked.

SPECIES.

* *Stem naked.*

1. Hyoſeris foetida. *Stinking Hyoſeris.*

Lin. ſpec. 1137. *Reich.* 3. 657. *mant.* 459. *Gouan. hort.* 415. *Villars dauph.* 3. 166.

Lapſana. *Hall. helv. n.* 5.—foetida. *Allion. pedem. n.* 749.

Lampſana foetida. *Scop. carn. n.* 989.

Taraxaconaſtrum, dentis leonis folio, radice foetida. *Vaill.* 1721. *p.* 180.

Leontodontoides alpinus glaber, eryſimi folio, radice craſſa foetida. *Mich. gen.* 31. *t.* 28.

Dens leonis tenuiſſimo folio. *Bauh. pin.* 126. *prodr.* 62.—fol. profunde laciniatis, virore ſplendentibus, foetidus. *Mor. hiſt.* 3. 75. *n.* 8. *ſ.* 7. *t.* 7. *f.* 7.

Hieracium tertium foetidum. *Col. ecphr.* 2. 29. *t.* 31. *Raii hiſt.* 247.

Scapes one-flowered, leaves pinnatifid, ſeeds naked.

2. Hyoſeris radiata. *Starry Hyoſeris.*

Lin. ſpec. 1137. *Reich.* 3. 657. *Gouan. hort.* 415. *Sauv. monſp.* 300.

Rhagadiolus radiatus. *Allion. pedem. n.* 835.

Taraxaconaſtrum dentis leonis folio ad ſummitatem radiato. *Vaill. act.* 703.

Dens leonis minor, foliis radiatis. *Bauh. pin.* 129. *prodr.* 62. *Pluk. phyt. t.* 37. *f.* 2. *Park. theat.* 780. *n.* 4. *Raii hiſt.* 246.

Scapes one-flowered, leaves ſmooth, runcinated, with toothed angles, laciniated at top.

3. Hyoſeris lucida. *Shining Hyoſeris.*

Lin. ſyſt. 720. *Reich.* 3. 658. *mant.* 108. *Vahl ſymb.* 1. 66. *Jacqu. hort.* 2. *t.* 150.

Lapſana taraxacoides. *Forſk. deſcr.* 145. *n.* 63.

Dens leonis græcus, foliis eryſimi craſſis & ſucculentis. *Tournef. cor.* 35.

Scapes one-flowered, leaves ſomewhat fleſhy, runcinate, angular, toothed.

4. Hyoſeris ſcabra. *Rugged Hyoſeris.*

Lin. ſpec. 1138. *ſyſt.* 720. *Reich.* 3. 658. *hort. cliff.* 386.

Rhagadiolus ſcaber. *Allion. pedem. n.* 833.

Taraxaconaſtrum, eryſimi folio, flore minimo. *Vaill. act.* 1721. *p.* 235.

Dens leonis minimus, fol. hirſutis, calycis ſegmentis a flore delapſo erectis & ſemina complexis. *Raii hiſt.* 3. 147.

Hieracium minimum ſupinum, tragopogoni capitulis. *Bocc. muſ.* 2. 146. *t.* 106.

Scapes one-flowered, leaves rugged, ſeeds downy.

5. Hyoſeris virginica. *Virginian Hyoſeris.*

Lin. ſpec. 1138. *Reich.* 3. 658. *Gron. virg.* 60.

Scapes one-flowered, leaves lanceolate, lyrate, ſmooth.

6. Hyoſeris pygmæa. *Dwarf Hyoſeris.*

Ait. hort. kew. 3. 130.

Scapes one-flowered, leaves ſpatulate toothed ciliate, calyxes hairy, hairs and cilias forked, down ſtiped, feathered.

7. Hyoſeris minima. *Leaſt Hyoſeris.*

Lin. ſpec. 1138. *Reich.* 3. 658. *hort. cliff.* 386. *fl. ſuec. n.* 707. *Hudſ. angl.* 346. *Wither. arr.* 856. *ed.* 3. 690. *Lightf. ſcot.* 442. *Relh. cant. n.* 578. *Engl. bot. t.* 95. *Sauv. monſp.* 14. *Pollich pal. n.* 753. *Fl. dan. t.* 201. *Krock. ſileſ. n.* 1312. *Villars dauph.* 3. 164.

H. anguſtifolia. *Tabern. ic.* 180.

Lapſana. *Hall. helv. n.* 4.—minima. *Allion. pedem. n.* 751.

Hyoſeris maſcula. *Ger.* 227. 8. *emac.* 288. 8.

H. Tabernæmontani & Gerardi. *Park. theat.* 791. 9. *Raii ſyn.* 173. *Pet. brit. t.* 15. *f.* 9.

Hieracium minus folio ſubrotundo. *Bauh. pin.* 127.

H. minimum. *Cluſ. hiſt.* 2. 142. 2. *Raii hiſt.* 229.

Hieracii parva ſpecies, Hyoſeris anguſtifolia aſpera. *Bauh. hiſt.* 2. 1025.

Intybus ſ. Endivia lutea minima, &c. *Mor. hiſt.* 3. 53. *ſ.* 7. *t.* 1. *f.* 8.

Stem divided, naked, peduncles thickened.

* *Stem leafy.*

8. Hyoſeris Hedypnois. *Branching Hyoſeris.*

Lin. ſpec. 1138. *Reich.* 3. 659. *Gouan. hort.* 416. *Krock. ſileſ. n.* 1313. *Villars dauph.* 3. 165.

Lapſana. *Lin. hort. upſ.* 246. *cliff.* 387. *Sauv. monſp.* 83.

Rhagadiolus Hedypnois. *Allion. pedem. n.* 831.

Rhagadioloides calthæ folio, calyce glabro. *Vaill. act.* 1721. *p.* 202.

Hedypnois annua. *Tournef. inſt.* 478.

Hieracium facie hedypnois. *Lob. ic.* 239.

H. capitulum inclinans, ſemine adunco. *Bauh. pin.* 128.

H. florem inclinans. *Bauh. hiſt.* 2. 1032.

Fruits ovate, ſmooth, ſtem branched.

9. Hyoſeris Rhagadioloides. *Nipplewort Hyoſeris.*

Lin. ſpec. 1139. *Reich.* 3. 659. *Villars dauph.* 3. 165.

Lapſana. *Hort. upſ.* 246. *n.* 6.

Fruits ovate, hairy, ſtem branched.

10. Hyoſeris cretica. *Cretan Hyoſeris.*

Lin. ſpec. 1139. *Reich.* 3. 659. *Gærtn. fruct.* 2. 372. *Scop. inſubr. t.* 16? *Cavan. hiſp.* 32. *n.* 47. *t.* 43. *Lamarck encycl.*

Lapſana. *Hort. upſ.* 246.

Rhagadiolus creticus. *Allion. pedem. n.* 832.

Hedipnois cretica minor annua. *Tournef. cor.* 36.

Fruits ovate, rugged, ſtem branched.

DESCRIPTIONS, *&c.*

1. Root perennial, ſingle, cylindrical, thick, woody, fetid. Leaves radical, ſmooth, pinnatifid or runcinate, cut into ſeveral triangular ſegments, which are almoſt equal and regular, ſometimes having a few teeth on the hinder ſide, terminated as well as the ſegments themſelves by a herbaceous ſpinule; nerve hairy. From the centre of theſe ſpring from ſix to ten ſimple, naked flowering-ſtalks or ſcapes, a little longer than the leaves, each terminated by a middle-ſized flower, yellow above, and red beneath. Calyx calycled, having five or ſix ſcales at the baſe, leſs by half than the others, which are a little open, ſmooth, and eight in number; each of theſe has two florets. Seeds naked, yellowiſh, ſomewhat villoſe. Receptacle villoſe, flat. The whole plant has a diſagreeable ſmell. It has much reſemblance to Dandelion, but the flower is ſmaller, and of a deeper yellow colour[a].

Native of the mountains of Italy, Dauphiné, Carniola and Switzerland.—Introduced in 1775, by Drs. Pitcairn and Fothergill. It flowers in july[b].

2. The peduncles and rachis of the leaves farinaceous; the lobes imbricately reflexed, toothed on both ſides, even. Seeds membranaceous, with a ſimple ſeſſile egret[c]. Allioni remarks, that the ſeeds in Hyoſeris are crowned, ſometimes with a down, ſometimes with awns or ſcales, but that the outſide ſeeds are naked in moſt of the ſpecies: in this, however, they are all crowned with down.

Native of the South of France, the county of Nice on hills near the coaſt, and of Spain. It was cultivated here in 1640[d].

Allioni ſays it is an annual plant. By Linneus, and in the Kew catalogue it is marked as perennial.

3. This reſembles the preceding very much, but the leaves are thicker, ſomewhat fleſhy, lucid, and

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[a] Linn. ſpec. Scop. Villars, Haller.

[b] Hort. kew.

[c] Linn. ſpec.

[d] Hort. kew.

more ſhortly toothed. Scapes purpliſh, longer than the leaves. Calyx angular. Marginal ſeeds ſcarcely downy [e].

According to Vahl, the wild plant, (which has a very different appearance from the cultivated one) is very ſmooth, a finger's length in height, with the ſcape a little longer than the leaves. The ſegments of theſe are fleſhy, oblong, quite entire, or ſometimes, but very ſeldom, having an angle or toothlet on the outſide, imbricated, covering the middle of the preceding ſegment, terminated by a whitiſh dagger-point. (In the cultivated plant theſe ſegments are diſtinct or remote from each other.) Calyx calycled; ſcales ovate, the inner ones lanceolate.

Native of the Levant. Introduced in 1770, by Monſ. Richard. It flowers from june to auguſt [f].

4. Leaves ſublyrate, naked, ſcarcely rugged, opaque, ſubciliate; ſegments ſubalternate, ſomewhat toothed, the end one three-lobed and angular. Scapes even, having a pellucid meal ſcattered over them, fiſtulous, thickening towards the top, bending to one ſide. Calyx oblong, ſqueezed cloſe, hexangular, ſix-leaved or thereabouts; leaflets lanceolate, ſlightly keeled, equal; with as many leaflets on the outſide covering the baſe of the calyx. Seeds crowned with a rugged rim, and an awned down [g].

Native of Sicily, the county of Nice, Villafranca, &c. It is annual, according to Allioni.

5. The firſt root-leaves are ovate, the next lanceolate, the laſt lyrate, acute and ſmooth. Scapes three times as long as the leaves. Calyxes quite ſimple, not imbricated, compoſed of ten lanceolate leaflets. Corolla deep yellow. Seeds four-cornered, crowned with an entire membranaceous rim, and three or four long briſtles beſides. Native of Virginia [h].

6. This is an annual plant, native of Madeira, flowering in june and july. Introduced by Mr. Francis Maſſon in 1778 [i].

7. Root annual, ſmall but woody, with a few rigid fibres. Leaves ſpreading in a circle, bluntly oval, tapering into the foot-ſtalk, toothed on the ſides, entire at the baſe and ſummit, when viewed with a glaſs ſlightly hairy, particularly at the margins. Stems ſeveral, ſix to nine inches high, naked, round, ſmooth, reddiſh and wiry at the bottom, green and hollow upwards, gradually ſwelling for ſome diſtance below the calyx, ſometimes ſimple, but oftener with one, ſometimes two branches; theſe are alſo rigid and reddiſh at the baſe, ſwelling upwards, and ſometimes again branched; before the flowers expand nodding, afterwards erect. Outer ſcales of the calyx ſmall, dry and withering; inner lanceolate, very acute. Corolla yellow. Seeds oval, ſtriated, crowned with the remains of the proper calyx [k]. The whole plant is ſmooth and upright. The florets are truncated, and have commonly five teeth; thoſe in the ray are tinged with purple underneath; they amount ſometimes to ſeventy-ſix in number in one flower. The calyx has about eleven ſmaller, and twenty-four larger ſcales. Receptacle naked. At the origin of the branches, and on the branches themſelves, are a few awl-ſhaped ſcales or ſtipules [l].

Native of moſt parts of Europe n paſtures and corn fields in a ſandy ſoil. In Britain not very common. About Hampton Court and in Teddington field; Walthamſtow, Eſſex; near Perſhore in Worceſterſhire; near Norwich; near Gamlingay in Cambridgeſhire; Spratton in Northamptonſhire. About Forfar, and between Dundee and St. Andrew's in Scotland.

Gerarde calls it Male Swines Succorie; Parkinſon, Cluſius his leaſt Hawkeweede, Ray, Small Swines Succory or Hawkweed; Hudſon, Leaſt Hyoſeris or Swine's Succory; Dr. Withering, Small Swines-eye. It flowers in may and june.

8. Root annual. Stems branched, weak, and bending at each joint, whence ſprings one ſeſſile, ſmooth, oblong, toothed leaf. Flower yellow, ſmall, nodding; calyx ſmooth, firm, hard, angular, open when the ſeeds are ripe; the central ſeeds have a hard ſeſſile egret, of ſimple duſky hairs or briſtles [m]. Thoſe of the ray have only a rim.

Native of the South of Europe. Cultivated in 1683, by Mr. James Sutherland. It flowers in june [n].

9. This alſo is an annual plant. Villars ſuſpects it to be no more than a variety of the preceding; the calyx is villoſe, and leſs hard. It is a native of the South of Europe, and was introduced in 1773, by Monſ. Richard. It flowers in july and auguſt [o].

10. Root annual, round, fibrous, white within, brown without. Stems ſeveral, half a foot high, ſpreading, ſomewhat hiſpid. Leaves oblong, narrower at the baſe, tooth-runcinate, hiſpid; ſtem-leaves alternate at the inſertion of the flowers. Flowers ſolitary, erect, terminating and axillary; peduncles gradually thickening towards the top, fiſtulous, ſomewhat compreſſed. Common calyx compoſed of near twenty leaflets, with ſome ſhort ſcales at the baſe; when the ſeed is ripe, hiſpid, globular and reddiſh. Proper calyx of each floret very ſhort, ten-parted, permanent. Corollets ſhort, pale yellow, with the apex of the tube villoſe [p]. Receptacle flat, ſmooth, hollow-dotted. Seeds almoſt cylindrical, rugged, ferruginous; the inner ones longer, and almoſt ſtraight; the marginal ones ſhorter, bowed in, half involved in the calycine leaflets, both downy: down of the ray ſhort, compoſed of chaffy, toothletted leaflets, which are connate at the baſe, and almoſt equal, or of three only ſhortly awned; down of the diſk compoſed of ſeveral ſhort awl-ſhaped leaflets, and five chaffy ones, ending in a very long toothletted awn [q].

Native of Candia, the county of Nice, and common about Madrid, flowering in may and june; with us in june and july. It was cultivated by Mr. Miller in 1739 [r].

Cavanilles is of opinion that Hyoſeris cretica of Scopoli is H. Hedypnois of Linneus, becauſe he has figured the fruit ſmooth, all the ſeeds with a down, and the flowers three times the ſize as they are in this ſpecies.

Lamarck and Cavanilles refer Hyoſeris minima and foetida to the genus Lapſana, becauſe the ſeeds are naked. Gærtner refers Hyoſeris radiata to Hedypnois: *vol.* 2. *p.* 373. The down or egret being uniform, unequal and ſeſſile. On the contrary he would refer Leontodon hirtum of Linneus to this genus Hyoſeris. See Apargia hirta.

PROPAGATION AND CULTURE.

Theſe are all hardy plants, except the ſixth, and may eaſily be propagated from ſeeds, either ſown in the ſpring, or left to ſcatter of themſelves. The ſixth requires the protection of a green-houſe. They moſtly require a dry ſoil.]

HYPECŎUM. (*From* υπηχεω, *reſono.* Υπηκοον *of Dioſcorides*; Hypecoum *of Pliny.*)

Lin. gen. n. 171. *Schreb. n.* 228. *Tournef.* 115. *Juſſ.* 236. *Gærtn. t.* 115.

Claſſ. 4. 2. Tetrandria Digynia.

Nat. order of *Corydales.—Papaveraceæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* two-leaved, ſmall; *leaflets* ovate, acute, erect, oppoſite, deciduous.

COR. four-petalled: the two outer petals oppoſite, broader, trifid, obtuſe; the two inner alternate with the others, ſemitrifid; the middle ſegment concave, compreſſed, erect.

STAM. *Filaments* four, awl-ſhaped, erect, covered by the middle ſegment of the inner petals. *Anthers* erect, oblong.

PIST. *Germ* oblong, cylindrical. *Styles* two, very ſhort. *Stigmas* acute.

PER. *Silique* long, curved inwards, jointed.

SEED ſolitary in each joint of the pericarp, globular-compreſſed.

OBS. *The ſtamens of* H. erectum *ſeem to be tetradynamous.*

ESSENTIAL CHARACTER.

Cal. two-leaved. *Pet.* four, the two outer broader, and trifid. *Fruit* a ſilique.

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[e] Linn. ſpec.
[f] Hort. kew.
[g] Linn. ſyſt.
[h] Linn. ſpec.
[i] Hort. kew.
[k] Woodw. Mſs.
[l] Lightf. & Pollich.

[m] Villars.
[n] Hort. kew.
[o] Ibid.
[p] Cavanilles.
[q] Gærtner.
[r] Hort. kew.

SPECIES.

Hypecoum procumbens. *Procumbent Hypecoum.*
Lin. ſpec. 181. *Reich.* 1. 353. *hort. upſ.* 31. *cliff.* 38. *Gærtn. fruct.* 2. 164. *Gmel. it.* 2. 197. *Ger. prov.* 371. *Mill. fig. t.* 150. *f.* 1.
Hypecoum. *Bauh. pin.* 172. *Dod. pempt.* 449.—legitimum Cluſii. *Park. theat.* 371. 1. *Raii hiſt.* 1328.—ſiliquoſum. *Bauh. hiſt.* 2. 899.—latiore folio. *Tourn. inſt.* 230. *Garid. aix.* 238.
Cuminum corniculatum, ſ. Hypecoum Cluſii. *Ger.* 909. *emac.* 1067. 3.
Siliques bowed, compreſſed, jointed.

2. Hypecoum pendulum. *Pendulous Hypecoum.*
Lin. ſpec. 181. *Reich.* 1. 353. *hort. upſ.* 31. *Sauv. monſp.* 263. *Ger. prov.* 371. *Pallas it.* 3. 553. *Mill. fig. t.* 150. *f.* 2.
H. alterum. *Park. theat.* 372. 2. *Raii hiſt.* 1328.—ſil. pendentibus non articulatis bivalvibus incurvis. *Mor. hiſt.* 2. 280.
Hypecoi altera ſpecies. *Bauh. pin.* 172.
Cuminum ſylveſtre ſiliquatum Ponæ. *Dalech. hiſt.* 698.—Dioſcoridis alterum ſiliquoſum. *Lob. ic.* 473.—ſiliquoſum. *Ger.* 908. *emac.* 1067. 2.

3. Hypecoum erectum. *Upright Hypecoum.*
Lin. ſpec. 181. *ſyſt.* 167. *Reich.* 1. 353. *Amm. ruth.* 58. *t.* 9. *Hall. goett.* 229.
Siliques erect, round, toruloſe.

DESCRIPTIONS, &c.

1. [Root ſimple, ſometimes bifid, long, but annual, having but few fibres. Leaves divided by many inciſures, ſomewhat reſembling thoſe of Fumitory, pale green, with a tinge of grayiſh or glaucous colour, ſpread on the ground. Stems ſeveral, ſlender, ſomewhat compreſſed[a],] naked at bottom, but having two or three ſmall leaves at top, of the ſame ſhape and colour with the under ones: from among theſe leaves come out the peduncles, each ſuſtaining one ſmall yellow flower. [The fruit is a capſule ſhaped like a ſilique or pod, long, bowing, compreſſed and ancipital, jointed with tranſverſe knots, and grooved with longitudinal ſtreaks, many-celled: the cells in a ſingle longitudinal row, and ſcarcely ſeparating ſpontaneouſly. Seeds from ten to twenty, roundiſh, cut off as it were on one ſide, compreſſed like a lens, ſomewhat wrinkled, dotted in relievo, very dark brown, inſerted alternately into the outer and lower angles of the cells[b].

Native of the South of Europe; and cultivated before 1597, by Gerard[c].] It flowers in june and july, and the ſeeds ripen in auguſt.

2. The ſecond ſort has ſlender ſtalks, which ſtand more erect, and the ſegments of the leaves are longer and much narrower than thoſe of the firſt; the flowers are ſmaller, and come out at the diviſions of the branches. This flowers and ſeeds at the ſame time with the firſt. [The flowers are yellow, like thoſe of greater Celandine, but leſs[d]. Native of the South of France. Cultivated here in 1640[e]. Gerarde calls the firſt Horned Wild Cumin; and this Codded Wild Cumin.]

3. This has much the appearance of the ſecond ſort in leaf and flower, but the pods grow erect, and are writhed and twiſted about. It flowers and ſeeds at the ſame time with the others. Ammann received the ſeeds from Dauria, and Miller from Iſtria. [The latter cultivated it here before 1759. In Syſtema vegetabilium it is obſerved that the ſtamens appear to be tetradynamous.]

The juice of theſe plants is of a yellow colour, reſembling that of Celandine, and is affirmed to have the ſame effect as opium.

PROPAGATION AND CULTURE.

Theſe plants being all annual are propagated by ſeeds, which ſhould be ſown ſoon after they are ripe, on a bed of light freſh earth, where they are to remain; for they ſeldom ſucceed if tranſplanted. When the plants come up, clear them from weeds, and thin them to the diſtance of ſix or eight inches.

When the ſeeds are ſown in the ſpring, and the ſeaſon proves dry, they will not grow the firſt year; but if the ground be kept clear from weeds, and not otherwiſe diſturbed, the plants will come up the following ſpring. The ſeeds will ſometimes lie even till the third ſpring. It is therefore beſt to ſow them in autumn in a warm border; for theſe will make ſtronger plants, more likely to perfect ſeeds than thoſe ſown in ſpring. The ſeeds, when ſown, ſhould be diveſted of their fungous covering, which adheres ſo cloſe that it prevents their growing till it is decayed. If the ſeeds be permitted to ſcatter, they will frequently come up of themſelves, without any care.

Theſe plants are ſeldom cultivated but by thoſe who are curious in botany; ſince, however, they require little trouble, they may have a place in large gardens for variety; and as they take but little room, they may be intermixed with other ſmall annual plants in large borders, where they will make a pretty appearance.

[HYPELATE. (*So named by Browne, from* υπο *and* ελατη *a fir-tree.*)
Lin. gen. Schreb. n. 1588. *Brown. jam.* 208. *Swartz prodr.* 61.
Claſſ. 23. 1. Polygamia Monoecia.

GENERIC CHARACTER.

* HERMAPHRODITE FLOWERS.

CAL. *Perianth* five-leaved (ſeldom four-leaved): *leaflets* ovate, concave, ſpreading, deciduous: two leſs than the others.
COR. *Petals* five, ovate, a little leſs than the calyx, deciduous; with a nectariferous umbilicus about the germ.
STAM. *Filaments* eight, ſpreading, round the baſe of the germ, the length of the corolla. *Anthers* ovate-cordate.
PIST. *Germ* globular, ſuperior. *Style* ſhort, upright. *Stigma* bent down, three-ſided, three-grooved, acute.
PER. *Drupe* pulpy, roundiſh.
SEED. *Nut* oval, very ſmooth, with a ſingle kernel.

* *Male flowers, on the ſame tree, but on a diſtinct panicle.*

CAL. and COR. as in the Hermaphrodite.
Nectary alſo as in that; from the middle of this
STAM. *Filaments* eight, converging at the baſe, from erect reflex and aſcending, broader at the baſe. *Anthers* ovate-cordate.
PIST. three-cornered rudiment of a germ. *Style* awl-ſhaped, very ſmall.

ESSENTIAL CHARACTER.

Cal. five-leaved. *Cor.* five-petalled. *Stigma* bent down, three-cornered. *Drupe* one-ſeeded.

SPECIES.

1. Hypelate trifoliata.
Swartz. prodr. 61. *Brown. jam.* 208. 1.
Cytiſus arboreus, foliis obtuſis, petiolis alatis. *Sloan. jam.* 2. 33. *Raii hiſt.* 3. 473.

DESCRIPTION, &c.

This ſhrubby tree has ſeveral trunks, each as big as the human leg, ſtraight, eight or nine feet high, covered with a ſmooth cinnamon-coloured bark. The branches riſing upright, are all round beſet with leaves, coming out at intervals of an inch, three always together, at the end of a green common foot-ſtalk, a little folioſe or flat, with extant narrow *alæ*, each an inch long, half as broad near the farther end, where broadeſt, and round, beginning narrow, and augmenting to the extremity, of a yellowiſh green colour, very ſmooth, having one middle rib, and ſome tranſverſe ones[a].

Browne obſerves, that it is full of ſlender branches, and furniſhed with many leaves of the ſame texture and grain with thoſe of Lignum-vitæ, but remarkably different both in form and diſpoſition. He had never ſeen the fruit in a perfect ſtate.

Native of Jamaica, where it is very common in the low lands.

HYPERICOIDES. See *Aſcyrum* and *Hypericum.*]

HYPERĪCUM. (Υπερικον *of Dioſcorides.* Υπερεικων, *Nicand. in alexiph.*—Hypericum *of Pliny.*—*From* υπερ, *ſupra, and* εικων, *imago. Linn.* Androſæmum, *q.* ανδρος αιμα, *becauſe it tinges the fingers with red.* Aſcyrum, *q.* ασκυρον, *not hard, very ſoft.*)

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[a] Ray hiſt.
[b] Gærtner.
[c] Hort. kew.
[d] Ray.
[e] Hort. kew.

[a] Sloane.

Lin. gen. n. 902. *Schreb. n.* 1224. *Gærtn. t.* 62. *Tournef. t.* 131. *Juſſ.* 255. Androſæmum. *Tournef.* 128. *Gærtn.* 59. Aſcyrum. *Tournef.* 131.

Claſſ. 18. 4. Polyadelphia Polyandria.

Nat. order of *Rotaceæ.—Hyperica*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-parted; *ſegments* ſubovate, concave, permanent.

COR. *Petals* five, oblong-ovate, obtuſe, ſpreading, wheel-ſhaped, according to the ſun's apparent motion.

STAM. *Filaments* numerous, capillary, united at the baſe in five or three bodies. *Anthers* ſmall.

PIST. *Germ* roundiſh. *Styles* three, (ſometimes one, two or five) ſimple, diſtant, the length of the ſtamens. *Stigmas* ſimple.

PER. *Capſule* roundiſh, with the ſame number of cells as there are ſtyles.

SEEDS very many, oblong.

OBS. Aſcyrum Tourn. *has five ſtyles, with ſimple ſeeds.*

Hypericum T. *has three ſtyles, with a membranaceous pericarp.*

Androſæmum T. *has three ſtyles, with a ſoft coloured pericarp.*

ESSENTIAL CHARACTER.

Cal. five-parted. *Pet.* five. *Filam.* many, connected at the baſe in five bundles.

(*Cal.* five-leaved. *Pet.* five. *Nect.* none. *Capſule.* Hort. kew.)

SPECIES.

* *With five ſtyles.*

1. Hypericum balearicum. *Warted St. John's-wort.*
Lin. ſpec. 1101. *Reich.* 3. 589. *hort. cliff.* 380. *Mill. fig. t.* 54. *Curt. magaz.* 137.
H. f. Aſcyrum fruteſcens, magno flore. *Magn. char.* 260.
Myrtociſtus balearica Pennei in *Ger. herb.* 1098.
M. Thomæ Pennei Angli. *Ger.* 1097. *f.* 4. *emac.* 1279. 16.
M. Pennæi. *Cluſ. hiſt.* 1. 68. *Park. theat.* 665. *f.* 12.
Ciſtus myrtifolius balearicus Pennæi. *Raii hiſt.* 1011.
Stem ſhrubby, leaves and branches warted.

2. Hypericum kalmianum. *Virginia St. John's-wort.*
Lin. ſpec. 1101. *Reich.* 3. 589. *Du Roi harbk.* 1. 310.
H. bartramium. *Mill. dict. n.* 10.
Stem ſhrubby, leaves linear-lanceolate.

[3. Hypericum cayanenſe. *Cayenne St. John's-wort.*
Lin. ſyſt. 699. *ed.* 13. 582. *Reich.* 3. 589. *ſuppl.* 343. *mant.* 277. *Jacqu. amer.* 213. *ed.* 2. 105.
Corollas bearded, calyxes ſtriated, leaves ovate, ſtem ſhrubby.

4. Hypericum bacciferum. *Berry-bearing St. John's-wort.*
Lin. ſyſt. 700. *ed.* 13. 582. *Reich.* 3. 590. *ſuppl.* 344. *mant.* 277.
Coapia. *Marcgr. braſ.* 96. *Piſ. braſ.* 126.
Corollas bearded, calyxes even, leaves ovate, ſtem ſhrubby.]

5. Hypericum calycinum. *Great-flowered St. John's-wort,* or *Tutſan.*
Lin. ſyſt. 700. *Reich.* 3. 590. *mant.* 106. *Giſeke ic. faſc.* 1. *t.* 18. *Ait. hort. kew.* 3. 103. *Curt. magaz.* 146.
H. Aſcyron. *Mill. dict. n.* 7.
Androſæmum conſtantinopolitanum flore maximo. *Wheler itin.* 205. *fig. Raii hiſt.* 1017.
A. fl. et theca quinquecapſulari omnium maximis. *Mor. hiſt.* 2. 472.
Flowers ſolitary, ſtem ſuffruticoſe, branched, calyxes obovate, very blunt, leaves diſtich, oblong.

[6. Hypericum pyramidatum. *Pyramidal St. John's-wort.*
Ait. hort. kew. 3. 103.
Flowers ſubpanicled, ſtem ſlightly four-cornered, herbaceous, branched, calyxes ovate, acute.

7. Hypericum alternifolium. *Alternate-leaved St. John's-wort.*
Vahl ſymb. 2. 85. *t.* 42.
Flowers axillary, ſolitary, leaves lanceolate, alternate, ſtem ſhrubby.

8. Hypericum ſyriacum. *Syrian St. John's-wort.*
H. alternifolium. *Billardiere ic. ſyr.* 2. 17. *t.* 10.
Calyxes leafy, ſtem herbaceous, leaves alternate, ovate, acute.

9. Hypericum guineenſe. *Guinea St. John's-wort.*
Lin. ſyſt. 700. *Reich.* 3. 591. *ſuppl.* 344. *diſſ. de Hyper.* 4. *t.* 1. *f.* 1.
Flowers ſubumbelled, ſtem ſhrubby, branches round, leaves ovate, acute.

10. Hypericum petiolatum.
Lin. ſyſt. 700. *ſuppl.* 345. *Lour. cochinch.* 472.
Stem arboreous, leaves ovate.

11. Hypericum patulum.
Lin. ſyſt. 700. *Thunb. jap.* 295.
Flowers ſolitary, terminating, ſtem fruteſcent, lax, leaves ovate, rolled back at the edge.

12. Hypericum Aſcyron.
Lin. ſpec. 1102. *ſyſt.* 700. *Reich.* 3. 591. *hort. upſ.* 236. *cliff.* 380. *Gmel. ſib.* 4. 178. *t.* 69.
Aſcyrum magno flore. *Bauh. pin.* 280. *prodr.* 130.
Stem four-cornered, herbaceous, erect, ſimple, leaves even, quite entire.]

* * *With three ſtyles.*

13. Hypericum Androſæmum. *Common Tutſan.*
Lin. ſpec. 1102. *Reich.* 3. 592. *hort. upſ.* 237. *cliff.* 380. *Hudſ. angl.* 332. *Wither. arr.* 812. *ed.* 3. 663. *Curt. lond.* 3. 48. 206. *Lightf. ſcot.* 415. *Villars dauph.* 3. 495. *Krock. ſileſ. n.* 1228.
Androſæmum. *Dod. pempt.* 78. 2. *Lob. obſ.* 357. 3. *ic.* 1. 632. 1. *Blackw. herb. t.* 94.—maximum fruteſcens. *Bauh. pin.* 280.—bacciferum. *Mor. hiſt. ſ.* 5. *t.* 6. *f.* 12.—vulgare. *Park. theat.* 576. 1. *Gærtn. fruct.* 1. 282. *t.* 59. *Raii hiſt.* 1020.—officinale. *Allion. pedem. n.* 1440.
H. maximum Androſæmum vulgare dictum. *Raii ſyn.* 343. *Petiv. brit. t.* 60. *f.* 9.
Clymenum Italorum. *Ger.* 435. *emac.* 543. 1.
Fruits berried, ſtem ſhrubby, ancipital.

14. Hypericum olympicum. *Olympian St. John's-wort.*
Lin. ſpec. 1102. *Reich.* 3. 592. *hort. cliff.* 380. *Mill. fig. t.* 151. *f.* 1. *Lour. cochinch.* 471?
H. montis Olympi. *Wheler itin.* 22. *Raii hiſt.* 1017. *Dill. elth.* 182. *t.* 151. *f.* 183.
H. orientale flore magno. *Tournef. cor.* 19.
Calyxes acute, ſtamens ſhorter than the corolla, ſtem ſhrubby.

[15. Hypericum folioſum. *Shining St. John's-wort.*
Ait. hort. kew. 3. 104.
Stamens the length of the petals, calyxes lanceolate, acute, leaves oval-oblong, ſeſſile, ſmooth.

16. Hypericum floribundum. *Many-flowered St. John's-wort.*
Ait. hort. kew. 3. 104. *Comm. hort.* 2. 135. *t.* 68. *Pluk. phyt. t.* 302. *f.* 1.
Calyxes ovate, acute, ſubciliate, ſtamens ſhorter than the corolla, leaves lanceolate-elliptic, ſtem ſhrubby.

17. Hypericum arboreſcens. *Tree St. John's-wort.*
Vahl ſymb. 2. 86. *t.* 43.
Corollas and calyxes even, ſmooth, leaves elliptic, racemes brachiate, ſtem arboreſcent.

18. Hypericum gramineum. *Graſs-leaved St. John's-wort.*
Forſt. fl. auſtral. n. 281. *Vahl. ſymb.* 2. 86.
Stem herbaceous, four-cornered, dichotomous, leaves oblong-parabolic (*ovate-lanceolate*).

19. Hypericum chinenſe. *Chineſe St. John's-wort.*
Retz. obſ. 5. 27. *n.* 73.
Peduncles axillary, two-flowered; leaves ovate-lanceolate, quite entire.

20. Hypericum cochinchinenſe. *Cochinchineſe St. John's-wort.*
Lour. cochinch. 472.
Peduncles axillary, five-flowered or thereabouts, leaves ſubpetioled, very cloſe together, ſtem arboreous.

21. Hypericum petiolatum.
Lin. ſpec. 1102. *Reich.* 3. 592.
Leaves ovate, petioled, quite entire, tomentoſe underneath, ſtem ſhrubby, four-cornered, compreſſed.]

22. Hypericum canarienſe. *Canary St. John's-wort.*
Lin. ſpec. 1103. *Reich.* 3. 592. *hort. cliff.* 381. *Mill. dict. n.* 4.
Calyxes blunt, ſtamens ſhorter than the corolla, ſtem ſhrubby.

[23. Hypericum elatum. *Tall St. John's-wort.*
Ait. hort. kew. 3. 104.
Calyxes lanceolate-ovate acute, ſtamens longer than the corolla, leaves ovate-oblong, ſtem ſhrubby.]

24. Hypericum hircinum. *Stinking Shrubby St. John's-wort.*
Lin. ſpec. 1103. *Reich.* 3. 593. *hort. cliff.* 331. *upſ.* 237. *Dill. elth.* 182. *t.* 151. *f.* 181, 182.
Androſæmum fœtidum capitulis longiſſimis filamentis donatis. *Bauh. pin.* 280.
A. foetidum. *Park. theat.* 576. *f.* 4. *Raii hiſt.* 1017.
Tragium. *Cluſ. hiſt.* 2. 305. *Bauh. hiſt.* 3. 385.
Stamens longer than the corolla, ſtem ſhrubby ancipital.

[25. Hypericum ægypticum. *Egyptian St. John's-wort.*
Lin. ſpec. 1103. *ſyſt.* 700. *Reich.* 3. 599. *diſſ. de Hyper. t.* 1. *f.* 3.
Nectaries of the petals lanceolate, ſtems ſuffruticoſe compreſſed.

26. Hypericum orientale. *Oriental St. John's-wort.*
Lin. ſpec. 1103. *Reich.* 3. 593.
H. orient. ptarmicæ foliis. *Tournef. cor.* 18. *itin.* 2. 97. *t.* 97. *ed. oct.* 3. 64.—4° 2. *p.* 219. *t.* 220.
Stipules reflex, leaves oblong toothletted crenate.

27. Hypericum ſcabrum. *Rugged St. John's-wort.*
Lin. ſpec. 1104. *Reich.* 3. 593. *amoen.* 4. 287.
H. orientale. caule aſpero purpureo. *Tournef. cor.* 19.
Stem round ſuffruticoſe muricated, leaves oblong.

28. Hypericum repens. *Creeping St. John's-wort.*
Lin. ſpec. 1103. *Reich.* 3. 593. *amoen.* 4. 287. *Tournef. cor.* 19.
Stem round creeping, leaves lanceolate-linear obtuſe.

29. Hypericum prolificum. *Proliferous St. John's-wort.*
Lin. ſyſt. 701. *Reich.* 3. 593. *mant.* 106. *Murr. in comm. gott.* 1780. *p.* 22. *t.* 7. *Gron. virg.* 112.
Primordial flowers ſeſſile, ſtem ancipital ſhrubby, leaves lanceolate-linear.

30. Hypericum ericoides. *Heath-leaved St. John's-wort.*
Lin. ſpec. 1104. *Reich.* 3. 594. *Pluk. phyt. t.* 93. *f.* 5.
H. tomentoſum luſitanicum minimum. *Tournef. inſt.* 256.
Leaves linear imbricated.

31. Hypericum canadenſe. *Canadian St. John's-wort.*
Lin. ſpec. 1104. *Reich.* 3. 594.
Leaves linear-lanceolate, ſtem herbaceous quadrangular, pericarps coloured, twice as long as the calyx.

32. Hypericum virginicum. *Virginian St. John's-wort.*
Lin. ſpec. 1104. *ſyſt.* 701. *Reich.* 3. 594. *mant.* 455.
Gardenia Coldenia. *Act. edinb. vol.* 2. (1756) *p.* 2.
Flowers nine-ſtamened, ſtem round, leaves ovate embracing.

33. Hypericum mexicanum. *Mexican St. John's-wort.*
Lin. ſyſt. 701. *Reich.* 3. 594. *ſuppl.* 345. *diſſ. de Hyper.* 5. *f.* 2.
Branches ſimple, leaves imbricate ovate.

34. Hypericum lævigatum. *Smooth St. John's-wort.*
Ait. hort. kew. 3. 106.
Leaves ovate ſomewhat ſtem-claſping, calycine leaflets ovate acute, panicle trichotomons, middle flower ſeſſile.

35. Hypericum reflexum. *Reflex-leaved St. John's-wort.*
Lin. ſyſt. 701. *ſuppl.* 346.
Leaves ſeſſile lanceolate approximating reflex, branches tomentoſe, panicle terminating.]

36. Hypericum quadrangulum. *Square-ſtalked St. John's-wort* or *St. Peter's-wort.*
Lin. ſpec. 1104. *Reich.* 3. 595. *hort. cliff.* 380. *fl. ſuec. n.* 679. *Hudſ. angl.* 334. *Wither. arr.* 813. *ed.* 3. 663. *Curt. lond.* 4. 52. 231. *Lightf. ſcot.* 416. *Relh. cant. n.* 556. *Hall. helv. n.* 1038. *Scop. carn. n.* 943. *Neck. gallob.* 318. *Leers herborn. n.* 593. *Pollich pal. n.* 716. *Flor. dan. t.* 640. *Villars dauph.* 3. 496. *Krock. ſileſ. n.* 1229. *Crantz. auſtr.* 98. *D'Aſſo arag.* 739.
H. vulgare minus, caule quadrangulo, foliis non perfoliatis. *Bauh. pin.* 279.
H. Aſcyron dictum, caule quadrangulo. *Bauh. hiſt.* 3. 382. *icon tranſpoſ. p.* 344. *Raii ſyn.* 344. *Tourn. inſt.* 255. *par.* 1. 180. *engl. edit.* 2. 30. *Garid. aix.* 238.
H. in dumetis naſcens. *Trag.* 73.
Aſcyrum. *Dod. pemp.* 78. 1. *Matth.* 937. *Lob. obſ.* 216. *ic.* 399. 1. *Dalech. hiſt.* 1155. *Cæſalp.* 385. *Ger.* 434. *emac.* 542. *Raii hiſt.* 1019. *Petiv. brit. t.* 60. *f.* 11.—vulgare. *Park. theat.* 575.—caule quadrangulo. *Mor. hiſt. ſ.* 5. *t.* 6. *f.* 10.
Leaves ovate with pellucid dots, ſtem quadrangular herbaceous.

37. Hypericum perforatum. *Common* or *perforated St. John's-wort.*
Lin. ſpec. 1105. *ſyſt.* 701. *Reich.* 3. 595. *hort. cliff.* 380. *fl. ſuec. n.* 680. *mat. med.* 177. *Woodv. med. bot.* 29. *t.* 10. *Hudſ. angl.* 333. *Wither. arr.* 813. *ed.* 3. 644. *Lightf. ſcot.* 416. *Curt. lond.* 1. 57. *Engl. bot.* 295. *Relh. cant. n.* 554. *Gærtn. fruct.* 1. 300. *Hall. helv. n.* 1037. *Scop. carn. n.* 944. *Gmel. ſib.* 4. 179. *n.* 4. *Pollich pal. n.* 717. *Leers herborn. n.* 595. *Allion. pedem. n.* 1429. *Villars dauph.* 3. 495. *Krock. ſileſ. n.* 1230. *Fl. dan. t.* 1043. *Mill. illuſtr. Blackw. herb. t.* 15.
H. officinarum. *Crantz. auſtr.* 99.
Hypericum. *Dod. pempt.* 76. 1. *Brunfels.* 3. 81. *Matth.* 936. *Fuchſ.* 831. *Lob. obſ.* 216. 1. *ic.* 1. 398. 1. *Beſl. eyſt. æſt.* 8. *t.* 10. *f.* 3. *Ger.* 432. 1. *emac.* 539. 1. *Raii hiſt.* 1018. *ſyn.* 342. *Petiv. brit. t.* 60. *f.* 5.—vulgare. *Bauh. pin.* 279. *Park. theat.* 573. 1. *Mor. hiſt. ſ.* 5. *t.* 6. *f.* 1. *Neck. gallob.* 319.—ſ. Perforata, &c. *Bauh. hiſt.* 3. 381. *Trag.* 72. 1.
Stem ancipital, leaves blunt with pellucid dots.

[38. Hypericum dubium. *Imperforate St. John's-wort.*
Leers herborn. n. 594. *Engl. bot.* 296. *Wither. arr.* 664.
H. delphinenſe. *Villars dauph.* 3. 497. *t.* 44.
Stem imperfectly four-edged, leaves blunt without pellucid dots, calycine leaflets elliptical.

39. Hypericum humifuſum. *Trailing St. John's-wort.*
Lin. ſpec. 1105. *Reich.* 3. 596. *fl. ſuec. n.* 681. *Hudſ. angl.* 332. *Wither. arr.* 814. *ed.* 3. 665. *Lightf. ſcot.* 418. *Curt. lond.* 3. 50. 162. *Relh. cant. n.* 552. *Hall. helv. n.* 1039. *Neck. gallob.* 319. *Pollich pal. n.* 718. *Fl. dan. t.* 141. *Allion. pedem. n.* 1436. *Villars dauph.* 3. 504. *Krock. ſileſ. n.* 1232.
H. minus. *Dod. pempt.* 76. 2.—ſupinum. *Park. theat.* 572. *Raii hiſt.* 1019. *ſyn.* 343. *Petiv. brit. t.* 60. *f.* 8.—ſup. glabrum. *Ger. emac.* 541. 4.—minus ſup. vel ſup. glabr. *Bauh. pin.* 279.—minimum ſup. *Bauh. hiſt.* 3. 386. 1.—ſeptentrionale. *Lob. ic.* 1. 400. 1. *Mor. hiſt.* 2. *ſ.* 5. *t.* 6. *f.* 3.—ſup. 3. minimum. *Cluſ. hiſt.* 2. 181. 3.—exiguum & primum. *Trag.* 72. 2.
Flowers axillary ſolitary, ſtems ancipital proſtrate filiform, leaves ſmooth.

40. Hypericum criſpum. *Curled-leaved St. John's-wort.*
Lin. ſyſt. 701. *Reich.* 3. 596. *mant.* 106. *Bocc. muſ.* 2. 31. *t.* 12.
H. triquetrifolium. *Turr. farſ.* 12.
H. folio breviore. *Bauh. pin.* 279.
H. fol. parvis criſpis ſ. ſinuatis, ſiculum. *Raii hiſt.* 1018.
Stem round, leaves ſeſſile lanceolate waved and toothed at the baſe.

41. Hypericum linarifolium. *Toadflax-leaved St. John's-wort.*
Vahl ſymb. 1. 65.
H. luſitanicum linariæ folio. *Tournef. inſt.* 256.
Calyxes ſerrate-glandular, ſtem round upright, leaves linear blunt ſmooth.

42. Hypericum montanum. *Mountain St. John's-wort.*
Lin. ſpec. 1105. *Reich.* 3. 597. *fl. ſuec. n.* 683. *Hudſ. angl.* 333. *Wither. arr.* 815. *ed.* 3. 666. *Lightf. ſcot.* 418. *Sibth. oxon. n.* 665. *Hall. helv. n.* 1042. *Pollich pal. n.* 716. *Leers herborn. n.* 596. *Crantz. auſtr.* 99. *n.* 6. *Fl. dan. t.* 173. *Villars dauph.* 3. 498. *Krock. ſileſ. n.* 1233.
H. elegantiſſimum non ramoſum, folio lato. *Bauh. hiſt.* 3. 383. 2. *Raii hiſt.* 1021. *ſyn.* 343. *Petiv. brit. t.* 60. *f.* 7. *Tourn. par.* 1. 18. *engl. ed.* 2. 29.
H. in dumetis naſcens primum. *Trag.* 73. 3.
Androſæmum campoclarenſe. *Col. ecphr.* 1. 73. *t.* 74. 1.
Aſcyrum. *Fuchſ. hiſt.* 74.—ſ. H. bifolium glabrum

non perforatum. *Bauh. pin.* 280. *Mor. hiſt. ſ.* 5. *t.* 6. *f.* 9.

Calyxes acute ſerrate-glandular, ſtem round upright, leaves oblong ſmooth embracing ſharpiſh.

43. Hypericum barbatum. *Bearded-flowered St. John's-wort.*

Lin. ſyſt. 701. *Reich.* 3. 597. *diſſ. de Hyper.* 6. *Jacqu. auſtr.* 3. *t.* 259. *Allion. pedem. n.* 1435.

H. Richeri. *Villars dauph.* 3. 501. *t.* 44.

Calyxes and petals ciliate and dotted, leaves dotted.

44. Hypericum glanduloſum. *Glandulous St. John's-w.* *Ait. hort. kew.* 3. 107. *Vahl ſymb.* 2. 86.

Calyxes ſerrate-glandular, leaves lanceolate glandular at the edge, ſtem ſhrubby.

45. Hypericum hirſutum. *Hairy St. John's-wort.*

Lin. ſpec. 1105. *Reich.* 3. 598. *hort. cliff.* 380. *Fl. ſuec. n.* 682. *Hudſ. angl.* 333. *Wither. arr.* 816. *ed.* 3. 666. *Curt. lond.* 3. 49. 182. *Lightf. ſcot.* 419. *Relh. cant. n.* 555. *Hall. helv. n.* 1043. *Scop. carn. n.* 945. *Gmel. ſib.* 4. 178. *n.* 2. *Leers herborn. n.* 597. *Pollich pal. n.* 720. *Krock. ſileſ. n.* 1234. *Villars dauph.* 3. 499. *Fl. dan. t.* 802.

H. villoſum. *Crantz. auſtr.* 96.

H. vill. erectum, caule rotundo. *Tournef. inſt.* 255. *par. ed. angl.* 2. 32.

H. Androſæmum. *Bauh. hiſt.* 3. 382. 2. *Raii ſyn.* 343.

H. majus ſ. Androſæmum Matthioli. *Park. theat.* 576. 2. *Raii hiſt.* 1020. *Petiv. brit. t.* 60. *f.* 10.

Androſæmum alterum hirſutum. *Col. ecphr.* 1. 74. *f.* 75. *Mor. hiſt. ſ.* 5. *t.* 6. *f.* 11.

A. hirſutum (non ſynon.)—&, alterum foliis hyperici. *Bauh. pin.* 280.

A. hypericoides. *Ger. emac.* 543. 2.

Ruta ſylveſtris hypericoides. *Dod. pempt.* 77.

Calyxes ſerrate-glandular, ſtem round upright, leaves ovate ſubpubeſcent.

46. Hypericum tomentoſum. *Woolly St. John's-wort.*

Lin. ſpec. 1106. *ſyſt.* 702. *Reich.* 3. 598. *Gouan hort. monſp.* 402. *Raii hiſt.* 1020.

H. ſupinum tomentoſum minus vel monſpeliacum. *Bauh. pin.* 279.—ſup. toment. alterum. *Cluſ. hiſt.* 2. 181.

β. H. ſupin. toment. majus vel hiſpanicum. *Bauh. pin.* 279. *Raii hiſt.* 1020.—ſup. tom. hiſpan. *Cluſ. hiſt.* 2. 181.

Calyxes ſerrate-glandular, leaves half-ſtem-claſping flexuoſe tomentoſe, ſtems proſtrate.

47. Hypericum perfoliatum. *Perfoliate St. John's-wort.*

Lin. ſyſt. 702. *Reich.* 3. 596. *diſſ. de Hyper.* 5. *Krock. ſileſ. n.* 1237.

Stem ſubancipital, leaves ſtem-claſping ovate, cyme with ſeſſile flowers.

48. Hypericum elodes. *Marſh St. John's-wort* or *St. Peter's-wort.*

Lin. ſpec. 1106. *Reich.* 3. 597. *Hudſ. angl.* 334. *Wither. arr.* 815. *ed.* 3. 665. *Engl. bot.* 109. *Neck. gallob.* 391.

Aſcyrum ſupinum villoſum paluſtre. *Bauh. pin.* 280. *Park. theat.* 574. *Raii hiſt.* 1020. *ſyn.* 344. *Pet. brit. t.* 60. *f.* 12.

A. ſupinum elodes. *Cluſ. hiſt. app. alt.* *Ger. emac.* 542. 2.

Stem round creeping villoſe, leaves villoſe roundiſh.

49. Hypericum pulchrum. *Elegant St. John's-wort.*

Lin. ſpec. 1106. *Reich.* 3. 599. *mant.* 456. *Hudſ. angl.* 332. *Wither. arr.* 817. *ed.* 3. 667. *Curt. lond.* 1. 56. *Lightf. ſcot.* 420. *Relh. cant. n.* 553. *Hall. helv. n.* 1041. *Pollich. pal. n.* 721. *Fl. dan. t.* 75. *Krock. ſileſ. n.* 1235. *Villars dauph.* 3. 500.

H. pulchrum. *Tragi* 74. *Bauh. hiſt.* 3. 383. 1. *Ger. emac.* 540. *Raii hiſt.* 1019. *ſyn.* 342. *Pet. brit. t.* 60. *f.* 6.

H. minus erectum. *Bauh. pin.* 279. *Tourn. inſt.* 255. *par.* 1. 180. *ed. angl.* 2. 29.

H. minus glabrum erectum pulchrum. *Mor. hiſt.* 2. 470.

Androſæmum. *Lonic.* 1. 130. 2.

Calyxes ſerrate-glandular, ſtem round, leaves ſtem-claſping cordate ſmooth.

50. Hypericum nummularium. *Money-wort-leaved St. John's-wort.*

Lin. ſpec. 1106. *Reich.* 3. 599. *Villars dauph.* 3. 503. *Pluk. phyt. t.* 93. *f.* 4.

H. nummulariæ folio. *Bauh. pin.* 279. *prodr.* 130. *Park. theat.* 572. *Raii hiſt.* 1019.

Androſæmum ſupinum ſaxatile, nummulariæ folio averſa parte rubente. *Bocc. muſ.* 2. 134. *t.* 91.

Calyxes ſerrate-glandular, leaves cordate-orbicular ſmooth.

51. Hypericum japonicum. *Japoneſe St. John's-wort.*

Lin. ſyſt. 702. *Thunb. jap.* 295. *t.* 31.

Leaves ſeſſile ovate entire, ſtem herbaceous four-cornered decumbent at the baſe.

52. Hypericum erectum. *Upright St. John's-wort.*

Lin. ſyſt. 702. *Thunb. jap.* 296.

Leaves ſtem-claſping lanceolate acute, ſtem round herbaceous

53. Hypericum Coris. *Heath-leaved St. John's-wort.*

Lin. ſpec. 1107. *Reich.* 3. 600. *Gron. orient.* 240. *Hall. helv. n.* 1040. *Curt. magaz.* 178.

Coris lutea. *Bauh. pin.* 280. *Mor. hiſt. ſ.* 5. *t.* 6. *f.* 4.

C. hypericoides. *Bauh. hiſt.* 3. 384. *Raii hiſt.* 1018.

C. Matthioli, & legitima cretica Belli. *Park. theat.* 570. *f.* 1, 2.

C. Matthioli. *Ger. emac.* 544.

Calyxes ſerrate-glandular, leaves ſubverticillate.

*** *With two ſtyles.*

54. Hypericum mutilum.

Lin. ſpec. 1107. *ſyſt.* 702. *Reich.* 3. 600. *Gron. virg.* 112.

Leaves ovate ſeſſile.

55. Hypericum ſetoſum. *Briſtly St. John's-wort.*

Lin. ſpec. 1107. *Reich.* 3. 600. *Gron. virg.* 88. *Pluk. alm.* 189.

Leaves linear.

**** *With one ſtyle.*

56. Hypericum revolutum.

Vahl ſymb. 1. 66.

H. kalmianum. *Forſk. arab.* 118. *n.* 469.

Leaves linear-lanceolate rolled back at the baſe, ſtamens ſhorter than the corolla.]

57. Hypericum monogynum. *Chineſe St. John's-wort.*

Lin. ſpec. 1107. *Mill. dict. n.* 11. *fig. t.* 151. *f.* 2. *Curt. magaz.* 334. *Thunb. jap.* 297.

H. chinenſe. *Lin. ſyſt.* *Reich.* 3. 600.

H. aureum. *Lour. cochinch.* 472.

Stamens longer than the corolla, calyxes coloured; ſtem ſhrubby.

DESCRIPTIONS, *&c.*

[Theſe are herbs, ſhrubs or underſhrubs, with cylindrical, ancipital or quadrangular ſtems. Leaves frequently with pellucid dots. Flowers ſometimes in cymes, but more frequently in corymbs, with the peduncles often trichotomous and three-flowered, terminating or axillary alſo [a]. Corolla yellow.

This numerous genus is divided by Linneus into four ſubordinate parts from the number of ſtyles. The predominating number however is three. Juſſieu remarks, that it might be ſplit into ſix genera. 1. Aſcyrum, (one to twelve) with five ſtyles, and a capſule with five cells; to which may be added Aublet's ſpecies from Guiana, t. 311, 312. turgid with a yellow reſinous juice, and hence allied to the Guttiferæ. 2. Hypericum properly ſo called, (14, &c.) with three ſtyles, and a three-celled capſule, with the pencils of filaments, ſcarcely united at the baſe. 3. Androſæmum, (13, &c.) with a ſoft pericarp reſembling a berry, almoſt one-celled, turgid with a blood-red juice. This diviſion has three ſtyles, and in other reſpects reſembles that immediately preceding. 4. Elodea of Adanſon, (48, &c.) with three ſtyles and a pericarp of three cells, the filaments united up to the middle, the diſk of the germ glandular, as are alſo the claws of the petals. 5. Kniſa of Adanſon, (54, 55.) with two ſtyles, and a two-celled pericarp. 6. Komana of Adanſon, with one ſtyle, or five ſtyles ſo cloſely joined as to ſeem one. (56, 57.)

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[a] Juſſieu gen.

Whatever may be thought of theſe diſtinctions, for dividing this natural genus; they will be of conſiderable uſe in diſtinguiſhing the numerous ſpecies.]

1. Warted St. John's-wort riſes with a ſlender ſhrubby ſtalk, in this country, about two feet high, but in its native ſoil it acquires the height of ſeven or eight feet, ſending out ſeveral weak branches of a reddiſh colour, and marked with ſcars where the leaves have fallen off. Leaves ſmall, oval, waved on their edges, and having ſeveral ſmall protuberancies on their under ſide: they ſit cloſe to the branches, half embracing them at the baſe. Flowers terminating, large, bright yellow. Stamens a little ſhorter than the petals. Capſules pyramidal, having a ſtrong ſmell of turpentine, and filled with ſmall brown ſeeds.

[Linneus obſerves that the ſtems are quadrangular, with glandular dots in racemes ſcattered over them; the leaves flexuoſe with warted glands at the edge; the flowers ſolitary. Mr. Curtis however remarks, that the flowers are not always ſolitary, but frequently form a ſort of corymbus.]

This plant was diſcovered in Majorca by Dr. Thomas Penny, a phyſician of London, who ſent it to Lobel and Cluſius, in the year 1580, under the name Myrto-Ciſtus, from the reſemblance of the leaves to Myrtle, and the gummy ſubſtance exuding from the plant as in Ciſtus. From that time the plant ſeems to have been known only from Cluſius, whoſe figure is very indifferent, till about the year 1714, when Mr. Salvadore, an apothecary of Barcelona, went to Majorca in ſearch of plants, found this in great plenty, and ſent dried ſamples of it to England and Holland, ſome of which having ripe ſeeds on them were ſown; and from theſe one plant was raiſed in the Chelſea garden, and another by Boerhaave at Leyden in 1717. From theſe many plants were raiſed by cuttings, and diſtributed to moſt of the curious gardens in Europe. It has a ſucceſſion of flowers great part of the year, which renders it valuable. [Gerarde calls it the Reverende D. Penny his Ciſtus; the title of Reverend is omitted by Johnſon, and therefore I conclude it was a miſtake.]

2. This riſes with an upright herbaceous ſtalk three feet and a half high, ſending out ſeveral ſmall branches at top, which come out oppoſite. Leaves oblong, oppoſite, half-ſtem-claſping. At the end of each branch is produced one pretty large flower, with a blunt calyx. Stamens equal in length with the petals. Styles ſo cloſely joined as to appear but one. Stigmas reflexed.

[Linneus deſcribes it as ſhrubby, with quadrangular branches. Leaves ſmooth, like thoſe of Roſemary or Lavender. Flowers in a dichotomous terminating corymb, compoſed of three or ſeven flowers. Capſule ovate, the length of the calyx, which is bluntiſh and lanceolate. Styles five, very ſlender.—Reichard affirms that it has only three ſtyles.

Native of North America, where it was found by Bartram, and in Virginia by Kalm. It was cultivated by Miller before 1759.

3. This is an upright branching tree, eighteen feet in height. Leaves oppoſite, petioled, quite entire, rugged, acute, ſhining, marked with black dots, two or three inches in length. Racemes compound, terminating. Petals white, hirſute within, as in Gordonia Laſianthus. Nectareous glands five, ovate, the length of the germ, alternate with the pencils of ſtamens. Filaments five, divided at top into a pencil. Anthers globular. Fruit a berry, with a fulvous ſtaining juice. Seeds numerous. It ſhould be diſtinguiſhed from Gordonia Laſianthus, which has alſo a hirſute corolla, but the leaves in this are oppoſite and quite entire.

Native of Cayenne[b].

4. This is a ſhrub three fathoms in height, upright and brachiate; with quadrangular branches. Leaves oppoſite, acuminate, quite entire, ſomewhat veined, ſhining, hoary underneath, a ſpan in length; on ſhort, round petioles, channelled above. Flowers terminating, panicled, on ſhort pedicels. Calycine leaflets five, ovate, acute, ſcarioſe at the edge, ſpreading. Filaments in five ſets, the baſe of which is a flat, upright, pencil-form column. Anthers roundiſh. Germ ovate, five-cornered. Styles five, upright, permanent. Fruit an ovate acuminate berry, ſlightly five-cornered, five-celled. Seeds numerous oblong, in a double row. The whole plant abounds in a viſcid tough ſaffron-coloured juice. It has diſtinct nectaries, like the preceding, alternate with the ſets of ſtamens, from which it is doubtful whether it be diſtinct[c].—Native of Mexico; and Braſil.]

5. The ſtalks of the large-flowering Tutſan are ſlender and incline downwards. Leaves ſmooth, placed in pairs. Flowers very large, bright yellow. Capſules pyramidal.

[Stems evergreen, branched, red, quadrangular. Leaves ovate-oblong, of a firm conſiſtence, blunt, quite entire, ſubſeſſile, three or four times as long as the internodes. Flowers terminating, peduncled, ſolitary. Calyx membranaceous, with ovate blunt leaflets, the length of the germ, twice as large in the ripe fruit. Corolla twice as long as the calyx. Stamens yellow, ſhorter than the corolla. Germ red. It has the habit of H. Androſæmum[d].

To this we may add from Ray that the ſtem is not more than a ſpan high, that the petals are bowed or arched inwards, and that the capſules are three times as large as any of the other ſpecies.

The ſtems are only tinged with red in places. The leaves on the young ſhoots are of a beautiful light green, of a regular ovate form, and half embrace the ſtem, on the older branches they are of a very dark green and glaucous on the back, rather ſubſeſſile, and frequently drawn out more in length. The flowering peduncle is upright, little more than half an inch in length, and has a pair of ovate bractes at its baſe hollowed like the bowl of a ſpoon: the fruiting peduncle is near an inch long, and arches downwards, ſo that the capſule hangs below the horozontal line; it is accompanied with the calyx at the baſe and the ſtyles at the top, and loſes its red colour.

Native of the country near Conſtantinople. Introduced in 1676, by Sir George Wheler, Bart. It flowers from june to ſeptember[e]: and ſome flowers ſtill remain this 28th day of october 1796, on which I am writing this article.

It is very hardy, and increaſes much by the creeping roots. Like the Periwinkle, it is a plant well adapted to cover a bank, or bare ſpots under trees, where few other plants will thrive[f].

6. The native country of this is not known. It was cultivated in 1764, by Mr. James Gordon; and flowers in july and auguſt[g].

7. Stem arboreſcent, with a ſmooth aſh-coloured bark. Branches ſcattered, round, ſmooth. Leaves ſeſſile, two or three inches long, ſcattered, coriaceous, broad-lanceolate, narrower at the baſe, obſcurely veined, very ſmooth. Peduncles one-flowered, an inch in length, angular, with three ſmall leaflets towards the top, of the ſame form with the branch-leaves. Calycine leaflets coriaceous, rounded, ſmooth, one-third of the length of the corolla, even. Petals entire. Germ five-cornered, ovate, acuminate, ſmooth. Styles reflex.—Found in the Eaſt Indies by Koenig[h].

8. This is a glaucous plant. Stem a foot high and more, upright, ſingle or branched; branches alternate, flexuoſe, one-flowered. Leaves thickiſh, with impreſſed dots on both ſides. Flowers panicled, on the branches ſolitary, terminating. Calyx ſcarcely divided beyond the middle; ſegments ovate, acuminate, ſurrounded at the baſe with leafy ſcales. Petals ovate, much more produced on one ſide, concave, coriaceous, with ſcales on each ſide at the claw, embracing the alternate petals. Filaments united at the baſe into five or more ſets. Anthers orbiculate, peltate. Styles the length of the ſtamens.—Found by Billardiere in dry ſpots, near the deſert of Syria[i].

9. This is a ſhrub with an aſh-coloured bark. Branches even, round; on each branchlet two pairs of leaves, the lower pair ſmaller. Leaves oppoſite, petioled, acuminate, even, quite entire. Peduncle op-

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[b] Linn. and Jacq.

[c] Linn.

[d] Ibid.

[e] Hort. kew.

[f] Curtis.

[g] Hort. kew.

[h] Vahl.

[i] Billard.

poſite, by the ſide of the upper pair of leaves, ſpreading, the length of the leaf, bifid or trifid, many-flowered, ſubumbelled. Calycine ſegments lanceolate. Petals upright, ſpreading above the middle. Nectary of five ovate glands. Filaments ſhort, united at the baſe in five ſets, faſtened to the bottom of the petals, and ſhorter than they are. Germ ovate, five-cornered. Found in Guinea by Andr. Berlin[k].

10. This is a tree with the appearance of Bay. Leaves oppoſite, petioled, acute, quite entire, ſmooth, like thoſe of Bay, with tranſverſe veins. Panicle terminating, brachiate, the length of the leaf. Petals obovate, ſtraighter on one ſide, the length of the calyx. Five minute nectareous ſcales alternate with the ſtamens. Germ the length of the calyx. Berry ovate, with five ſwellings, and five cells. The tree abounds with a ſaffron-coloured viſcid juice[l].

Loureiro has deſcribed a plant which he found near Canton in China under this name, but differing very much in the deſcription. The ſtem is ſhrubby, manifold, three feet high, angular, diffuſed. Leaves broad-lanceolate, quite entire, ſcarcely tomentoſe, oppoſite, petioled. Flowers reddiſh-yellow, axillary and terminating, on few-flowered peduncles. Stamens in three elevated ſets, with as many large alternate glands at the baſe. Styles three. Capſule three-celled.

According to Linneus, it was found in New Granada by Mutis.

11. Branches round, purpliſh, flexuoſe-aſcending, ſpreading, weak, ſmooth. Leaves oppoſite, ſeſſile, acute, ferruginous underneath, horizontal, an inch long, double the length of the internodes. Flowers ſolitary at the ends of the branchlets. Calycine ſegments ovate, very blunt, ſmooth, half the length of the corolla, which is yellow, but reddiſh underneath. It differs from H. calycinum in having ſmaller leaves, not coriaceous, rolled back at the edge, in having the ſtem fruteſcent only at the baſe; and the branches looſe and ſpreading.—Native of Japan[m].

12. Stem a cubit and half high, round, ſmooth, rufeſcent. Leaves pale green, paler underneath, an inch long and half an inch wide, roundiſh, oppoſite. Flowers terminating; calyx green; corolla pale yellow, five times as large as in common Hypericum; petals an inch long. Found in the Pyrenees by Burſer[n].—Native alſo of Siberia and Canada, according to Linneus, who remarks that the leaves are acute.

13. Root perennial, thick, woody, of a reddiſh colour, ſending out very long fibres. Stems ſuffruticoſe or underſhrubby, ancipital two-edged or ſlightly winged on oppoſite ſides, two feet high and more, branched towards the top, of a reddiſh colour and ſmooth. Branches brachiate or decuſſated, ſpreading. Leaves oppoſite, ſeſſile, ovate, entire, ſmooth, dark green, glaucous on the under ſide, netted with numerous projecting veins and nerves, which become through age ferruginous. On the ſtem they are two inches long, and an inch and half broad at the baſe; thoſe on the branches are ſmaller, of different ſizes, and ſome of them approaching to lanceolate. Flowers ſmall for the ſize of the plant, diſpoſed in a cyme. Peduncles round, ſmooth, uſually two or three-flowered, but ſometimes one-flowered. Calyx deeply divided; ſegments ovate, ſlightly nerved, unequal, the three outer ſegments being commonly much larger than the two inner ones; they are upright and longer than the germ, but that advances above them as it ripens into a fruit, and then the ſegments of the calyx turn back to the peduncle. Petals ovate, obtuſe, nearly equal, a little longer than the calyx, ſpreading, concave, the tips bending a little inward, deciduous. Filaments more than forty, longer than the corolla. Anthers ſmall and roundiſh. Germ roundiſh, ſhining, yellowiſh. Styles the length of the germ, upright, permanent. Fruit an ovate capſule, aſſuming the appearance of a berry; at firſt yellowiſh green, then red or browniſh purple, and laſtly almoſt black when ripe[o].

The juice expreſſed from the leaves is claret-coloured. The leaves were formerly applied to freſh wounds, and hence the French name of *La toute ſaine*, and our Engliſh one of *Tutſan*. It is alſo called *Park-leaves*, from its being frequently found in parks. In Italian, Spaniſh, and Portugueze it is *Androſemo*; in German *Konradſkraut*, or *ſtandenartige Johanniſkraut*; in Dutch *Grootbladig Hypericum*, or *Manſbloed*. It flowers from july to ſeptember.

Native of the ſouthern parts of Europe and Britain, in woods and moiſt hedges. With us, near London it is found about Hampſtead and Highgate; on Bacher heath and Harefield, Middleſex; in the Oak of Honour wood near Peckham Rye, and in ſeveral parts of Norwood, but ſparingly. In many parts of England it is more common; as in the Duke of Bridgewater's woods at Aſkeridge, and near Berkhampſtead, Hertfordſhire; in lanes at the foot of Malvern-hill, Worceſterſhire, and between Worceſter and Tewkeſbury; in Shotover plantations, Stokenchurch and Nettlebed woods, Oxfordſhire; near Pengwarry in Cornwall; rocky woods in Weſtmoreland; King's Cliff in Northamptonſhire. In Scotland alſo, as in the woods at Inverary, and at Loch-Ranſa, in the iſle of Arran.]

14. This riſes with many upright woody ſtalks about a foot high. Leaves ſmall, lanceolate, ſeſſile, oppoſite. Flowers terminating, three or four together. Petals oblong, bright yellow. Filaments unequal, ſome longer others ſhorter than the petals. Germ ovate. Styles longer than the ſtamens. It flowers from july to ſeptember.

[It differs from H. calycinum, not only in having three ſtyles, and the ſegments of the calyx acute, but in having higher ſtalks, ſmaller leaves reſembling thoſe of common Hypericum, only ſtill leſs, and the capſule round like that of Androſæmum, with three cells, whereas that is oblong with five cells[p].

Native of the Levant, and found by Sir George Wheler on mount Olympus.—Cultivated in 1706 in the botanic garden at Chelſea[q].

Loureiro deſcribes it as a tree ten feet high with ſpreading branches. Leaves ovate-lanceolate, quite entire, ſmooth, oppoſite. Flowers on hoary peduncles, one or two together, lateral and terminating. Calyxes acute. Petals quite entire. Stamens in three ſets. Capſule three-celled.—Native of Cochinchina, and of China about Canton.

15. Native of the Azores, where it was found by Mr. Francis Maſſon. Introduced in 1778. It flowers in auguſt.

16. Native of Madeira. Introduced in 1779 by Mr. Francis Maſſon. It flowers in auguſt[r].

17. Branches quadrangular at top, ſmooth with a purpliſh bark. Leaves petioled, two inches long and more, a little acuminate, veinleſs, coriaceous, quite entire, with a glaucous dew ſcattered over the upper ſurface. Raceme terminating, compound, a ſpan long. Peduncles compreſſed. Pedicels four or five at each joint of the partial peduncle, ſhort. Calyx five-leaved; leaflets ovate, ſmooth, quite entire, even, naked. Petals of the ſame length and form with the calyx. Filaments in three ſets, connected almoſt to the top; the ſets are ſquarroſe on the outſide with the diſtinct ſpreading tips of the filaments, which are covered with numerous anthers, and are even within. Germ three-cornered, ſmooth, ovate. It has the habit of H. guineenſe, but differs in the number of piſtils and in the infloreſcence.

Native of the Eaſt Indies[s].

18. Stem upright, ſimple at bottom, ſmooth, as is the whole plant, four-cornered by means of a line running down from each ſide of the baſe of the leaf. Leaves ſeſſile, veinleſs, paler underneath, the lower ones narrower, the upper ones ovate-attenuated, without glands or dots. Peduncles terminating and at the diviſions, filiform, ſolitary, one-flowered, an inch long. Calycine leaflets lanceolate, quite entire, without glands, the length of the corolla. Stamens as long as the corolla.—Native of New Caledonia in the South Seas[t].

19. This is a ſmall tree or ſhrub with alternate

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[k] Linn. ſuppl. [l] Ibid. [m] Thunberg. [n] Bauh. prodr. [o] Curtis, With. Lightf.

[p] Ray. [q] Hort. kew. [r] Ibid. [s] Vahl. [t] Ibid.

branches. Leaves oppoſite, petioled, acute, naked, two inches long. Peduncles axillary, ſolitary, bifid; and terminating many-flowered. Calycine ſegments roundiſh, lying over each other on one ſide, coriaceous. Petals obovate, ſtriated, longer than the calyx. Filaments three, broad, divided into many threads which are gradually higher from the outſide, the upper ones barren, the outer anther-bearing. Germ three-cornered. Styles broadiſh.—Brought from China by Bladh [u].

20. This is a middle-ſized tree, about ſixteen feet high, with aſcending branches, divided into very many duſky-red branchlets. Leaves lanceolate-ovate, blunt, quite entire, ſmooth, ſmall, oppoſite. Peduncles five-flowered or thereabouts, axillary. Calycine ſegments acute, entire. Petals ſcarlet, ovate-oblong, entire, ſpreading. Nectary of three large, reclining glands. Stamens about one hundred, in three ſets. Capſule ovate, coloured, three-celled, filled with many oblong, flattiſh ſeeds.—Native of Cochinchina, in woods.

The wood of this tree is red, heavy, hard and tough; and is uſed for making oars and yards of veſſels. The juice of the flowers dyes of a golden colour [x].

21. Stature and ſtamens of Gordonia Laſianthus. Stem four-cornered, blunt. Stipules none. Leaves like thoſe of Lemon, petioled, acute, obſcurely tomentoſe underneath. Corymb brachiate. Sets of ſtamens oblong, very handſome.—Native of Braſil [y].

Here we have inadvertently two different plants under the ſame name; this and n. 10.]

22. Canary St. John's-wort riſes with a ſhrubby ſtalk ſix or ſeven feet high, dividing into branches at top. Leaves oblong, ſet by pairs cloſe to the branches, having a ſtrong odour, but leſs than thoſe of the hircinum. Flowers terminating in cluſters, very like thoſe of hircinum. Stamens longer than the petals.—Native of the Canary iſlands. [Cultivated in 1699, by the Dutcheſs of Beaufort. It flowers from july to ſeptember.

23. Native of North America. Cultivated in 1762 by Mr. James Gordon. It flowers in july and auguſt [z].]

24. This riſes with ſhrubby ſtalks about three feet high, ſending out ſmall oppoſite branches at each joint. Leaves oblong, ovate, placed by pairs, ſeſſile, and having a rank goatiſh ſmell. Flowers in terminating bunches. Petals oval. Stamens longer than the petals, and ſtyles longer than the ſtamens. Capſule ovate. [Native of the South of Europe. Cultivated here in 1640. It flowers from july to ſeptember.

There are two varieties of it in the gardens, one larger, which is the common one; the other ſmaller [a].

25. This is a ſhrub a ſpan high, very much branched, and brachiate; the branchlets are compreſſed. Leaves like thoſe of knot-graſs (Polygonum), ovate, very ſmall, acuminate, veinleſs, ſeſſile, longer than the joints of the branches. Flowers commonly in pairs on the branchlets. A nectariferous oblong ſcalelet, within the claw of each petal. It has the appearance of a ſand plant, and is a native of Egypt [b]. Introduced in 1787, by Monſ. Thouin [c].

26. Roots in old plants hard, woody, and more than half a foot in length; in young plants a tuft of yellowiſh fibres three or four inches long. Stems from ſix inches to a foot in height, ſome upright, others aſcending, pale green, a line in thickneſs, with a ſmall wing deſcending from one leaf to another. Leaves oppoſite, an inch or fifteen lines in length, and two lines in breadth, pale green, crenate like Ptarmica or Sneezewort, ſeſſile, with two very pointed earlets at bottom, two lines long, cut more deeply than the reſt of the leaf. From the upper axils ſpring little branches, with leaves like the others, but ſhorter and wider. Theſe flowering-branches form a cyme like that of common St. John's-wort. Petals eight or nine lines long, and three lines wide, rounded at top. Stamens ſhorter than the petals. Calyx three lines long, toothed on the edge. Capſule ruſſet-coloured, three lines long, five-celled. Seeds brown. The whole plant has a reſinous ſmell. It varies much in ſize, as does alſo the flower, the petals being ſometimes ten lines in length. The leaves are bitter and a little viſcid.—Native of the Levant [d].

27. Stems ſhrubby, when old wrinkled by the falling of the bark, herbaceous, ruſeſcent, having raiſed dots ſcattered over them, whence they are rugged. Leaves oppoſite, oval-lanceolate, even, quite entire. Flowers ſmall, in terminating corymbs. The ſcars or raiſed dots on the ſtem are longer than in H. balearicum, the leaves have no apparent glands, and there being only three ſtyles in the flowers, this is diſtinct from that.—Native of Arabia and Barbary.

28. Root perennial. Stems at bottom woody, round, filiform, creeping; putting out roots at the joints. Leaves quite entire, oppoſite, rather crowded. Flowers terminating, three, the middle one ſeſſile. Calyx and bractes having brown dots ſcattered along the edge, but not ſerrate.

Native of the Levant, where it was found by Tournefort. Haſſelquiſt alſo diſcovered this in Paleſtine, and the preceding in Arabia [e].

29. Stems ſtraight, purpliſh. Leaves commonly revolute, whence they appear narrow like thoſe of Roſemary. There are very many primordial leaflets of the branchlets from the axils. Panicle ſmall, terminating. Flowers of the firſt and ſecond dichotomy ſeſſile; the reſt terminating, peduncled; ſeldom more than ſeven. Stamens not longer than the petals.

Native of North America [f]. Cultivated in 1758 by Mr. Miller. It flowers from june to auguſt [g].

30. Native of Spain, where it was found by Tournefort, and of Portugal.

31. This has the appearance of Leſſer Centaury. Stems herbaceous, round, branched, ſmooth. Leaves linear or ſublanceolate, quite entire, ſmooth. Panicle dichotomous, with pedicelled flowers, which are very ſmall, the ſize of thoſe of Spurge. Pericarp twice as long as the calyx, conical, red.

Native of North America. Kalm obſerved it in Canada [h].—Introduced in 1770 by Samuel Martin, M. D. It flowers from july to ſeptember [i].

32. Stem upright, as it were ſhrubby. Leaves cordate-ovate, with pellucid dots, an inch and half long. Petals pale red. Filaments nine, connate in three ſets. Nectaries three, alternate with the ſtamens, obtuſe, thick, gibbous without, concave within.

Native of North America [k]. It was found by Miſs Colden, daughter of the Hon. Cadwallader Colden, in 1753, and ſhe named it Gardenia; it was alſo found the year following by Dr. Garden, about a mile from New-York. It is deſcribed by both, in the firſt article of the ſecond volume of Eſſays and Obſervations Phyſical and Literary, read before a ſociety in Edinburgh, and publiſhed by them in 1756, octavo.

33. Stems a foot high, ſimple, rugged with warts from the fallen leaves, perennial. Leaves ſeſſile, oppoſite, blunt, veinleſs, even. Corymb terminating, dichotomous, ſeſſile, not longer than the leaves. Petals linear.—Found by Mutis in New Granada [l].

34. Native of North America, where it was found by Samuel Martin, M. D. Introduced in 1772. It flowers in july [m].

35. This is a large ſhrub with divaricating branches, the laſt leafy and tomentoſe. Leaves quite entire, incumbent, perforated, black-dotted at the edge. Panicle rounded. Bractes and calyxes awl-ſhaped [n].

Native of the iſland of Teneriffe. Introduced in 1788, by Mr. Francis Maſſon. It flowers moſt part of the ſummer [o].

36. Square-ſtalked St. John's-wort is ſufficiently diſtinguiſhed from the other ſpecies by that circumſtance which has given occaſion to the trivial name.

The root is perennial, ſomewhat creeping and fibrous. Stems from a foot to eighteen inches in height, upright, branched, ſmooth, reddiſh, ſquare from having four little membranes or wings running down them. Branches decuſſately oppoſite. Leaves blunt, ſmooth, deep green but paler underneath, ſtrongly marked with ſeven or nine ribs, having a net-work of veins, with tranſparent glands in the interſtices, but not very numerous; diſcernible when viewed with a glaſs in a ſtrong light; the edge, eſpecially on the under ſide, dotted with black glands: the lower ones ſeſſile, oppoſite; the upper growing together. Flowers ſmall, terminating in cloſe panicles: branchlets deep red or blood colour: peduncles very ſhort: bractes ſubulate, in pairs. Calycine ſegments deeply divided, lanceolate, ſpreading, ribbed, entire except at the end where they are ſometimes a little toothed; they have no glands. Petals finely grooved, concave, marked with lines and dots, filled with a purple liquor, which ſtains paper with a muddy purple permanent ſtain. Filaments ſcarcely divided into ſets or bundles. Anthers roundiſh, yellow, having a black gland between the lobes. Germ obovate. Styles ſpreading, awl-ſhaped, yellow. Stigmas very ſmall, purple. Capſule brown. Seeds oblong, ſomewhat ſhining[p].

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[u] Retz.
[x] Loureiro.
[y] Linn. ſpec.
[z] Hort. kew.
[a] Ibid.
[b] Linn. ſpec.
[c] Hort. kew.
[d] Tournef. voy.
[e] Linn. amoen.
[f] Linn, mant.
[g] Hort. kew.
[h] Linn. ſpec.
[i] Hort. kew.
[k] Linn. mant.
[l] Linn. ſuppl.
[m] Hort. kew.
[n] Linn. ſuppl.
[o] Hort. kew.

Native of moſt parts of Europe, in moiſt hedges, ſhady places, wet meadows, by rivulets and in bogs; flowering in july.

37. Root perennial, woody, brown. The whole plant is ſprinkled over with ſmall black glands, and is quite free from hairs. Stems ſeveral, about two feet high, woody, upright, ſmooth, round or nearly ſo, alternately two-edged, much branched. Branches oppoſite, nearly upright, two-edged. Leaves decuſſately oppoſite, ſeſſile, oblong-ovate, yellowiſh green, with ſeven or five ſemitranſparent lines, and ſeveral black dots near the edges on the under ſide; the ſemitranſparent dots numerous. Peduncles from the axils of the upper leaves, two-edged, ſupporting many flowers in a buſhy panicle. Calycine ſegments lanceolate, acuminate, ſtriated, entire, without glands, about half the length of the petals. Petals ſtriated, ſet near the edges, and ſometimes over the whole ſurface with very dark-purple glands, one of the ſides entire, the other irregularly notched. Filaments thirty or more, ſcarcely united into three ſets or bundles. Anthers two-celled, each of the cells roundiſh, with a ſmall, globular, black gland between them. Germ ſubovate. Style divaricating. Stigmas dark red or crimſon[q].

Common in woods, thickets, hedges and dry banks, flowering from july to ſeptember.

Although in the preſent practice St. John's-wort is not much regarded, yet its ſenſible qualities, and the repeated teſtimonies of its virtues, entitle it, as Dr. Cullen obſerves, to farther trials. To the taſte it is aſtringent and bitter, and its effects ſeem to be chiefly diuretic. From poſſeſſing properties which have been generally called balſamic, it has been uſed as a vulnerary in external wounds and internal hæmorrhages, for the former purpoſe the tops of the plant with the flowers are infuſed in oil, and for the latter an infuſion of the plant is made in the manner of tea. It has likewiſe been given in ulcerations of the kidnies, and has even been ſuppoſed to poſſeſs virtues as a febrifuge. The leaves given in ſubſtance are ſaid to deſtroy worms. The ſemitranſparent dots on the leaves are the receptacles of an eſſential oil. The flowers tinge ſpirits and oils of a fine purple colour, which is probably derived from the little glands upon the anthers and edges of the petals. The dried plant boiled with alum dyes wool of a yellow colour.

The common people in France and Germany gather it with great ceremony on St. John's day, and hang it in their windows, as a charm againſt ſtorms, thunder, and evil ſpirits; miſtaking the meaning of ſome medical writers, who have fancifully given this plant the name of *Fuga Dæmonum*, from a ſuppoſition that it was good in maniacal and hypochondriacal diſorders. In Scotland alſo it is carried about as a charm againſt witchcraft and enchantment; and they fancy it cures ropy milk, which they ſuppoſe to be under ſome malignant influence, by milking afreſh upon the herb.

Kine, goats, and ſheep eat it; but horſes and ſwine refuſe it[r].

38. Stems ſeveral from two to three feet high, upright, ſprinkled with black dots. Leaves large, embracing the ſtem, ovate, very thin and ſkinny at the edge, with black dots underneath. Calycine leaflets very blunt, yellow green, marked with ſhort black lines. Petals large, very entire, yellow, with black lines above, and a few black dots on the edge underneath[s].

In habit, ſize, and colour it nearly agrees with perforatum, but differs eſſentially in having no pellucid dots apparent on the leaves, and in the calycine leaflets being elliptical and obtuſe. The latter indeed, and even the bractes, are ſprinkled with pellucid dots and lines; and the petals as well as the edges of the leaves are marked with opaque purple as in that; but the ſtem of this is in the upper part almoſt quadrangular; and it may be known even before it comes out of the ground, by the much more vivid red of the young ſhoots. It is not, as Leers ſuſpects, the ſame with H. perfoliatum of Linneus.

Native of Germany, Dauphiné, and England; probably of other countries, but unnoticed. Firſt diſcovered in England in july 1794, by Dr. John Seward of Worceſter, growing plentifully about Sapen in that county, and aſcertained by the Rev. Mr. Douglas to be H. dubium of Leers. Dr. Smith found it in auguſt 1795 about Col. Johnes's at Hafod, Cardiganſhire, and in Mr. Knight's woods at Downton Caſtle, near Ludlow. It flowers in july and auguſt[t].

39. Root perennial, yellowiſh, fibrous. Stems numerous, about half a foot in length, procumbent, round or ſomewhat flatted, ſcarce perceptibly two-edged, ſmooth, reddiſh, branched at top. Leaves oppoſite, oblong-ovate, obtuſe, entire, dotted on the edge with black, with ſemitranſparent dots on the ſurface not diſtinguiſhable but with a glaſs and a ſtrong light. Peduncles axillary and terminating, ſolitary or ſometimes in pairs. Bractes none. Calycine ſegments large, unequal, ovate-oblong, the edge turned back and ſerrate as it were with dark-purple glands, terminating in a red point. Petals oblong, blunt at the end, a little longer than the calyx, dotted on the edge with glands, having a tinge of red on the outſide. Filaments ſeldom more than twenty, in three diſtinct ſets, five or ſix in each. Anthers very ſmall, without glands. Germ roundiſh. Styles ſimple, ſpreading, the length of the ſtamens. Stigmas ſometimes tinged with red. Capſule oblong-ovate, membranaceous, of a very bright red colour before it is ripe.

It is the leaſt of our wild Hypericums, ſcarcely inferior to any in beauty and delicacy; and is not unfrequent in gravelly paſtures, in fields that have long lain untilled, on heaths, eſpecially where the ſoil is moiſt and clayey, and ſometimes in woods: flowering from june to auguſt.

It varies with leaves growing by threes. Scopoli fancies it, but ſurely without grounds, to be a monſtrous variety of H. perforatum[u].

40. Leaves very minute, half ſtem-claſping, curled at the baſe, whence the trivial name.—Native of Calabria, Sicily, and Greece[x].

41. Stem next the root woody, very ſmooth and even, ſlender, quite ſimple except that it is ſometimes branched at the baſe; the branches a foot long, nearly as high as the ſtem. Leaves ſeſſile, remote, revolute. Peduncles at top, filiform, few, ſpreading, oppoſite, commonly three-flowered. Calycine leaflets lanceolate, with a few briſtle-ſhaped toothlets glandular at the tip. Corollas ſmall, a little longer than the calyx. Filaments ſhorter than the petals.—Found by Vahl on heaths near Bayonne and in Navarre[y].

42. Stem upright, round, ſmooth, about eighteen inches high, very little branched and naked for a conſiderable diſtance under the flowers. Leaves few, in pairs, ſeſſile, ovate, the upper ones ovate-lanceolate, with ſeven ribs, and a net-work of veins, the edges ſet with black dots: the upper leaves have numerous, minute,

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[p] Curtis, Withering, Woodw. Mſs.

[q] Curtis, Withering, Lightfoot.

[r] Curtis, With. Lightf.

[s] Leers.

[t] Engl. Bot.

[u] Curtis, With. Lightf.

[x] Linn. mant.

[y] Vahl.

circular, tranſparent dots, viſible to the naked eye : but the lowermoſt are dotted only towards the baſe. Flowers in ſhort, branched, terminating or axillary panicles, few together. Bractes, peduncles, and calyxes beſet with ſtrong hairs, each terminated by a black gland. Calyx divided almoſt to the baſe, into lanceolate, pointed ſegments[z]. Petals ſometimes dotted towards the top. Stamens in three ſets. Anthers with a black ſpot or glandule near the baſe[a].

Native of many parts of Europe, in woods and thickets in high ſituations. In Britain, in Charlton wood, Kent, and near Croydon in Surry. Bath hills near Bungay, Suffolk. Stokenchurch, Henley and Maple-Durham, Oxfordſhire. Perſhore and Bredon-hill, Worceſterſhire. Frequent in the Weſt of England. In Angleſea, Wales. Near Ingleton, Cartmel-well, and Furneſs Fells in the North, and in Scotland, but not common.

43. Root perennial. Stem upright, ſimple, ſmooth, round, about a foot high, tinged with purple. Leaves oblong-lanceolate, ſeſſile, blunt, very ſmooth, entire; theſe with the calyx and petals have black dots ſcattered over them on both ſides. Flowers terminating, few, without ſmell. Calycine leaflets lanceolate, acuminate, green, with long glandular ſoft hairs about the edge. Petals obovate, very blunt, flat, ſtriated, very minutely, ſharply and unequally ſerrate at top, ſome of the ſerratures being terminated by a hair. Filaments, anthers, and ſtyles yellow as well as the corolla. Germ ovate, ſmooth, pale yellow. Stigmas browniſh. Capſule ovate, brown, ſmooth, acuminate, with a glaſs appearing to have numerous pellucid glands ſcattered over it. Seeds yellowiſh.

Native of Auſtria, where it was found by Mygind and Boujart; in paſtures by wood ſides, flowering in june, and perfecting ſeeds in july and auguſt[b].

44. Branches obſcurely four-cornered, ſmooth, dichotomous. Leaves ſeſſile, ſmooth, nerved above, marked with very fine lines along the nerves, dotted on both ſides, ſharp at both ends. Peduncles from the extreme axils, three-flowered; ſolitary in the diviſions. Calyx half the length of the corolla, with brown glands at the edge. Corolla pale yellow with brown dots[c].

Native of Madeira. Mr. Francis Maſſon. Introduced in 1777. It flowers from may to auguſt[d].

45. Root perennial, fibrous; fibres brown, rigid, ſomewhat woody. Stems a foot and half to three feet high, upright, ſolid, reddiſh, round, hairy or downy, generally ſimple but ſometimes branched, much leſs ſo however than common St. John's-wort. Leaves decuſſately oppoſite, oblong, obtuſe, ſeſſile, hoary on each ſide, ſeven-ribbed, minute tranſparent dots all over the ſurface, edge finely ciliated. Thoſe of the ſtem are ovate, broader than in H. perforatum; thoſe of the branches are lanceolate. Sometimes the larger leaves have nine ribs. Rudiments of branches conſiſting of four leaves forming a croſs are generally obſerved in the axils of the leaves; theſe however are ſometimes wanting, and ſometimes are drawn out into branches. Flowers terminating, in an oblong panicle forming a kind of ſpike. The floral leaves have glandular ſerratures at the edges. Calycine ſegments lanceolate, with two grooves, and about twelve ſerratures at the edge, each tipt with a gland. Petals oblong-ovate, blunt, ſpreading, with ſix or eight ribs, and a few black glands at the end. Stamens about twenty-four (twenty to thirty), obſcurely divided into three bundles, very fine, ſtraight, yellow, ſhorter than the corolla. Anthers roundiſh, double, without glands. Germ ovate. Styles ſpreading, the length of the ſtamens, yellow turning blackiſh by age. Stigmas crimſon.

It differs from common St. John's-wort in being taller, having the ſtem perfectly round and hoary, and the edge of the calyx beſet with black glands. It is alſo more apt to grow in woods and coppices, though it is frequently met with in hedges[e]. Linneus ſays, that the flowers cloſe in the night, which thoſe of H. perforatum do not. It flowers from june to auguſt.

46. Stem round. Leaves ſeſſile. Flowers in terminating, bifid racemes. Stamens in three ſets or bundles[f].

Native of the South of Europe. Introduced in 1772, by Monſ. Richard. It flowers from july to ſeptember[g]. Ray obſerved it about Montpellier, and in the iſland of Malta, where water had ſtagnated during winter.

47. This is a native of Italy, and was introduced in 1785 by Mr. John Græfer. It flowers in may and june[h].

48. Stems round, and nearly proſtrate among wet moſs and graſs, throwing out long fibrous perennial roots from the firſt three or four joints; its ſubſtance is ſpongy, and its upper part downy. Flowering branches aſcending, five or ſix inches high. Leaves oppoſite, covering the ſtem, almoſt orbicular, blunt ſometimes emarginate, entire, with five or ſeven ribs or nerves, clothed eſpecially on the back with down compoſed of fine ſhort jointed hairs; the dots on them are not viſible but with a glaſs and held againſt a ſtrong light. The panicle, terminating at firſt, becomes lateral by the protruſion of the ſtem beyond it, and is dichotomous, rarely producing more than from five to ten flowers, which appear in july and auguſt, and ſeldom expand except in bright ſunſhine. Floral leaves oval-lanceolate, minute, reddiſh, edged with red glands, a pair beneath each diviſion. Calyx divided about half way, fringed alſo with red glands, about one-fourth of the length of the corolla. Petals yellow or reddiſh yellow, twiſted ſpirally or ſometimes merely folded up, marked with eight greeniſh lines or ribs, and having three ſmall greeniſh glands on the inner ſide of the claws at the baſe of the germ. Stamens in three ſets, divided about half way down into from three to five filaments.

This, as Linneus obſerves, is very nearly related to his H. tomentoſum; which however differs from elodes in having oblong leaves, the veins of which ſpring from the midrib, and not from the baſe, a much larger and more compound panicle, the calyx and ſtamens more deeply divided, the former bearing black or purple glands.

Beſides England, this ſpecies has not been obſerved as a native, except in the northern part of France. With us it is not uncommon in bogs: as on Hayes common in Kent, Derſingham moor near Lynn[i], and other bogs in Norfolk, Gamlingay bogs in Cambridgeſhire, Birmingham heath, in Cornwall, &c.

49. The whole plant is ſmooth. Stems from one to two feet high, upright, round, often red, thinly branched, the joints remote : branches oppoſite, ſhort, ſlender and like the ſtem. Leaves in diſtant pairs, triangularly-cordate or obtuſely ovate, ſhining, embracing, nearly horizontal, deep green above, glaucous beneath, with numerous ſemitranſparent dots, particularly near the edge and top, more ſolid to the touch than in the other ſpecies, and frequently of a bright red colour towards the bottom; thoſe on the branches three times ſmaller than the ſtem-leaves, and thoſe on the peduncles lanceolate. Flowering-branches or peduncles round, ſlender, axillary, with from one to three flowers at top. Bractes none. Calyx very ſhort, deeply divided; ſegments ovate, ſtriated, ſerrated, and edged with little glands of a blackiſh red colour. Petals oblong-ovate, ſlightly ſtriated; on the under ſide tinged with bright orange, ſlightly ſerrated, and edged with the ſame dark-coloured glands. Filaments in three ſets, from twelve to eighteen in each, ſhining, yellow. Anthers roundiſh, two-celled, with bright ſcarlet pollen. Germ ovate. Styles the length of the germ, ſpreading. Stigmas ſmall, roundiſh. Capſule ſomewhat conical, brown. Seeds oblong, brown[k].

Native of moſt parts of Europe in woods, on heaths, banks and in hedges, eſpecially in a clayey ſoil: flowering in june and july.

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[z] Woodw. Mſs. Stokes in With. [a] Lightfoot. [b] Jacquin. [c] Vahl. [d] Hort. kew. [e] Curtis, Wither. Lightf.

[f] Linn. [g] Hort. kew. [h] Ibid. [i] Eng. bot. Woodw. Mſs. Wither. [k] Curtis, Woodw. Mſs. Wither.

50. This is a very ſmall plant. Stems two or three, round, ſimple, five or ſix inches long, proſtrate. Leaves thick, ſolid, round, ruſſet or glaucous underneath without nerves. Flowers three or five, terminating, large; petals oblong, toothed at the end, and often turned back. Calyx ſmooth, with blunt rounded ſegments. Stamens from forty to forty-five.

The leaves differ from thoſe of all the other ſpecies in being thick and fleſhy, though very hard, and uniform throughout.

Native of Dauphiné near the Grande-Chartreuſe [l].

51. Root with capillary fibres. Stem ſmooth, ſeldom branched, panicled at top, a foot high. Branches either few from the root, or ſeveral from the upper part of the ſtem, capillary, oppoſite, upright, like the ſtem. Leaves oppoſite, ſubcordate, blunt, ſmooth, reflex and waved a little on the edge; nerved, paler and dotted underneath; upright, often complicated, ſhorter than the internodes, the upper and lower ſmaller. Flowers ſmall, peduncled, ſolitary and terminating in the axils of the panicle. Bractes oppoſite, lanceolate, acuminate, entire, ſmooth, under each branch of the panicle. Peduncles capillary, one-flowered, upright. Calyx divided almoſt to the baſe; ſegments oblong, acute, erect, permanent. Petals oblong, the ſame length with the calyx. Filaments in ſeveral ſets, connected only at bottom, capillary, a little ſhorter than the corolla, yellowiſh; anthers round. Styles diſtant, the length of the corolla; ſtigmas blunt. Capſule oblong, acute, ſmooth.—It differs from H. quadrangulum in being many-times ſmaller, and in having a weak ſtem decumbent at the baſe:—from H. perforatum in the ſame circumſtances, and in having a quadrangular ſtem.

Native of Japan, and flowering there in june.

52. Stem upright, purple, ſmooth, ſimple or branched only at top. Branches oppoſite, ſubfaſtigiate, like the ſtem. Leaves oppoſite, entire with a reflex margin, veined, ſmooth, preſſed almoſt cloſe to the ſtem: the lower longer, the upper ſhorter than the internodes. Flowers terminating, about three together. Peduncles and pedicels filiform, like the ſtem, leafy, faſtigiate. Calycine ſegments lanceolate, ſmooth, almoſt the length of the corolla; which is ſcarcely longer than the ſtamens.

Native of the mountains of Japan, flowering in auguſt [m].

53. Stem round, a long ſpan in height. Leaves glaucous, linear, narrow, like thoſe of Linaria, in fours [n]. Stipules commonly on each ſide ſolitary, or two to each leaf, of the ſame ſize and form with the leaves: hence when the leaves are oppoſite there are ſix at each joint, four of which are ſtipules [o]. Flowers terminating, in a looſe ſpike, on one-flowered peduncles. Peduncles and bractes full of large black glands. Petals large in proportion to the plant, marked with lines [p].

This is an elegant little evergreen, forming a pretty buſh, and flowering during moſt of the ſummer.

Native of the South of Europe and many parts of the Levant, the Crimea, &c. [q] It was cultivated here in 1640 [r].

54. Leaves glaucous, preſſed cloſe to the ſtem, ſcarcely conſpicuous.—Native of Virginia, in watery places [s].

55. Stem ſhrubby, four-cornered, hairy, branching like Horſe-tail. Leaves very ſmall, hairy, preſſed ſo cloſe to the ſtem as to be ſcarcely viſible. Flowers golden-coloured [t].

Native of Virginia and Carolina. Introduced in 1787 by Thomas Walter, Eſq. [u]

56. Stem ſhrubby, ſmooth, with a brown wrinkled bark. Branches oppoſite, muricated by the fallen leaves, jointed; the lower joints ſhorter, obſcurely four-cornered; the upper ones alternately compreſſed, ancipital, dilated towards the top. Leaves oppoſite, ſeſſile, longer than the internodes, approximating, quite entire, veinleſs, even. Flowers terminating, ſolitary, the ſame ſize as in H. balearicum, on very ſhort peduncles. Corolla longer than the calyx. Germ ovate. Style ſemitrifid [x].—Native of Arabia.]

57. Root compoſed of many woody fibres ſtriking deep into the ground. Stems ſeveral, ſhrubby, near two feet high, covered with a purpliſh bark. Leaves ſtiff, ſmooth, about two inches long, and a quarter of an inch broad, oppoſite, ſeſſile, of a lucid green on their upper ſurface, and gray underneath, having many tranſverſe veins running from the midrib to the border. Flowers terminating in ſmall cluſters, each on a ſhort peduncle. Calycine ſegments divided almoſt to the bottom, obtuſe, deep purple. Petals large, obtuſe, bright yellow, concave. Germ ovate. Stigmas five, ſlender, bending on one ſide.

It continues in flower from march to ſeptember.—Native of China, whence the ſeeds were brought to Hugh Duke of Northumberland; the plants were raiſed at Stanwick in 1753, and communicated to the botanic garden at Chelſea.

[*General Remarks.*

If the following remarks be attended to in conjunction with thoſe which were made at the head of the above deſcriptions, the inveſtigation of the numerous ſpecies will be facilitated.

1. All the ſpecies are perennial except the 31ſt.

2. The following are herbaceous—6. 8. 12. 31. 36. 39. 42. 48, 49, 50, 51, 52.

Moſt of the reſt are ſhrubby, or at leaſt ſuffruticoſe, or woody at the baſe.

The ſtem is Cylindrical in 8, 9, 10. 27, 28. 31, 32, 33. 37. 40, 41, 42, 43. 45, 46. 48, 49, 50. 52, 53.—Ancipital or two-edged in 13. 24, 25. 29. 39. 47.—Quadrangular in 1 to 6. 12. 14. 17, 18. 21. 36. 38. 44. 51. 55, 56.

4. The leaves are alternate only in the 7th and 8th ſpecies: in the reſt they are oppoſite.

5. The flowers are in Racemes or Panicles in 3, 4. 6. 8. 10. 17. 24. 29. 31. 34, 35, 36, 37, 38. 42. 45. 46. 48. 51.—In Cymes in 13 and 47.—Umbels in 9.—Corymbs in 21. 27. 33.—Solitary in 1, 2. 5. 7. 11. 18, 19. 36. 56.

6. Some of the ſpecies have Bractes or floral leaves, as 5. 7. 28. 36. 42. 45. 48. 51. 53, and probably ſeveral others: many however have none.

7. Some ſpecies have five or three nectareous glands alternate with the ſtamens, as 3, 4. 9, 10. 20. 25. 32. Probably future obſervation will inform us that others alſo have theſe glands.

8. The fruit in moſt ſpecies is a Capſule; in 3, 4. 10. 13, however it is a Berry, or rather a berried Capſule; being a Berry rather in appearance than ſtructure.

9. Natives of Europe are 1. 13. 24. 36, 37, 38, 39, 40, 41, 42, 43. 45. 47, 48, 49, 50. 53. Of theſe 13. 36, 37, 38, 39. 42. 45. 48, 49, are natives of Britain. The reſt are found in the Eaſt Indies, America, Japan, &c.

10. Though our Common St. John's-wort (n. 37.) be named Perforata by ſome old writers, and H. perforatum by Linneus, from the remarkable veſicles appearing as pellucid dots in the leaves; yet we muſt remember that this ſpecies poſſeſſes the character in common with ſeveral others, though not ſo evidently to the naked eye. This circumſtance is ſaid to have given riſe to the generic name; the dots being like lenſes, through which the *icones* or images of objects may be diſcerned.

PROPAGATION AND CULTURE.

Of the numerous ſpecies above recited that have been introduced into culture in Europe, many are very hardy, and being perennial may eaſily be increaſed by parting the roots, as well as by letting the ſeeds ſcatter. Theſe hardy ſorts are 4, 5, 6. 13, 14. 22, 23, 24. 29. 31. 34. 36, 37, 38, 39. 42. 45. 48, 49. 53. 55. The reſt require the protection of a greenhouſe, but none are ſo tender as to need the aſſiſtance of a bark ſtove.]

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[l] Villars. [m] Thunberg. [n] Haller. [o] Linn. [p] Haller. [q] Curtis. [r] Hort. kew. [s] Linn. ſyſt. and Clayton in Gron. virg. [t] Pluk. and Clayton in Gron. virg. [u] Hort. kew.

[x] Vahl.

1. Warted St. John's-wort requires no artificial heat. If the plants be placed in a dry airy glaſs caſe in winter, where they may be protected from froſt, and enjoy a good ſhare of freſh air in mild weather, they will thrive better than in a warmer ſituation; but they muſt by no means be placed in a damp air, for their ſhoots would ſoon grow mouldy and decay; nor ſhould they have much water during the winter. In ſummer they ſhould be expoſed to the open air, and in warm weather they ſhould be gently watered three times a week; and they ſhould have a looſe ſandy ſoil not over rich.

This is propagated by cuttings planted in june, in pots filled with light earth, and plunged into a very moderate hot-bed, ſhading them from the ſun, and refreſhing them with water. They will put out roots in ſix or ſeven weeks, when they ſhould be carefully taken up, and each planted in a ſeparate ſmall pot, placing them in the ſhade till they have taken new root; then they may be removed to a ſheltered ſituation, where they may remain till froſt comes, when they ſhould be put into a greenhouſe or glaſs-caſe.

It may alſo be increaſed by ſeeds ſown in autumn. See n. 14.

2. This and the other North American ſorts, ſeldom producing ripe ſeeds here, may be increaſed by parting the roots in autumn. It ſhould have a light ſoil and an open ſituation.

5. Garden Tutſan is eaſily propagated by parting the roots in october: theſe ſpread and increaſe very faſt, where it ſtands long unremoved.

13. Growing wild in woods is not often admitted into gardens: it may be increaſed by parting the roots, and loves ſhade with a ſtrong ſoil. [It is not unfrequently ſeen in plantations among other ſhrubs, where it is as ornamental as many others.]

14. This alſo is uſually propagated by parting the roots in ſeptember, becauſe the ſeeds ſeldom ripen in this country. It will live in the open air, in a warm ſituation and dry ſoil: but it will be proper to keep a plant or two in pots, to be ſheltered under a frame in winter, to guard againſt ſevere froſt.

If this be increaſed by ſeeds, they ſhould be ſown ſoon after they are ripe, in pots filled with light earth, and placed under a frame in winter; in ſpring the plants will appear, and when they are fit to remove may be planted in a warm border or in pots, and treated as the old plants.

22, 23, 24. Theſe are propagated by ſuckers, taken off in march juſt before they begin to ſhoot, and planted in a light dry ſoil: or by cuttings, planted at the ſame ſeaſon: or by ſeeds, ſown in auguſt or ſeptember, as ſoon as they are ripe: but as they multiply faſt by ſuckers, the other methods are ſeldom practiſed.

[36, 37, 38, 39. 42. 45. 49. Theſe being wild plants are ſeldom cultivated in gardens, they are not however without their beauty, and may be increaſed by parting their roots or permitting their ſeeds to ſcatter.

53. Is propagated by cuttings, and may ſtand in the open air, with a reſerve of plants in caſe of very ſevere weather. It is however commonly conſidered as a greenhouſe plant.]

57. Chineſe Hypericum may be propagated by ſlips from the root, or by laying down the branches. If by ſlips, they ſhould be planted in the ſpring on a moderate hot-bed: the layers ſhould be made at the ſame time to take root by autumn, when they may be tranſplanted into pots, and ſheltered under a frame in winter: in ſpring, part of theſe may be ſet in a warm border, and the others continued in pots to be ſcreened in winter. Thoſe plants which ſtand abroad will not flower in winter, as thoſe do which are removed into ſhelter in autumn.

[HYPERICUM. See *Aſcyrum, Dioſma, Gordonia.*]

HYPERICUM FRUTEX. See *Spiræa.*

[HYPHYDRA. (*From* υπο *&* υδωρ; *ſo named from its growing under water.*)

Lin. gen. Schreb. n. 1484.

Tonina. *Aubl.* 330.

Claſſ. 21. 10. Monoecia Gynandria.

GENERIC CHARACTER.

* *Male flowers.*

CAL. *Perianth* one-leafed, three-parted: *lobes* obovate, concave, curved in at top, ſmooth.

COR. none.

STAM. *Filaments* ſix, capillary, long, inſerted above the germ at the corners. *Anthers* roundiſh.

PIST. *Germ* empty, inflated, membranaceous, hexagonal, truncate at top. *Style* capillary, the length of the ſtamens. *Stigma* none.

Female flowers.

CAL. none.

COR. none.

STAM. none.

PIST. *Germ* roundiſh, with three ſtreaks. *Style* triangular. *Stigmas* three, acute.

PER. *Capſule* membranaceous, one-celled, three-valved.

SEED ſingle, ovate, ſtriated.

ESSENTIAL CHARACTER.

MALE. *Cal.* one-leafed, three-parted. *Cor.* none. *Stam.* ſix, inſerted above the germ.

FEM. *Cal.* and *Cor.* none. *Style* triangular, with three ſtigmas. *Capſ.* one-celled, three-valved. *Seed* ſingle.

SPECIES.

1. Hyphydra fluviatilis.
Tonina fluviatilis. *Aubl. guian.* 857. *t.* 330.
Eriocaulon amplexicaule. *Rottb. ſurin.* 4. *t.* 1. *f.* 1.

DESCRIPTION, *&c.*

Stems and branches ſlender. Leaves alternate, long, narrow, lanceolate, ſmooth, acuminate, marked with lines, ciliate, embracing. Some of the ſtems are erect, others decumbent, the latter throw out roots. Flowers in capitate bundles: each compoſed of a male flower, involved in a long ſharp bracte, ciliate at the edge, and a female flower included in three bractes of the ſame form: they are axillary, and on a ſlender peduncle.

This little plant is a native of Guiana, and grows three or four feet under water; it flowers in february[a].

HYPNUM. (Υπνον *of Dioſcorides: ſaid to be from* υπνος, *ſleep.*)

Lin. gen. Schreb. n. 1656. *Hedw. fund.* 2. 94.

Claſſ. 24. 3. Cryptogamia Muſci.

Nat. order of *Muſci* or *Moſſes.*

GENERIC CHARACTER.

CAPS. oblong. *Periſtomium* double: *outer* with ſixteen broadiſh teeth; *inner* membranaceous, equal, laciniated; ſegments broadiſh, with capillary ones interpoſed.

MALES gemmaceous on different plants.

Or thus,

Peduncle from a lateral tubercle, fenced with ſcales: *capſule* outer fringed with ſixteen teeth.

Male a bud, generally on a different plant. *Withering.*

Hypnum is a very numerous genus of Moſſes. Some of the Linnean ſpecies have been ſeparated by Hedwig and others under different genera.

There are fifty ſpecies in the 14th edition of the Syſtema vegetabilium. Forty in Hudſon's Flora Anglica: and ſeventy in the Arrangement of Britiſh Plants by Dr. Withering, who to facilitate the inveſtigation of the ſpecies has thrown them into ſeven diviſions. Figures of them may be ſeen in Dillenius, Hedwig, Dickſon, who has diſcovered ſeveral new ſpecies, Engliſh Botany, Vaillant, Buxbaum, Moriſon, &c.

HYPNUM. See *Bryum, Dicranum, Fontinalis, Leſkia, Mnium, Neckera, Sphagnum.*

HYPOCHOERIS. (Υποχοιρις *of Theophraſtus, and* Hypochoeris *of Pliny. From* υπο *and* χοιρος *a hog.*)

Lin. gen. n. 918. *Reich. n.* 997. *Schreb. n.* 1246. *Vaill. mem. acad.* 1721. 28. 21. *Juſſ.* 170. *Gærtn. t.* 160.

Achyrophorus. *Gærtn. t.* 159.

Claſſ. 19. 1. Syngeneſia Polygamia Æqualis.

Nat. order of *Compoſitæ Semifloſculoſi. Cichoraceæ,* Juſſ.

GENERIC CHARACTER.

CAL. *Common* roundiſh, imbricated, ventricoſe at the baſe: ſcales lanceolate, acute.

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[a] Aublet.

Cor. *Compound* imbricated, uniform: *corollets* hermaphrodite, equal, numerous.

Proper one-petalled, ligulate, linear, truncate, five-toothed.

Stam. *Filaments* five, capillary, very ſhort. *Anther* cylindrical, tubular.

Pist. *Germ* ovate. *Style* filiform, the length of the ſtamens. *Stigmas* two, reflex.

Per. none. *Calyx* converging, globular-acuminate.

Seeds ſolitary, oblong. *Down* feathered, ſtipitate.

Rec. chaffy: *chaffs* lanceolate-linear, the length of the ſeeds.

Obs. *In* H. glabra *and* minima, *the ſeeds of the diſk have a ſtipitate down, but in thoſe of the ray it is ſeſſile.* Haller, Cyrillo.

ESSENTIAL CHARACTER.

Cal. ſubimbricate. *Down* feathered. *Recept.* chaffy.

SPECIES.

1. Hypochoeris helvetica. *One-flowered Hypochoeris.*

Lin. ſyſt. 721. *Jacqu. miſc.* 2. 25. *icon. rar. t.* 4.

H. uniflora. *Allion. pedem. n.* 850. *t.* 32. *f.* 1. *Villars dauph.* 3. 61. *t.* 23.

Hieracium alpinum, fol. dentatis, fl. magno. *Bauh. pin.* 128. *prodr.* 65. *Hall. enum.* 760. *t.* 24. *Park. theat.* 797. *Raii hiſt.* 237.

Dens Leonis latifolius cauleſcens. *Bauh. prodr.* 62. *Raii hiſt.* 237.

Stem ſimple leafy one-flowered, leaves lanceolate toothed.

2. Hypochoeris maculata. *Spotted Hypochoeris.*

Lin. ſpec. 1140. *ſyſt.* 721. *Reich.* 3. 661. *hort. cliff.* 385. *fl. ſuec. n.* 708. *Hudſ. angl.* 346. *Wither. arr. ed.* 3. 691. *Engl. bot. t.* 225. *Relh. cant. n.* 579. *Hall. helv. n.* 2. *t.* 1. *Pollich pal. n.* 754. *Fl. dan. t.* 149. *Villars dauph.* 3. 62. *Krock. ſileſ. n.* 1315.

Achyrophorus maculatus. *Scop. carn. n.* 986.

Hieracium alpinum latifolium hirſutie incanum, flore magno. *Bauh. pin.* 128. *Mor. hiſt. ſ.* 7. *t.* 5. *f.* 53.

H. latif. 1. *Cluſ. hiſt.* 2. 139. 2. *Raii ſyn.* 167. *Bauh. hiſt.* 2. 1027. 1. *Petiv. brit. t.* 13. *f.* 1. *Ger.* 237. 1. *emac.* 301. 1.

Dens leonis fol. integris, caule raris foliis veſtito monanthes fere. *Raii hiſt.* 244.

Hieracium latifolium pannonicum. *Park. theat.* 799. 13.

Stem almoſt naked, branch ſolitary, leaves ovate-oblong entire toothed.

3. Hypochoeris glabra. *Smooth Hypochoeris.*

Lin. ſpec. 1140. *ſyſt.* 721. *Reich.* 3. 662. *hort. cliff.* 386. *n.* 4. *hort. upſ.* 240. *Gærtn. fruct.* 2. 374. *Hudſ. angl.* 347. *Wither. arr. ed.* 3. 692. *Curt. lond.* 3. 53. 145. *Lightf. ſcot.* 442. *Hall. helv. n.* 3. *Pollich pal. n.* 755. *Fl. dan. t.* 424. *Villars dauph.* 3. 64. *Krock. ſileſ. n.* 1316.

Hieracium minus, dentis leonis folio oblongo glabro. *Bauh. pin.* 127. *Mor. hiſt. ſ.* 7. *t.* 4. *f.* 35. *Raii hiſt.* 229?

H. parvum in arenoſis naſcens, ſeminum pappis denſius radiatis. *Raii ſyn.* 166. *Petiv. brit. t.* 12. *f.* 4. & *t.* 11. *f.* 12.

H. minimum. *Col. ecphr.* 2. 27. 2.

4. Hypochoeris radicata. *Long-rooted Hypochoeris.*

Lin. ſpec. 1140. *ſyſt.* 721. *Reich.* 3. 662. *hort. cliff.* 386. *fl. ſuec. n.* 709. *Hudſ. angl.* 347. *Wither. arr. ed.* 3. 692. *Curt. lond.* 3. 52. 152. *Lightf. ſcot.* 443. *Relh. cant. n.* 580. *Hall. helv. n.* 3. *Pollich pal. n.* 756. *Fl. dan. t.* 150. *D'Aſſo arag.* 776. *Villars dauph.* 3. 63. *Krock. ſileſ. n.* 1317.

Achyrophorus radicatus. *Scop. carn. n.* 987. *Gærtn. fruct.* 2. 370.

Hieracium dentis leonis folio obtuſo, majus. *Bauh. pin.* 127. *Mor. hiſt. ſ.* 7. *t.* 4. *f.* 27.

H. longius radicatum. *Lob. obſ.* 120. 2. *ic.* 1. 238. 1. *Ger.* 227. 7. *emac.* 298. 6. *Park. theat.* 790. 1. *Raii hiſt.* 230. *ſyn.* 165. *Pet. brit. t.* 11. *f.* 11.

H. tertium. *Dod. pempt.* 639. 2.

Leaves runcinate obtuſe rugged, ſtem branched naked even, peduncles ſcaly.

5. Hypochoeris minima. *Leaſt Hypochoeris.*

Cyrill. neap. 1. 29. *t.* 10.

Leaves ſinuate-lyrate, ſtem with ſcaly appendixes at top.

DESCRIPTIONS, &c.

1. Root perennial, almoſt fuſiform, thickiſh, ſomewhat woody, ſometimes divided, dark brown on the outſide, white within, milky, putting up one, ſometimes two or three ſtems, among abundance of radical leaves. Stem about a ſpan high, ſtraight, thickening towards the top, hollow, round, ſtriated, hirſute, quite ſimple, always one-flowered. Root-leaves lanceolate, entire with the edges repand-toothed, hirſute above and below, ſpotted with black but not always. Stem-leaves two or three, remote, ſeſſile, lanceolate, repand-toothletted, flat, hirſute, gradually ſmaller. Flower very large, from erect ſpreading. Calyx cylindrical rather than round, very irregular; ſcales bluntly lanceolate, hirſute, keeled, winged as it were on the ſides with a broadiſh ſerrate membrane: ſome of the outer ones are wholly membranaceous without a keeled back, and theſe are puſhed back within the grooves of the inner ſcales. Corollets very numerous, long, deep yellow, five-toothed, from erect ſpreading, with yellowiſh white villoſe hairs at the baſe. Seeds from an ovate baſe gradually attenuated, naked, with a ſeſſile feathered down at top. Chaffs of the receptacle the length of the calyx, yellow and ſubſerrate towards the top. The plant has no ſmell[a].

Allioni obſerves, that the calyx is thicker than in the next ſpecies, with which this has been confounded; the ſtem leafy, the leaves continually ſmaller and upright; the ſcales of the calyx not only bearded with black villoſe hairs, but jagged and ciliate on the edge: whereas in H. maculata the leaves are wider, and the root-leaves ſpread on the ground: the ſtem almoſt naked, often branched, and higher; the ſcales of the calyx not jagged.

According to Monſ. Villars, the ſtem is ſolitary, two feet high, very thick and villoſe, with leaves at the bottom, but naked or having a ſingle leaf only, from the middle to the top, where it ſpreads out, becoming more villoſe on the outſide, and more hollow within. Leaves oblong, villoſe, pointed and toothed, raiſed up and not lying on the ground, nor ſpotted. Calyx very large and villoſe, compoſed of large flatted ſcales, with the lateral membranes cut and jagged irregularly, like ſome ſpecies of Centaurea. Seeds very long, fuſiform, crowned by a feathered ſtiped egret. Chaffs longer than the ſeeds, and almoſt as high as the hairs of the egret.

Native of the mountains of Carinthia, Dauphiné, and ſeveral parts of the Alps.

2. Root thick and long, abounding with milky juice, as does the reſt of the plant. Leaves all radical, except the plant becomes luxuriant from cultivation; oblong, ſomewhat pointed, very irregularly toothed, rough, ſpotted (as in the ſtem) with red or brown ſpots. Stem commonly ſimple, roughiſh, with one or two diſtant, lanceolate bractes, and terminated by one large flower. Outer ſcales of the calyx rough with black prominent briſtles, intermixed with ſcattered white ones: the inner ſmooth, yellowiſh, half as long as the florets, hairy, compoſed of large ſcales. The flower opens at ſix in the morning, and cloſes at four in the afternoon. Seeds wrinkled. The ſtem, though generally ſimple, has ſometimes a branch or two.

The leaves are boiled in Smoland and eaten like cabbage; though bitter they are eaten green by animals, particularly thoſe which ruminate, greedily. The country people believe the plant to be a cure for tetters, and other cutaneous eruptions, poſſibly on account of its ſpotted leaves[b].

Native of many parts of Europe. In England not common. On Gogmagog hills, Newmarket heath, &c. in Cambridgeſhire. Bernack heath, in Northamptonſhire. About Malham Cove, Cartmell Wells, and near Settle in Yorkſhire, &c. flowering in July, and perennial.

3. Root annual, the thickneſs of a crow quill, tapering, furniſhed with few fibres, pale brown. Root-leaves numerous, ſpread on the ground, about the length and breadth of the little finger, ſinuate-toothed,

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[a] Jacquin miſc.

[b] Engl. bot. Relh. With. Woodw. Mſs.

a little broader at top, ſmooth, but not perfectly ſo, the edges particularly being thinly ſet with ſtiffiſh hairs; thoſe on the ſtem few, and very minute. Stems uſually ſeveral, about ſeven inches high, nearly upright, divided into two or three branches, round, almoſt naked, glaucous. Peduncles ſcaly, a little thickened under the flower. Flowers very ſmall. Calyx at firſt cylindrical; but, when the flowering is over, becoming of an oblong conical ſhape, and large; the ſcales ſmooth, ovate-lanceolate, unequal, with red tips. Tube of the corollet with a few ſtiffiſh hairs at top; the border five-toothed. Chaffs of the receptacle concave, ſhining, deciduous. Seeds ſublinear, tapering to a point at bottom, cheſtnut-coloured; viewed with a magnifier finely grooved and rough. Down unequal, ſtiffiſh [c].

The ſtem is ſometimes ſimple, in the autumn it is much branched and reclining. Leaves ſhining, and their teeth triangular, ſometimes edged with white hairs [d].

It may be diſtinguiſhed by the ſmallneſs of the flowers, not exceeding the ſize of a ſilver threepence, while the heads containing the ſeeds are altogether as large in proportion to the ſize of the plant. The flowers are open from about nine in the morning till about one or two in the afternoon. It delights in a gravelly or ſandy ſoil, and expoſed ſituation, and flowers in june [e].

4. Root perennial, the thickneſs of the little finger, running deeply into the earth, generally ſimple, of a whitiſh colour, and milky within. Root-leaves ſpread on the ground, oblong-wedgeſhaped, waved or toothed, hairy, the hairs ſimple, upright, and proceeding from little prominent points. Stems often ſeveral, from one to two feet high, nearly upright, naked, inſtead of leaves having only ſhort, ovate, pointed, ciliate ſcales at the baſe of each branch; they are very ſmooth, glaucous, ſomewhat ſtriated, tough and ſolid; the ſcales are lanceolate, with a few white briſtly teeth at the baſe on each ſide. Peduncles long, beſet with a few ſcales, a little thickened towards the top, one-flowered. Flower large, cloſing at three in the afternoon. Calyx not diſtended at the baſe; ſcales ovate or linear-lanceolate, pointed, ſmooth, reddiſh at top, with a row of ſhort, taper, dark purple briſtles along the upper part of the keel. Tube of the corollet hairy at top; border reddiſh green on the outſide, five-toothed. Seeds rough and finely grooved, reddiſh. Stipe of the down longer than the ſeed; down rather longer than the ſtipe. Chaffs linear, long, ſhining, membranous, concave, tapering and yellow towards the top.

It is diſtinguiſhed from Leontodon autumnale by the length of the root, whence it derives the trivial name; and is common on dry banks, heaths and paſtures, flowering from may to ſeptember; in the early part of ſummer it is a conſpicuous plant.

In barren ſoils it occurs of a much ſmaller ſize, five or ſix inches high, with an unbranched ſtem, or with one flower almoſt ſeſſile on the ſide [f].

Theſe plants are named Hawkweed in Engliſh, in common with many others; Dr. Withering calls them *Cat's-ears*.

5. Root downright, two or three inches long, annual, fibrous. Root-leaves decumbent, ſomewhat rugged. Stem naked, ſimple, one-flowered, or ſometimes divided into two or three one-flowered branchlets: towards the top are ſome ſmall, linear ſcales, preſſed cloſe to the ſtem, and mortified at the ſides. Stem a palm in height, ſmooth. Flower ſmall, equal. Calyx almoſt calyculate; ſcales unequal, acute, mortified at top. The flowers are open from eleven in the morning to two in the afternoon. Seeds in the circumference with a ſeſſile ſimple down; in the diſk they are on a very long ſtipe. Chaffs of the receptacle minute.

Native of Italy, near Naples, on volcanic ground, particularly the Solfatara; flowering from may to july [g].

HYPOCHÆRIS. See *Seriola*.

HYPOXIS. (Υποξυς, *leviter acuminatus*, *ſubacutus*, *ſharpiſh*.)
Lin. gen. n. 417. *Reich.* 450. *Schreb. n.* 565. *Gærtn. t.* 11. *Juſſ.* 35.
Claſſ. 6. 1. Hexandria Monogynia.
Nat. order of *Coronariæ.—Narciſſi*, Juſſ.

GENERIC CHARACTER.

CAL. *Glume* two-valved.

COR. one-petalled, ſuperior: *limb* ſix-parted; *ſegments* ovate-oblong, ſpreading: permanent.

STAM. *Filaments* ſix, very ſhort, capillary. *Anthers* oblong, ſhorter than the petals.

PIST. *Germ* inferior, turbinate. *Style* filiform, the length of the ſtamens. *Stigma* bluntiſh.

PER. *Capſule* ſomewhat oblong, narrower at the baſe, crowned with the permanent corolla, three-celled, three-valved. (valveleſs. *G.*)

SEEDS very many, roundiſh.

ESSENTIAL CHARACTER.

Cal. a two-valved glume. *Cor.* ſix-parted, permanent, ſuperior. *Capſ.* narrower at the baſe.

SPECIES.

1. Hypoxis erecta. *Upright Hypoxis.*
Lin. ſpec. 439. *ſyſt.* 326. *Reich.* 2. 51.
H. juncea. *Smith. ſpicil.* 15. *t.* 16.
Ornithogalum hirſutum. *Lin. ſpec. ed.* 1. 306. *Gron. virg.* 1. 37. & 2. 51. *Cateſb. car.* 1. 33. *Pet. gaz. t.* 1. *f.* 11. *Pluk. phyt. t.* 350. *f.* 8.
Hairy, with ovate capſules.

2. Hypoxis decumbens. *Trailing Hypoxis.*
Lin. ſpec. 439. *Reich.* 2. 52. *amoen.* 5. 396. *Swartz. obſ.* 126. *Brown. jam.* 195. (Ornithogalum). *Plum. ic.* 108. *f.* 2.
Anthericum ſeſſile. *Mill. fig. t.* 39. *f.* 2.
Hairy, with club-ſhaped capſules.

3. Hypoxis ſpicata. *Spiked Hypoxis.*
Thunb. jap. 136. *Lin. ſyſt.* 326.
Upright, leaves enſiform, falcate, ſmooth, flowers in ſpikes.

4. Hypoxis plicata. *Plaited-leaved Hypoxis.*
Lin. ſuppl. 197. *ſyſt.* 326. *Ait. hort. kew.* 1. 438.
Fabricia plicata. *Thunb. in Fabric. it. norveg.* 29.
Scape one-flowered, three-ſided, leaves lanceolate, plaited, villoſe.

5. Hypoxis ſtellata. *Spotted-flowered Hypoxis.*
Lin. ſuppl. 197. *ſyſt.* 326. *Hort. kew.* 1. 438.
Fabricia ſtellata. *Thunb. in Fabric. it. norveg.* 27.
Amaryllis capenſis. *Lin. ſpec.* 420. *ſyſt.* 319. *Reich.* 2. 25. *mant.* 363.
Scape one-flowered, leaves linear, ſtriated, petals ſpotted.

6. Hypoxis aquatica. *Aquatic Hypoxis.*
Lin. ſuppl. 197. *ſyſt.* 326. *Hort. kew.* 1. 439.
Leaves linear, ſcapes umbelled or one-flowered.

7. Hypoxis ſerrata. *Channel-leaved Hypoxis.*
Lin. ſuppl. 197. *ſyſt.* 326. *Hort. kew.* 1. 439.
Fabricia ſerrata. *Thunb. in Fabric. it. norveg.* 29.
Leaves channelled, ſmooth, ciliate-ſerrate, ſcapes one-flowered.

8. Hypoxis villoſa. *Hairy Hypoxis.*
Lin. ſuppl. 198. *ſyſt.* 326. *Hort. kew.* 1. 439.
H. Fabricia. *Gærtn. fruct.* 1. 33.
Fabricia villoſa. *Thunb. in Fabric. it. norveg.* 31.
Leaves linear-enſiform, villoſe, ſtigma ſimple, three-cornered, acute.

9. Hypoxis faſcicularis.
Lin. ſpec. 439. *Reich.* 2. 52. *Ruſſ. alepp.* 34. *t.* 2. 9. (Allium.)
Tube of the flowers very long.

10. Hypoxis ſeſſilis.
Lin. ſpec. 439. *Reich.* 2. 52. *Dill. elth.* 298. *t.* 220. *f.* 287. (Ornithogalum).
Hairy, ſtemleſs, fructifications ſubradical, leaves linear, ſtraight.

11. Hypoxis minuta.
Lin. ſuppl. 197. *ſyſt.* 326.
Helonias minuta. *Lin. mant.* 225. *ſyſt. ed.* 13. 288.
Leaves three-ſided, fleſhy, ſmooth, ſcapes bifid.

12. Hypoxis ovata.
Lin. ſuppl. 197. *ſyſt.* 326.
Leaves ovate-lanceolate, entire, ſmooth, ſcapes one-flowered.

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[c] Curtis.
[d] With. & Woodw.
[e] Curtis.
[f] Curtis, Withering, Woodw. Mſs.
[g] Cyrillo.

13. Hypoxis alba.
Lin. ſuppl. 198. *ſyſt.* 326.
Leaves cylindric, ſmooth, ſcapes ſubbifid, petals unſpotted.
14. Hypoxis aurea.
Lour. cochinch. 200.
Stemleſs, hairy, ſcape one-flowered, capſules oblong.

DESCRIPTIONS, &c.

1. Leaves like thoſe of Carex or Juncus piloſus. Scape ſhorter than the leaves, upright, hairy. Bractes two, awl-ſhaped, upright, between which is one ſeſſile flower (ſometimes two) the length of the bractes [a].

Hypoxis juncea or Ruſhy Hypoxis of Dr. Smith, found by Mr. John Fraſer in boggy ground in Carolina, does not ſeem to be a different ſpecies, although the ſcapes are ſingle-flowered, as in Smith's and Cateſby's figures; whereas in thoſe of Petiver and Plukenet, referred to by Linneus, two flowers are repreſented together. It is thus deſcribed by Dr. Smith.

Root tufted, with fleſhy branched fibres. Leaves radical, ſeveral, ruſhy, a ſpan long, erect, a little recurved at the top, linear, pointed, entire, keeled; channelled and bare on the upper ſide, hairy on the back; dilated and ſheath-like at the baſe. Stems two or three, ſhorter than the leaves, upright, round, hairy, reddiſh above, each bearing one upright flower, in ſize and appearance like that of Ornithogalum luteum. Corolla externally green and hairy, with a red rib; internally concave, yellow, ſmooth, without veins or nerves. Stamens much ſhorter than the corolla: filaments cylindrical, three a little longer than the other three: anthers oblong, incumbent, cloven at the baſe, after diſcharging their pollen becoming ſhorter and almoſt round. Germ obconical, ſlender, ſcarcely perceptible till after flowering: ſtyle very ſhort: ſtigma triangular, feathery.

Native of North America. Introduced in 1784, by Mr. William Young. It flowers in june [b].

2. Bulb roundiſh, fleſhy, brown, putting out fibres from the ſide. Leaves radical, ſheathing at the baſe, forming as it were a ſhort ſtem, graſſy, keeled, a ſpan long, recurved, ſharp, ſtriated, ſomewhat hairy. Peduncles radical from the ſheaths among the leaves, about flowering time ſhort, but afterwards lengthened out, filiform, two-edged, few-flowered. Spathes two-leaved; leaves ſmall, linear, pubeſcent. The three outer parts of the corolla lanceolate, acute, hairy on the outſide, permanent; the three inner ſmooth, yellow, greeniſh on the outſide, withering. Stamens alternate with the ſegments of the corolla, three longer, three ſhorter; anthers ſagittate. Germ oblong: ſtyle awl-ſhaped: ſtigma blunt. Capſule oblong, three-cornered, crooked, rough with hairs, crowned with the permanent corolla. Seeds wrinkled, black [c].

Native of Jamaica, in ſandy fields among the mountains. The roots came accidentally to Mr. Miller among ſome plants of Allſpice [d]; and he cultivated them in 1755. It flowers moſt part of the year [e].

3. Root compoſed of capillary fibres in bundles. Leaves radical, many, entire, three-nerved, ſhorter than the ſcape, a ſpan in length. Scape filiform, ſlightly angular, flexuoſe, upright, villoſe, a foot high. Flowers from the middle to the top of the ſcape, in ſpikes, alternate, remote, very many. Capſule and rachis very rough with hairs. Native of Japan; flowering in may and june [f].

4. Bulb globular. Leaves enſiform, ſubciliate, toothletted at the baſe, on the keel and about the edge. Scapes leafleſs, without bractes. Spathe hidden. Corolla yellow, green on the outſide. Anthers bifid at the baſe. Native of the Cape of Good Hope, on ſandy hills: found there by Thunberg [g]. Introduced in 1788, by Mr. Francis Maſſon [h].

5. This is a beautiful little bulbous plant, with a dark ſpot at the claws of the petals. It was firſt named Amaryllis capenſis by Linneus, and is thus deſcribed in the Amoenitates Academicæ.—Leaves like thoſe of Narciſſus; the length of the ſcape, which is ſheathed below the middle; the ſpathe permanent, acuminate, flat; petals lanceolate, black at the baſe within; filaments very ſhort; anthers erect, ſhorter by half than the petals; ſtyle three-cornered, the length of the anthers, with three ſtigmas. Amaryllis capenſis of Miller is different. Reichard refers to A. vernalis of Miller as the ſame with this; but Miller makes that to be a native of Spain and Portugal.

Native of the Cape of Good Hope, where it was obſerved by Thunberg [i]. It was introduced in 1788, by Mr. Francis Maſſon [k].

6. Leaves radical, looſe, bending at the end. Scapes filiform, the height of the water. Flowers in ſome ſolitary, hermaphrodite; in others umbelled, male. Native of the Cape of Good Hope in watery ditches [l]. Introduced in 1787, by Mr. Francis Maſſon [m].

7. This alſo was found at the Cape of Good Hope by Thunberg [n]; and was introduced by Maſſon in 1788. It flowers in july [o].

8. Capſule ſmall, narrower at the baſe ſo as to be almoſt club-ſhaped, knobbed with the protuberating ſeeds, villoſe, membranaceous, very thin, valveleſs, of a herbaceous colour on the outſide, within ſmooth and coloured. Partitions very thin, fixed to the axis and walls of the capſule. Seeds two or three only in each cell, ſubglobular, black, ſmall, rendered a little rugged by very minute raiſed dots, fixed to the inner angle of the cells in a ſingle row. Embryo ſtraight, the length of half the albumen [p].

It varies in ſize, and is a native of the Cape of Good Hope [q]. It was found there by Mr. Francis Maſſon; was introduced in 1774, and flowers moſt part of the ſummer [r].

9. Native of the country about Aleppo.

10. Leaves ſeveral, a long ſpan in length, keeled, like thoſe of Juncus piloſus, hairy all over, but moſt conſpicuouſly round the edge, pale green on both ſides. Among the leaves, at bottom, ſpring out ſeſſile oblong heads, bluntly three-cornered, at the top of which are the flowers. Petals pointed, plaited; three outer, broader, green, hairy; three inner narrower, ſmooth, yellowiſh green. Stamens incloſed within the corolla, which kept cloſe, or opened very little. Seeds round, black, ſhining. It flowers at the end of june, and in july. Native of Carolina, whence it came in the earth with other plants, and was cultivated in the Eltham garden before 1732 [s].

11. Bulb conical, large in proportion to the plant, truncated and margined beneath, and having linear converging ſcales at top. Leaves radical, ſomewhat fleſhy, acute, longer than the ſcapes, a finger's length. Scapes ſeveral, very ſhort, almoſt cylindrical, involved in ſcales at the baſe; branches or pedicels one-flowered. Corolla ſpreading, ſnow-white. Filaments ſhorter than the corolla. Anthers haſtate, upright, longer than the filaments. Germ oblong. Styles three, membranaceous, adhering to the germ in a pyramidal form. Native of the Cape of Good Hope, where it was found by Koenig [t].

12. Flower white and pretty. Found at the Cape of Good Hope by Thunberg.

13. This is a little plant, found alſo at the Cape by Thunberg [u].

14. This is an annual plant. Leaves awl-ſhaped, channelled, reflex, half a foot long, cluſtered. Scape round, ſlender, equal to the leaves. Corolla bell-ſhaped, equal, golden-coloured within, greeniſh on the outſide, hairy. Capſule oblong, three-ſided, hairy. Native of Cochinchina, on a ſandy hill called Son Koung [x].

PROPAGATION AND CULTURE.

For the Cape ſorts (4 to 8, 11, 12, 13.) ſee Albuca.

2. Trailing Hypoxis will not thrive well in England, unleſs the pots be plunged into a hot-bed of tanner's-

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[a] Linn. ſyſt.
[b] Hort. kew.
[c] Swartz.
[d] Mill. fig.
[e] Hort. kew.
[f] Thunberg.
[g] Ibid.
[h] Hort. kew.

[i] Linn. ſuppl. & mant.
[k] Hort. kew.
[l] Linn. ſuppl.
[m] Hort. kew.
[n] Linn. ſuppl.
[o] Hort. kew.
[p] Gærtner.
[q] Linn. ſuppl.
[r] Hort. kew.
[s] Dillenius.
[t] Linn. mant.
[u] Linn. ſuppl.
[x] Loureiro.

bark, and the air kept up to the heat aſſigned for Ananas. In this ſituation the plants will thrive, produce plenty of flowers, and perfect their ſeeds, which if ſuffered to ſcatter on the pots will produce plenty of young plants; or if they be ſown in pots ſoon after they are ripe, and planted into the tan-bed, they will come up in about ſix weeks, and when they are fit to tranſplant may be treated in the ſame manner as the old plants[y].

Hypoxis. See *Ornithogalum.*

Hypoxylon. See *Clavaria.*

HYPTIS. (*So named by Jacquin, from the reſupinate* (υπτιω) *limb of the corolla.*)

Lin. gen. Schreb. n. 969. *Jacqu. collect.* 1. 101. *Juſſ.* 449.

Claſſ. 14. 1. Didynamia Gymnoſpermia.

Nat. order of *Verticillatæ.—Labiatæ,* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* turbinate, half-five-cleft, permanent: *ſegments* lanceolate, acute, almoſt equal, upright.

Cor. one-petalled, ringent. *Tube* funnel-form: *throat* widened; *limb* ſpreading very much, reſupinate: *upper lip* (in ſituation the lower) trifid; lateral ſegments ovate, acute, the middle one roundiſh, concave, obtuſe: *lower lip* (in ſituation the upper) ſemibifid; ſegments ſemiovate, flat, acute.

Stam. *Filaments* four, awl-ſhaped, erect, of which two are ſhorter, *Anthers* twin, hanging down.

Pist. *Germ* four-cleft. *Style* filiform. *Stigma* bifid or ſimple.

Per. none. *Calyx* foſtering the ſeeds.

Seeds four.

ESSENTIAL CHARACTER.

Cal. turbinate. *Cor.* with a very ſpreading border; lower lip ſemibifid. *Anthers* hanging down.

SPECIES.

1. Hyptis verticillata.
Jacqu. collect. 1. 101.
Leaves lanceolate, flowers in whorls.

2. Hyptis capitata.
Jacqu. collect. 1. 102. *Plum. cat.* 6. *ic.* 155. *t.* 163. *f.* 2. (Meliſſa.)
Leaves ovate, flowers in heads.

DESCRIPTIONS.

1. This is a ſhrub ten feet in height, with one or two upright ſtems, near an inch in diameter, ſmooth, browniſh aſh-coloured, round and woody; but the younger branches are four-cornered and herbaceous. Leaves oppoſite, petioled, long-lanceolate, acute, unequally ſerrate, ſmoothiſh, from three to ſix inches in length. Whorls on the younger branches at the leaves ſeſſile, ſix-flowered. Corolla white, with the ſegments of the upper lip purple in the diſk. Calyx a little hiſpid on the back, and at the edges of the ſegments. Anthers pale yellow. Native of St. Domingo.

2. Stems ſuffruticoſe, two or three feet high or more, becoming woody, commonly four-cornered, brown. Branches annual, herbaceous, ſubdivided, four-cornered, roughiſh, two feet long. Leaves oppoſite, petioled, ovate, but with a ſharp baſe, veined, unequally ſerrate, acute, a little hairy on both ſides when viewed with a glaſs, dark green; the lower ones wrinkled, the largeſt ſeven inches long. Peduncles, axillary, ſolitary, four-cornered, ſlender, from two to three inches long, bearing at the end numerous flowers collected cloſely into a ſemiglobular head, ſupported underneath by an involucre compoſed of many lanceolate leaflets. The tube of the corolla is a little hairy on the outſide, but moſt ſo on the back of the helmet. The whole petal is white, with ſometimes a tinge of fleſh-colour. Calyx green, and a little hiſpid. Anthers yellow. The whole plant is inodorous. Native of St. Domingo, flowering there in december and january[z].

Hyssop. See *Hyſſopus.*

——— Hedge. See *Gratiola.*

Hyssopifolia. See *Lythrum.*

Hyssopium. See *Teucrium.*]

HYSSŌPUS. (*Υσσωπος of Dioſcorides.* Hyſſopus *of Pliny. So called q.* υομενον (*for* χευομενον) επι τον ωπα; *but more probably from the Hebrew.*)

Lin. gen. n. 709. *Reich.* 767. *Schreb. n.* 963. *Tournef. t.* 95.

Claſſ. 14. 1. Didynamia Gymnoſpermia.

Nat. order of *Verticillatæ.—Labiatæ,* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, cylindrical, oblong, ſtriated, acutely five-toothed, permanent.

Cor. one-petalled, ringent. *Tube* cylindrical, ſlender, the length of the calyx: *throat* inclined: *upper lip* ſtraight, flat, ſhort, roundiſh, emarginate: *lower lip* trifid; lateral ſegments ſhorter, blunt, the middle one crenate, obcordate, acute, with diſtant lobes.

Stam. *Filaments* four, upright, longer than the corolla, diſtant; the two upper ones ſhorter, but the two longer nearer to the lower lip. *Anthers* ſimple.

Pist. *Germ* four-parted. *Style* filiform, under the upper lip, and of the ſame length. *Stigma* bifid.

Per. none. *Calyx* foſtering the ſeeds.

Seeds four, ſubovate.

ESSENTIAL CHARACTER.

Cor. lower lip with a ſmall middle crenate ſegment. *Stam.* ſtraight, diſtant.

SPECIES.

1. Hyſſopus officinalis. *Common Hyſſop.*
Lin. ſpec. 796. *ſyſt.* 529. *Reich.* 3. 29. *mat. med.* 145. *Woodv. med. bot.* 181. *t.* 65. *hort. cliff.* 304. 1. *upſ.* 152. *Gouan hort.* 274. *illuſtr.* 35. *Pallas it.* 2. 507. *Jacqu. auſtr.* 3. *t.* 254. *Gmel. ſib.* 3. 244. *Hall. helv. n.* 249. *Blackw. herb. t.* 296. *Rivin. mon. t.* 68. *Sabb. hort.* 3. *t.* 79. *Berg. phyt* 2. 87.
H. officinarum cærulea ſ. ſpicata. *Bauh. pin.* 217.
H. vulgaris. *Dod. pempt.* 287. *Park. theat.* 1. *f.* 1. —ſpicatus anguſtifolius. *Bauh. hiſt.* 3. 274. *Raii hiſt.* 516.
H. arabum. *Ger.* 464. 1. *emac.* 579. 1.
α. fol. glabris, flor. cæruleis. *Blue-flowered Hyſſop.*
β. fol. glabris, flor. rubris. *Red-flowered Hyſſop. Ger.* 464. 2. *emac.* 579. 2.
H. rubra. *Mill. dict. n.* 2.—rubore flore. *Bauh. pin.* 217.
γ. fol. glabris, flor. albis. *White-flowered Hyſſop. Ger.* 464. 3. *emac.* 579. 3.
δ. fol. piloſis. *Hairy Hyſſop.*
H. hirſuta. *Bauh. pin.* 217.—fol. cinereis. *Park. parad.* 455.
Spikes directed one way, leaves lanceolate.

2. Hyſſopus Lophanthus. *Mint-leaved Hyſſop.*
Lin. ſpec. 796. *ſyſt.* 529. *Reich.* 3. 29. *hort. upſ.* 162. *Jacqu. hort.* 2. *t.* 182. *Comm. gott.* 2. 344. *t.* 14.
Cataria floribus inverſis. *Hall. gott.* 338.
Corollas reſupinate, lower ſtamens ſhorter than the corolla, leaves cordate.

3. Hyſſopus Nepetoides. *Square-ſtalked Hyſſop.*
Lin. ſpec. 796. *ſyſt.* 529. *Reich.* 3. 29. *hort. upſ.* 163. *Gouan illuſtr.* 35. *Jacqu. hort. t.* 69. *Gron. virg.* 2. 88.—*vir. cliff.* 58. *Gron. virg.* 1. 66. *Herm. par.* 106. (Nepeta). *hort. cliff.* 316. (Brunella).
Betonica virginiana elatior, fol. ſcrophulariæ glabris, flore ochroleuco. *Pluk. phyt. t.* 150. *f.* 3. *Mor. hiſt.* 3. 365. *ſ.* 11. *t.* 4. *f.* 11. *Herm. par. t.* 106.
Stem ſharp, quadrangular.

DESCRIPTIONS, &c.

1. Height a foot and half. Stems firſt ſquare, afterwards round, with ſmall ſeſſile leaves in pairs on their lower part, and ſeven or eight very narrow erect leaves or bractes, ſpringing from the ſame joint: on the upper part flowers in whorls, the lower ones half an inch apart, the upper almoſt joined. Anthers twin. Seeds black. The whole plant has a ſtrong aromatic ſcent. It flowers in july and auguſt, and the ſeeds ripen in ſeptember. The roots will abide many years.

[Root woody, hard, the thickneſs of a finger. Stems very numerous, from a foot to eighteen inches high, ſhrubby, ſtraight, not much branched, whilſt tender ſquare, but becoming round as they grow woody. Leaves numerous, narrow, ſmooth, entire, like thoſe of Lavender, but much ſhorter, acute, dotted. Whorls of flowers from the boſoms of the leaves, on two many-flowered peduncles ſhorter than the leaf, directed one way, and continued into a ſpike. Corolla blue, varying to red and white[a].

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[y] Mill. fig.

[z] Jacquin.

[a] Ray & Haller.

Native of the South of Europe, and Siberia, Miller ſays the Levant. Cultivated in 1596 by Gerarde[b].

There are many varieties of Hyſſop; Ray enumerates nine from Parkinſon and others. Mr. Miller makes that with red flowers to be a diſtinct ſpecies,] not growing ſo tall as the common ſort with blue flowers, branching more, the ſpikes of flowers much ſhorter, the whorls cloſer, having long narrow leaves under each, the corolla of a fine red colour. It is more tender, all the plants having been deſtroyed in the ſevere winter of 1739. That with white flowers does not differ from the blue in any other particular.

[Hairy Hyſſop, which Parkinſon calls Ruſſet Hyſſope, differs no otherwiſe than in the woollyneſs of the ſtem and leaves, giving them an aſh or ruſſet colour.

The leaves vary in colour as well as the flowers, ſome being white, ſtriped with white, or half green, half white. H. fol. niveis. *Park. parad.* 455.—Others with the leaves wholly yellow, or but a little green in them. H. aureus; yellow or golden Hyſſop of Parkinſon; which he ſays is of ſo pleaſant a colour, that it provokes many Gentlewomen to wear them in their heads and on their arms, with as much delight as many fine flowers can give. The leaves are alſo ſometimes curled, or crampled at the edges, as Parkinſon ſpeaks, ſo that each leaf ſeemeth to be compoſed of many: or jagged and dented, foliis crenatis: or larger and broader, on more woody ſtalks. H. latifolia of Parkinſon[c].

Hyſſop alſo varies in the ſtem, which is ſometimes much higher than common;] hence H. altiſſimus of Miller, n. 3., which beſides having a much taller ſtem, has narrower leaves, the whorls farther aſunder, the ſpikes much longer, the flowers larger, and of a deeper blue, and the plant leſs odorous. [Sometimes it is lower; as in H. minor and humilior myrrhi folio of Tournefort, which has the leaves a little blunter and ſhorter than in the common ſort[d]: H. minor ſ. hiſpanica of Parkinſon; H. parva anguſtis foliis of Lobel; and H. ſurculis denſis, or double Hyſſope of Parkinſon, which is not only of lower growth, but is more branched, ſlenderer, and not ſo woody, leaning towards the ground, more thick ſet with leaves, which are of a darker green, and thicker conſiſtence. He recommends it as fit to border a knot of herbs or flowers, becauſe it will abide, and not grow too woody or great, nor be thin of leaves in any part, but may be kept cutting ſmooth and flat.

Although the flowers commonly are directed all one way, yet ſometimes they point two different ways; hence H. utrinque florifera of Dodonæus.

And laſtly, the ſcent is ſometimes ſtronger than common, approaching to that of Muſk: hence H. moſchata vel de Ciliſſa, or muſked Hyſſope of Parkinſon.]

2. Root ſtrong, fibrous, perennial, ſending out many ſquare ſtalks, which divide into ſmaller branches. Leaves oblong, crenate. Flowers produced at each joint in ſmall cluſters; two peduncles ſpringing from the baſe of the leaves, about half an inch long, both inclining to one ſide of the ſtalk; each of theſe divides again into two ſmaller, and theſe each ſupport a cluſter of four or five flowers, with ſwelling tubulous calyxes. The tube of the corolla is longer than the calyx; the lips are oblique to it, being placed horizontally; the colour is blue. The flowers appear in june and july, and the ſeeds ripen in ſeptember.

It grows naturally in Siberia. The ſeeds were ſent to Mr. Miller from the imperial garden at Peterſburgh, and afterwards from Holland. [He cultivated it in 1759[e].]

3. Root perennial. Stem upright, near four feet high. Leaves oblique heart-ſhaped, ſerrate, acute, on ſhort foot-ſtalks. Flowers yellow, in cloſe thick ſpikes four or five inches long. Upper lip of the corolla divided into two roundiſh ſegments; the two ſide ſegments of the lower lip erect, the middle one reflex, acutely ſerrate at the end. Seeds brown.

[Native of Virginia and Canada. Cultivated in 1692, in the Botanic Garden at Oxford[f].

Gouan remarks that it has the appearance of Galeopſis; that the ſtem is either green and very even, with ſmooth leaves; or hairy, tinged with purple, and hairy leaves; that the ſpikes are cylindrical, nearly as thick as the little finger, three inches long, very ſmooth and cloſe; that the bractes are large and cordate-ovate; and that there are from four to eight flowers to each bracte.]

There is a variety with purple ſtalks and flowers, the leaves on longer foot-ſtalks, and the ſpikes of flowers thicker.

PROPAGATION AND CULTURE.

1. Common Hyſſop with all its varieties may be propagated either by ſeeds or cuttings; if by ſeeds, they muſt be ſown in march, upon a bed of light ſandy ſoil, and when the plants come up, they ſhould be tranſplanted out to the places where they are to remain, placing them at leaſt a foot aſunder each way; but if they are deſigned to abide in thoſe places for a long time, two feet diſtance will be ſmall enough, for they grow pretty large, eſpecially if they are not frequently cut, to keep them within compaſs. If you would propagate them by cuttings, they ſhould be planted in april or may, in a border where they may be defended from the violent heat of the ſun; and being frequently watered, they will take root in about two months; after which, they may be tranſplanted where they are to continue, managing them as was before directed for the ſeedling plants.

They are very hardy plants, which will endure the cold of our winters in the open air, provided they are planted in a dry undunged ſoil; for when they are planted in a rich ſoil, they grow very luxuriant in ſummer, and are leſs able to reſiſt the cold in winter; ſo that when any of theſe plants grow out of the joints of old walls, as they frequently do, they will reſiſt the moſt ſevere froſt, and will be much more aromatic than thoſe which grow in a rich ſoil.

2, 3. Both theſe ſorts are alſo very hardy, and may be eaſily propagated by ſeeds ſown in autumn, for thoſe ſown in the ſpring often lie a year in the ground before they vegetate: when the plants come up, keep them clean from weeds, and thin them where they are too cloſe. The following autumn tranſplant them where they are to remain, and the roots will abide ſeveral years.

[HYSSOPUS. See *Dracocephalum, Rhinanthus, Sideritis, Thymbra.*

HYSTEROPHORUS. See *Parthenium.*

HYSTRIX. See *Barleria* & *Elymus.*

I.

JABORANDI. See *Piper.*

JABOTAPITA. See *Gomphia* and *Ochna.*

JACA TREE. See *Artocarpus.*

JACAPUCAYA. See *Lecythis.*]

JACEA. See *Carduus, Centaurea* [*Gorteria, Serratula, Stæhelina, Viola, Xeranthemum.*

JACK IN A BOX. See *Hernandia.*]

JACOBÆA. See [*Arctotis, Athanaſia, Cineraria, Conyza, Cotula, Crepis, Erigeron, Eupatorium, Inula*], *Othonna,* [*Pectis,*] *Senecio.*

[JACOBÆASTRUM and JACOBÆOIDES. See *Cineraria.*]

JACQUINIA. (*So named by Linneus, in honour of Nic. Joſ. de Jacquin, Profeſſor of Botany at Vienna, born at Leyden in* 1727, *and author of many ſplendid works.*)

Lin. gen. n. 254. *Reich.* 274. *Schreb.* 346. *Jacqu. amer.* 53. *Juſſ.* 151.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Dumoſæ?*—*Sapotæ,* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved: *leaflets* roundiſh, concave, permanent.

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[b] Hort. kew.

[c] Theat. p. 2.

[d] Gouan. illuſtr.

[e] Hort. kew.

[f] Ibid.

Cor. one-petalled. *Tube* bell-ſhaped, ventricoſe, longer than the calyx. *Border* ten-cleft: *diviſions* roundiſh, of which the five interior ones are ſhorter.

Stam. *Filaments* five, awl-ſhaped, ariſing from the receptacle. *Anthers* ſpear-ſhaped.

Pist. *Germ* ovate. *Style* the length of the ſtamens. *Stigma* headed.

Per. *Berry* roundiſh, acuminate, one-celled.

Seed ſingle, roundiſh, cartilaginous.

ESSENTIAL CHARACTER.

Cor. ten-cleft. *Stam.* inſerted into the receptacle. *Berry* one-ſeeded.

SPECIES.

1. Jacquinia armillaris. *Obtuſe-leaved Jacquinia.*
Lin. ſpec. 272. *ſyſt.* 229. *Reich.* 1. 527. *Jacqu. amer.* 53. *t.* 39. *pict.* 31. *t.* 56. *Swartz. obſ.* 85.
Chryſophyllum Barbaſco. *Loefl. it.* 204. 277.
Xylocyſte fruticoſum, &c. *Brown. jam.* 372.
Arbor baccifera laurifolia, &c. *Sloan. jam.* 2. 89. *t.* 190. *f.* 2.
Leaves obtuſe, coriaceous, flowers in racemes, berries four-ſeeded or thereabouts.

[2. Jacquinia venoſa. *Vein-leaved Jacquinia.*
Swartz. prodr. 47.
Leaves ovate, lanceolate, veined, ſubmembranaceous.]

3. Jacquinia ruſcifolia. *Prickly Jacquinia.*
Lin. ſpec. 271. *ſyſt.* 229. *Reich.* 1. 527. *Jacqu. amer.* 55. *pict.* 32. *t.* 57.
Medeola aculeata. *Lin. ſpec. ed.* 1. 339.
Fruticulus fol. ruſci ſtellatis. *Dill. elth.* 148. *t.* 123. *f.* 149.
Leaves lanceolate, acuminate.

4. Jacquinia linearis. *Linear-leaved Jacquinia.*
Lin. ſpec. 272. *ſyſt.* 229. *Reich.* 1. 527. *Jacqu. amer.* 54. *t.* 40. *f.* 1. *pict.* 32. *t.* 32. *f.* 58.
Leaves linear, acuminate.

DESCRIPTIONS, *&c.*

1. [This is a very elegant upright ſhrub, ſeldom more than four or five feet high. Trunk round, thicker and knobbed where the branches come out, covered with an aſh-coloured bark. Branches four or five from each joint towards the top, in whorls, ſpreading, ſtiff, round, grooved, brittle, hoary, ſubdivided, and forming all together a neat globular head. Leaves ſcattered, alternate, petioled, cluſtered towards the ends of the twigs, wedge-ſhaped, ovate, obtuſely margined, quite entire, veinleſs, ſmooth, pale underneath, with very minute black dots. According to Jacquin, they are of different ſhapes between oblong and roundiſh, ſometimes blunt, ſometimes emarginate, but always with a little rigid point, rigid, narrowing into a very ſhort petiole, and ſometimes rolled back at the ſides. Racemes terminating, commonly ſhorter than the leaves, about two inches long, ſolitary, erect, looſe, ſimple, ſeven-flowered or thereabouts. Peduncles ſcattered, ſpreading, one-flowered. Flowers ſmall, ſtiffiſh, white, ſmelling like Jaſmine, and retaining their ſweet ſcent ſeveral days. Tube of the corolla narrower at the baſe, dilated above; the five outer ſegments are ſpreading and oblong, the five inner inſerted into the throat between the outer ones, roundiſh, crenulate, erect. Filaments from the baſe of the corolla, ſhorter than the tube: anthers ovate, white. Germ ſuperior: ſtyle ſhort, permanent: ſtigma blunt, purple. Berry roundiſh, ſmooth, the ſize of a large pea, of a reddiſh orange-colour, and containing an orange-coloured pulp. Seeds four, ſometimes, but ſeldom, three or five, ovate, ſmooth, ſhining, cartilaginous, browniſh yellow. The berries are eaten by ſmall birds, and the ſeeds are ſtrung for bracelets by the Caribees, whence the French in the iſlands call this ſhrub *Bois bracelets*, and Linneus gave it the trivial name of *armillaris*. The Spaniards call it *Barbaſco* or *Verbaſcum*.

Native of South-America and the Weſt-India iſlands; on the calcareous rocks of Jamaica, on the coaſt, flowering in february and march; in Curaçoa, Martinico, Carthagena, &c [a].

Cultivated by Mr. Miller in 1768 [b].

2. Native of the Weſt-Indies [c].

3. This is a ſhrub three feet in height, with all the habit of the preceding. It differs in having the leaves lanceolate, acuminate, pungent, extremely ſtiff, and ſhorter. The peduncles are pendulous as in that, and one-flowered. Native of South-America. Jacquin obſerved it at the Havannah in mountain woods, flowering in january and february [d]. It was cultivated in 1729, by James Sherard, M.D. [e]

4. This is a ſhrub two feet in height, very much branched, of the ſame habit with the two preceding, but not ſo neat. Leaves extremely rigid, pungent like thorns, often twiſted, ſubſeſſile, an inch long, moſt frequently four together in whorls at each joint. Peduncles one-flowered, ſolitary, terminating, pendulous, ſhorter than the leaves. Flowers ſtiffiſh, and without any ſmell. Petals white, with all the ſegments convex, the outer ones ſpreading, the inner almoſt erect. Berries yellow.

Native of the iſland of St. Domingo, about Port au Prince, on the coaſt, flowering and fruiting in january [f].]

PROPAGATION AND CULTURE.

Theſe plants muſt be kept in the bark ſtove, giving them little water in winter, and in warm weather plenty of freſh air. They are raiſed from ſeeds, procured from the countries where they grow naturally, and afterwards from cuttings; but it is with difficulty that theſe take root.

[Jacquinia. See *Trilix.*

Jalapa. See *Convolvulus* &c] *Mirabilis.*

[Jambolana and Jambolifera. See *Calyptranthes.*

Jambos and Jambosa. See *Eugenia.*

Jambusa. See *Gmelina.*

Jamma Goba. See *Phytolacca.*

Janipha. See *Gardenia* & *Jatropha.*

Jan-Raia. See *Rajania.*

Japarandiba. See *Guſtavia.*

Japotapita. See *Ochna.*]

JASIŌNE. (*From* σῖος *for* θεος, *and* ια, *viola; the divine violet. Linn.*—Ιασιωνη *of Theophraſtus, and* Jaſione *of Pliny.*)

Lin. gen. n. 1005. [*Reich.* 1090. *Schreb.* 1362. *Juſſ.* 166. *Gærtn. t.* 30.

Claſſ. 19. 6. Syngeneſia Monogamia.

Nat. order of *Campanaceæ.*—*Campanulaceæ,* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth common* ten-leaved: *alternate leaflets* interior, narrower, including very many flowers on very ſhort peduncles; permanent.

Perianth proper five-cleft, ſuperior, permanent.

Cor. proper one-petalled, regular, deeply five-cleft; *diviſions* lanceolate, upright.

Stam. *Filaments* five, awl-ſhaped, ſhort. *Anthers* five, oblong, connected at the baſe.

Pist. *Germ* roundiſh, inferior. *Style* filiform, length of the corolla. *Stigma* bifid.

Per. *Capſule* roundiſh, five-cornered, crowned with the proper calyx, ſubbilocular, gaping at the tip with a round hole. *Partition* divided at the axis.

Seeds many, ſubovate. *Receptacle* ſubgloboſe, pedicelled, free, in the baſe of the capſule.

Obs. *The central floſcules are often abortive: with an undivided club-ſhaped ſtigma.*

ESSENTIAL CHARACTER.

Cal. common ten-leaved. *Cor.* five-petalled, regular. *Capſ.* inferior, two-celled.

SPECIES.

1. Jaſione montana. *Mountain Jaſione* or *hairy Sheep's Scabious.*
Lin. ſpec. 1317. *ſyſt.* 799. *ed.* 13. 392. *Reich.* 3. 953. *hort. cliff.* 426. *fl. ſuec. n.* 782. *Gærtn. fruct.* 1. 149. *Hudſ. angl.* 377. *Wither. arr.* 949. *ed.* 3. 247. *Curt. lond.* 4. 58. 245. *Lightf. ſcot.* 504. *Relh. cant. n.* 638. *Jacqu. vind.* 289. *Gmel. ſib.* 2. 216. *Neck. gallob.* 365. *Leers herborn. n.* 681. *Pollich. pal. n.* 834. *Fl. dan. t.* 319. *Villars. dauph.* 2. 673. *Krock. ſileſ. n.* 1477. *Sabb. hort.* 1. *t.* 76. *Loes. pruſſ. t.* 73.

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[a] Swartz & Jacquin.

[b] Hort. kew.

[c] Swartz.

[d] Jacquin.

[e] Hort. kew.

[f] Jacquin.

Rapunculus. *Hall. helv. n.* 678.—ſcabioſæ capitulo cæruleo. *Bauh. pin.* 92. *Park. theat.* 646. *Raii hiſt.* 744. *ſyn.* 278. *Petiv. brit. t.* 55. *f.* 2.—corniculatus ſcab. capit. cæruleo. *Mor. hiſt. ſ.* 5. *t.* 5. *f.* 48.

Rapuntium montanum capitatum leptophyllum. *Col. ecphr.* 1. 226. *t.* 227.

Scabioſa. *Dod. pempt.* 122. 2.—minima hirſuta. *Ger. emac.* 723. 12.—globularis. *Bauh. hiſt.* 3. 12.—media. *Lob. obſ.* 291. 3. *ic.* 1. 536. 2.

Aphyllanthes. *Dalech. hiſt.* 804.

β. perennis. *Perennial Jaſione.*
Lin. ſuppl. 392. *ſyſt.* 799.

DESCRIPTION, *&c.*

Root annual, rigid, whitiſh and fibrous. Stems many, erect or procumbent, from a ſpan to a foot in height or more, ſomewhat rigid, beſet with ſhort rough hairs, angular, ſtriated, green, often tinged with purple; for ſomething more than one third of their height, they are cloathed with numerous leaves, which are linear or linear-lanceolate, waved at the margins, bluntiſh at the end, hairy on both ſurfaces, ſeſſile, and pointing upwards: the remainder of the ſtem is naked, and terminated by one flowering head. Several alternate branches, much ſhorter and more ſlender than the ſtem, ariſe among the upper leaves, each bearing alſo one head of flowers. Outer ſcales of the calyx ovate-lanceolate, obtuſe, with two or three teeth on each margin, hairy towards the baſe; inner lanceolate, toothed. Proper calyx of five briſtle-ſhaped ſegments. Corolla blue, ſometimes varying to white. Stigma club-ſhaped, purple[a]. Capſule membranaceous, very thin, pyramidal-ovate, two-celled: partition faſtened only to the walls of the capſule. Seeds ſlender, ovate-oblong, very ſmooth, ſhining, of a pale cheſtnut colour. It differs not only from Phyteuma, but from all the Campanaceous plants, by having the partition cloven at the axis[b].

Linneus remarks that the leaves are obſcurely ſerrated. Leers affirms that the calyx has conſtantly twenty leaflets, in four rows, ſubſerrated, the outer ones gradually larger. The anthers are at firſt almoſt wholly united, but when the pollen is evacuated they ſpread, and are joined only at the baſe. The central florets are barren, with the ſtigma club-ſhaped, quite entire, having pollen ſcattered over it, and not villoſe: the capſules are on very ſhort pedicels, and never ripen. The lateral florets, in greater numbers, are fertile; theſe have alſo a club-ſhaped ſtigma, which becomes afterwards bifid: becauſe the anthers of theſe have evacuated their pollen before the ſtigma burſts, it ſeems probable that the fecundation is made by the anthers of the barren florets. The ſtyles of the barren florets are all upright; but thoſe of the fertile ones are bent down, for the eaſier reception of the pollen. In this curious account of the proceſs of fecundation in this plant, the botaniſt cannot but remark the affinity that it bears in this circumſtance to the genuine plants of the claſs Syngeneſia, where Linneus placed it, and whence modern reformers have removed it. In its general appearance it ſo reſembles a Scabious as to be taken for one by unſkilful botaniſts.

It is common on dry ſandy grounds, heaths and hilly paſtures, flowering from june to auguſt. The whole plant is milky, and is ſometimes eaten by ſheep. Linneus ſays, that bees are particularly fond of the flowers.

Ray calls it Rampions with Scabious-like heads, and Withering, Scabious Sheep's-bit.

It varies much in ſize, and on the ſea coaſt of Cornwall it is only about an inch high when full grown, and the whole plant is very hairy.

β. The younger Linneus, in his Supplement, mentions a variety with perennial roots, the ſtem higher than in the common ſort, the heads of flowers larger. It varies with very ſmooth and very hairy leaves from the ſame root, ſome entire, and others ſerrate. Its native place is unknown; but the ſeeds were communicated by Monſ. Thouin. Villars affirms that the common Jaſione is perennial.

JASIONE. See *Aſtrantia.*

Jaſmini flore. See *Volkameria.*]

JASMINOIDES. See *Ceſtrum* & *Lycium.*

JASMINUM. (Ιασμινον *of Dioſcorides*; *from* ιον *viola*; *and* ισασμη *odor: on account of the fine odour of the flowers.*)
Lin. gen. n. 17. *Reich.* 17. *Schreb.* 22. *Tournef.* 368. *Juſſ.* 106. *Gærtn. t.* 42.
Claſſ. 2. 1. Diandria Monogynia.
Nat. order of *Sepiariæ.*—*Jaſmineæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, tubulated, oblong: *mouth* five-toothed, upright, permanent.

COR. one-petalled, ſalver-ſhaped. *Tube* cylindric, long; *border* five-parted, flat.

STAM. *Filaments* two, ſhort: *Anthers* ſmall, within the tube of the corolla.

PIST. *Germ* roundiſh: *Style* filiform, length of the ſtamens. *Stigma* bifid.

PER. *Berry* oval, ſmooth, two-celled or two-capſuled.

SEEDS two, large, ovate-oblong, arillated, convex on one ſide, flat on the other.

OBS. *The ſhape of the flower varies as to acuteneſs or obtuſeneſs. The berry is in ſome ſimple, in others dicoccous.*

ESSENTIAL CHARACTER.

Cor. ſalver-ſhaped. *Berry* dicoccous. *Seeds* ſolitary, arillated.

SPECIES.

1. [Jaſminum Sambac. *Arabian Jaſmine.*
Ait. hort. kew. 1. 8.]
Nyctanthes Sambac. *Lin. ſpec.* 8. *Reich.* 1. 15. *hort. upſ.* 4. *cliff.* 5. *fl. zeyl. n.* 12. *Lour. cochinch.* 21. *Gærtn. fruct.* 2. 109?
[Jaſminum limonii folio conjugato. *Burm. zeyl.* 128. *t.* 58. *f.* 2. *Hort. angl. t.* 7.
J. f. Sambac arabum, folio acuminato: *Till. piſ.* 87. *t.* 31.
J. arabicum. *Cluſ. cur.* 3. *t.* 3.
Syringa arabica, foliis mali aurantii. *Bauh. pin.* 398.
Flos manoræ. *Rumph. amb.* 5. 52. *t.* 30.
α. Flore ſimplici. *Single-flowered Arabian Jaſmine.*
β. Floribus multiplicatis, laciniis oblongis acutis tubo brevioribus. *Common double Arabian Jaſmine.*
γ. Flor. plenis, lacin. ſubrotundis tubo longioribus.
Kudda-mulla. *Rheed. mal.* 6. 89. *t.* 51.
Great-flowered double Arabian, or *Tuſcan Jaſmine.*
Leaves oppoſite, ſimple, elliptic, ovate and ſubcordate, membranaceous, opaque, branchlets and petioles pubeſcent, calycine ſegments awl-ſhaped.

2. Jaſminum glaucum. *Glaucous-leaved Jaſmine.*
Ait. hort. kew. 9. *Thunb. cap.* 2.
Nyctanthes glauca. *Lin. ſyſt.* 56. *ſuppl.* 82.
Jaſminum africanum, fol. ſolitariis, flor. vulgatiori ſimilibus. *Comm. rar.* 5. *t.* 5.
Leaves oppoſite, ſimple, lanceolate, ſhining, calycine ſegments awl-ſhaped.

3. Jaſminum capenſe.
Thunb. prodr. cap. 2.
Leaves oppoſite, ternate, ovate, acuminate, ſtem erect, angular.]

4. Jaſminum azoricum. *Azorian Jaſmine.*
Lin. ſpec. 9. *Reich.* 1. 16. *hort. cliff.* 5. *fl. zeyl. n.* 13. *Comm. hort.* 1. 159. *t.* 82. *Burm. zeyl.* 127. *t.* 58. *f.* 1.
Leaves oppoſite, ternate, leaflets ovate and ſubcordate, waved, branchlets ſmooth, round, ſegments of the corolla equal to the tube.

[5. Jaſminum angulare.
Vahl. ſymb. 3. 1.
Leaves oppoſite, ternate, leaflets ovate, obtuſe; branchlets angular, both they and the petioles villoſe, peduncles axillary, three-flowered.

6. Jaſminum auriculatum.
Vahl. ſymb. 3. 1.
Leaves oppoſite, ternate, on the flowering branchlets ſimple; calyxes angular, branches round and pubeſcent.

7. Jaſminum flexile.
Vahl. ſymb. 3. 1.
Smooth, leaves oppoſite, ternate, racemes axillary, brachiate, ſtem climbing, branches round.

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[a] Curtis & Woodw. Mſs.

[b] Gærtner.

8. Jaſminum didymum.
Forſt. prodr. auſtral. n. 8. *Vahl. ſymb.* 3. 2.
Smooth, leaves oppoſite, ternate, leaflets ovate-lanceolate, racemes axillary.

9. Jaſminum ſimplicifolium.
Forſt. prodr. auſtral. n. 7.
Leaves oppoſite, ovate-lanceolate, ſimple.]

10. Jaſminum fruticans. *Common Yellow Jaſmine.*
Lin. ſpec. 9. *Reich.* 1. 17. *hort. cliff.* 5. *upſ.* 5. *Hort. angl. t.* 6. *Gærtn. fruct.* 1. 196.
J. luteum, vulgo dictum bacciferum. *Bauh. pin.* 398. *Raii hiſt.* 1600.
Trifolium fruticans. *Dod. pempt.* 571. *Ger.* 1129. *emac.* 1310. *Park. parad.* 406. 3.
Polemonium monſpelienſe. *Beſl. eyſt. vern. frut. t.* 11. *f.* 4.
Leaves alternate, ternate, leaflets obovate and wedge-ſhaped, obtuſe, branches angular, calycine ſegments awl-ſhaped.

11. Jaſminum humile. *Italian Yellow Jaſmine.*
Lin. ſpec. 9. *Reich.* 1. 17. *hort. upſ.* 5. *cliff.* 6.
J. humile luteum. *Bauh. pin.* 397.
J. luteum. *Beſl. eyſt. æſtiv. t.* 40. *f.* 2. *Ger.* 746. *f.* 3. *emac.* 893. *f.* 3. *Raii hiſt.* 1599. 2.
Leaves alternate, acute, ternate and pinnate, branches angular, calycine ſegments very ſhort.

12. Jaſminum odoratiſſimum. *Yellow Indian Jaſmine.*
Lin. ſpec. 10. *Reich.* 1. 17. *hort. upſ.* 5. *cliff.* 5.
J. indicum flavum odoratiſſimum. *Ferrar. cult.* 93. *Raii hiſt.* 1600. *Park. theat.* 1465. 4.
J. flavum odoratum. *Barr. ic.* 62.
Leaves alternate, bluntiſh, ternate and pinnate, branches round, calycine ſegments very ſhort.

13. Jaſminum officinale. *Common White Jaſmine.*
Lin, ſpec. 9. *Reich.* 1. 16. *hort. cliff.* 5. *upſ.* 5. *mat. med.* 37. *Hall. helv. n.* 529. *Du Roi harbk.* 1. 314. *Blackw. t.* 13. *Curt. magaz. t.* 31. *Plenck. ic. t.* 9. *Lour. cochinch.* 20.
J. vulgatius. *Lob. ic.* 2. 105.—flore albo. *Bauh. pin.* 397. *Duham. arb.* 1. 309. *t.* 122.
J. fl. albo candido odorato. *Beſl. eyſt. æſtiv.* 2. 11. *t.* 2.
J. album. *Tabern.* 886. *Ger. herb.* 745. *f.* 1. *emac.* 892. 1. *Park. parad.* 406. *Raii hiſt.* 1599.
Gelſeminum vel Jaſminum album vulgare. *Park. theat.* 1464.
Leaves oppoſite, pinnate, leaflets acuminate, buds almoſt upright.

14. Jaſminum grandiflorum. *Spaniſh* or *Catalonian Jaſmine.*
Lin. ſpec. 9. *Reich.* 1. 16.
J. hiſpanicum, magno flore externe rubente. *Bauh. hiſt.* 2. 101. *f.* 102. *Merian. ſurin. t.* 46.
J. humilius magno flore. *Bauh. pin.* 397. *Raii hiſt.* 1600.
J. catalonicum. *Park. parad.* 406. 2. *theat.* 1464. 2.
J. candiflorum majus. *Ger.* 745. 2. *emac.* 892. 2.
Gelſeminum catalonicum. *Camer. epit.* 37.
Pitsjegam Mulla. *Rheed. mal.* 6. 91. *t.* 52.
Leaves oppoſite, pinnate, leaflets bluntiſh, buds horizontal.

[15. Jaſminum nervoſum.
Lour. cochinch. 20.
Leaves ovate, three-nerved.

16. Jaſminum trinerve.
Vahl. ſymb. 3. 2.
Leaves oppoſite, ſimple, ovate, attenuated, three-nerved, peduncles axillary, one-flowered.

17. Jaſminum ſcandens.
Vahl. ſymb. 3. 2.
Nyctanthes ſcandens. *Retz. obſ.* 5. *p.* 9. *n.* 3.
Leaves oppoſite, ſimple, ovate-oblong, attenuated, panicles brachiate, calycine ſegments briſtle-ſhaped, reflex.]

DESCRIPTIONS, *&c.*

1. Arabian Jaſmine riſes with a winding ſtalk to the height of fifteen or twenty feet, ſending out many ſmall branches. Leaves ſmooth, near three inches long, and almoſt two broad, of a light green, on ſhort foot-ſtalks, and ending in acute points. The flowers are produced at the end of the branches, and alſo upon the ſide ſhoots, on ſhort peduncles, each generally ſuſtaining three flowers, the two lower oppoſite, and the middle one longer. Calyxes cylindrical, ſhort, cut almoſt to the bottom into eight narrow ſegments. Tube of the corolla narrow, about half an inch long, cut at the top into eight obtuſe ſegments, which ſpread out quite flat: theſe flowers are of a pure white, and have a moſt agreeable odour, ſomewhat like Orange flowers, but ſweeter; when fully blown they drop out of their cups upon being ſhaken, and frequently fall out in the night, changing ſoon to a purpliſh colour. The plants continue flowering great part of the year, when they are kept in a proper temperature of warmth.

[Reichard, from Fabricius, obſerves, that the calyx is frequently ten or twelve-cleft. Loureiro, that both that and the corolla, though often eight-cleft, yet vary with from ſix to ten ſegments. He deſcribes the ſtem as ſhrubby, four feet high, almoſt upright, knotty, rugged and branched: the lower leaves cordate, obtuſe; the upper ovate, and ſharpiſh; all of them quite entire, wrinkled and ſmooth: flowers four or thereabouts together, always luxuriant and barren.

This beautiful plant, ſo much eſteemed for its highly odoriferous flowers, is a native of the Eaſt Indies, and is much cultivated there, in China, and the Weſt Indies. There are ſeveral varieties of it in thoſe countries. We have it both with ſingle and double flowers, and alſo with large double flowers. The laſt, Mr. Miller ſays] grows naturally at Malabar, and having a moſt agreeable odour, the women there ſtring the flowers to hang round their necks, by way of ornament. It grew in the royal garden at Hampton Court, at the end of the laſt century, but being loſt there, was known in Europe only in the garden of the Grand Duke of Tuſcany, who would not ſuffer any cuttings or layers to be taken from his plants; till Mr. Miller received a plant of it from the Malabar coaſt, by Captain Quick.

This ſort was cultivated here in 1730[a].

Gærtner affirms, that there are two different plants, one a genuine ſpecies of Jaſmine, with ſpherical berries, of a yellow bay colour, a little larger than Juniper berries, and containing a ſingle ſeed, manifeſtly berried; the other approaching in the whole of its ſtructure to Nyctanthes, and a genuine ſpecies of that genus. This he deſcribes under the names of Nyctanthes Sambac, but without determining whether it be that ſpecies or not.

2. Glaucous-leaved Jaſmine is a ſhrub, with round, even, oppoſite branches. Leaves petioled, ſmooth and even. Peduncles terminating, three-cleft or three-flowered. Flowers larger than thoſe of common Jaſmine. Native of the Cape of Good Hope, where it was found by Thunberg[b]; and alſo by Maſſon. It was introduced here in 1774, and flowers in auguſt[c].

3. Found alſo at the Cape by Thunberg[d].]

4. Azorian Jaſmine has longer ſlender branches, which require ſupport, and may be trained twenty feet high. Leaves of a lucid green, and continuing all the year. Flowers terminating, in looſe bunches. Tubes long and narrow, with ſpreading ſegments. The corolla is of a clear white, and has a very agreeable ſcent. Native of the Azores; [of Madeira, according to the Kew Catalogue. Cultivated in 1731, in the royal garden at Hampton Court. It flowers from may to november[e].

5. Branches oppoſite, round, with an aſh-coloured bark; branchlets four-cornered, with lines running down from the baſe of the petioles, ſomewhat rough-haired. Petioles channelled, hairy on the edge. Leaflets veinleſs, three-nerved, ſmooth, the end one larger, all petioled. Peduncles villoſe, ſhorter than the leaf. Flowers pedicelled. Calyx bell-ſhaped, with ſix or ſeven ſmall blunt teeth. Tube of the corolla almoſt an inch and half long; ſegments ſix or ſeven, lanceolate, ſharp, three times ſhorter than the tube. Allied to the preceding, but differing in its angular villoſe branches. Native of the Cape of Good Hope.

6. Branches round, as are alſo the upper leaves petioles, peduncles and calyxes cinereous-pubeſcent Leaves on jointed petioles: on the branches ternate the leaflets petioled, quite entire, ſmoothiſh except the midrib on both ſides, flat, nerved and ſlightly veined, the middle one two inches long, ovate, the lateral ones ſcarcely half an inch, oblong, on ſhorter petioles; on the flowering branchlets an inch long, oblong, pubeſcent. Panicle terminating, two inches long: peduncles trichotomous, faſtigiate; ſometimes ſolitary, oppoſite from the laſt axils, twice trifid. Bracte linear at the baſe of the peduncles, patulous at the tip. Calyxes five-cleft, obovate, abbreviated, plaited in five corners; ſegments blunt. Corolla an inch long, ſmooth, border only half the length of the tube; ſegments ſix, linear, blunt. Cultivated in Malabar, in the gardens of the idolaters. *Koenig.*

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[a] Hort. kew.
[b] Linn. ſuppl.
[c] Hort. kew.
[d] Thunb. prodr. cap.
[e] Hort. kew. & Mill. dict. ed. 1. n. 9.

7. Branches round, ſmooth, as is the whole plant. Leaves on flexuoſe, perhaps cirrhoſe petioles: leaflets petioled, ovate-oblong, acuminate, obſcurely and ſimply veined, ſhining on both ſides, quite entire, paler underneath, the middle one two inches long, the ſide ones about half the ſize. Racemes oppoſite, ſpreading very much, three times as long as the leaf. Partial peduncles oppoſite, ſpreading very much, one-flowered or three-flowered. Flowers pedicelled. Bracte linear on each ſide at the baſe of the peduncles and pedicels. Calyx bell-ſhaped, with five or ſix ovate, acute, minute teeth. Corolla an inch and half long; ſegments about ſeven, almoſt the length of the tube. Native of the Eaſt Indies.

8. This is a ſhrub, and ſeems to be climbing. Branches round, ſmooth. Leaflets petioled, two inches long, the ſide ones ſmaller, very ſmooth, obſcurely veined, attenuated. Petioles bent, channelled above, half an inch long. Peduncles ſolitary, oppoſite, ſmooth, the length of the general petiole, angular. Pedicels oppoſite, ſhort, undivided. Calyx bell-ſhaped, obſcurely five-toothed, ſmooth, with minute toothlets[f]. Native of the Society Iſles in the South Seas.

9. Native of the Friendly iſles, in the South Seas[g].]

10. Common Yellow Jaſmine has weak angular branches which require ſupport, and will riſe to the height of eight or ten feet, if planted againſt a wall or pale.

[The calyx is deeply five-cleft[h]. Berry ſuperior, oblong-ſphæroidal, very ſmooth, dark purple: ſkin very thin, diaphanous, pale, when ripe ſeparating ſpontaneouſly from the fleſh, which is ſucculent, coloured, and adheres ſo cloſely to the ſeeds, as to appertain rather to them than to the pericarp. Seeds regularly two, but one only uſually arriving at maturity, elliptic, flatted like a lens, faſtened to the bottom of the berry[i]. Native of the South of Europe and the Levant. Cultivated in 1597 by Gerarde[k].

Beſides the common name of Yellow Jaſmine, Parkinſon has thoſe of Shrubby Trefoil and Make-bate, which are now obſolete.]

11. Italian Yellow Jaſmine is ſo called becauſe the plants were annually brought from Italy by thoſe who came over with Orange trees. The flowers are generally larger than thoſe of the preceding, but have very little ſcent, and are ſeldom produced ſo early in the ſeaſon. [Simple leaves are frequently intermixt with the ternate. The calyx is ſcarcely five-cleft[l].

Its native country is not known. It was cultivated here in 1730, and flowers from July to ſeptember[m].]

12. Yellow Indian Jaſmine riſes with an upright woody ſtalk eight or ten feet high, covered with a brown bark, ſending out ſeveral branches, which want no ſupport. Leaflets of a lucid green, ovate and entire, continuing green all the year, the two ſide ones much leſs than the end one. The flowers are produced at the ends of the ſhoots in bunches; the corolla has a longer ſlender tube, and the ſegments are blunt and ſpreading; the whole is of a bright yellow colour, and has a moſt grateful odour. The flowers come out from July to october and november; and are frequently ſucceeded by oblong oval berries, which turn black when ripe, and have each two ſeeds. [Native of the iſland of Madeira. Cultivated in 1730[n].

13. Stem ſhrubby, weak, climbing, round, ſmooth, branching. Leaflets uſually ſeven, broad lanceolate, quite entire, ſmooth, dark green, the end one larger and more pointed than the reſt. Peduncles few-flowered. Calycine ſegments capillary. Corolla white, odorous; tube long, cylindrical; border flat, ſhort, rounded. Anthers ſubſeſſile in the middle of the tube. Stigma above the tube, long, flattiſh, emarginate. Berry ſuperior, dicoccous. The border of the corolla is ſometimes only four-cleft[o].

We are not certain as to the native country of our common white Jaſmine. Linneus ſays India and Switzerland; but to the latter it is confeſſedly exotic, although it be now accuſtomed to the climate, and grows ſpontaneouſly on the rocks, particularly about Chiavenna[p]. Probably it is wild in the Eaſt Indies.] Mr. Miller affirms, that it grows naturally in Malabar and ſeveral parts of India, yet has been long enured to our climate, ſo as to thrive and flower extremely well; but it never produces any fruit in England. Loureiro ſays, that it is wild about Canton in China. According to Parkinſon, it was thought to have been firſt brought to Spain out of Syria or thereabouts, and from Spain to us.—Gerarde, cultivated this ſhrub, no leſs eſteemed for elegance than fragrance, in 1597[q]. He ſays it was then common in moſt parts of England, being uſed for arbors, and to cover banquetting houſes in gardens; and that maſter Lyte would have it to grow wild among us, which however it did not, as far as he could underſtand.

The name of Jaſmine, has been corrupted into Jeſſamine, Gelſemine, Geſſemine, Jeſſima, Jeſſamy, and Geſſe.—In German it is Jaſmin, Jeſmin, Schaſmin, Schelſemine, Violreben. In Dutch, Jaſmyn. In Swediſh, Daniſh and French, Jaſmin. In Italian, Gelſomino. In Spaniſh, Jazmin. In Portugueze, Jaſmim, Geſmim, Jaſmineiro. In Arabic, Jaſmin, Kajan.]

14. Spaniſh or Catalonian Jaſmine has much ſtronger branches than the Common White ſort, of which Linneus once ſuppoſed this to be only a variety. The leaflets are placed cloſer, and are of a lighter green, the ſide ones are obtuſe, but the odd one ends in an acute point. The flowers are axillary, on peduncles two inches long, each ſuſtaining three or four flowers, of a bluſh red on their outſide, but white within: the tube of the corolla is longer, the ſegments are obtuſe, twiſted at the mouth of the tube, and of a much thicker texture.

[Linneus remarks, that it reſembles the common ſort very much; but he gives the following diſtinctions: that the ſtem is ſtraight not ſcandent, the leaflets nearer to the ſtem more ovate, not ſmaller, the three outer ones confluent by the widened petiole, ſo that they cannot fall ſeparate.

It is a native of the Eaſt Indies; and Mr. Miller adds, of the iſland of Tobago, where the woods are full of it, and whence Mr. Robert Millar ſent him a great quantity. It appears from Parkinſon that it was cultivated here in 1629, when he ſays it was ſcarce made well acquainted with our Engliſh air. It came to us from Spain, and thence acquired the name of Spaniſh or Catalonian Jaſmine.

15. Stem ſhrubby, long, climbing, round, even, branched. Leaves unequally pinnate: leaflets an inch and half long, acuminate, quite entire, ſhining. Flowers pure white, but without ſmell, terminating, on many-flowered peduncles. Segments of the corolla oblong, blunt, uſually ſeven, but frequently five, ſix, or eight. Calycine ſegments as many, awl-ſhaped, erect. Berries two, ovate, with one arilled ſeed. It is allied to Nyctanthes glauca, (n. 2.) but has a habit approaching more to Jaſmine.—Native of Cochinchina, in hedges[r].

16. Branches obſcurely quadrangular, very ſmooth. Leaves two inches long, drawn into a very long point, extremely ſmooth, nerves vaniſhing above, almoſt

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[f] Vahl.
[g] Forſter.
[h] Medicus.
[i] Gærtner.
[k] Hort. kew.
[l] Willich & Medicus.
[m] Hort. kew.

[n] Hort. kew.
[o] Loureiro, Haller.
[p] Haller.
[q] Hort. kew.
[r] Loureiro.

veinleſs and paler underneath. Petioles ſcarcely a quarter of an inch in length. Peduncles ſolitary, oppoſite, a little longer than the petiole, ſmooth, with two oppoſite, awl-ſhaped bractes in the middle. Calyx ſmooth, ſegments awl-ſhaped, ſhorter by half than the tube of the corolla. Corolla an inch long, ſmooth, with lanceolate ſegments.—Native of Java.

17. Shrubby, ſmooth. Branches round, climbing. Branchlets from each axil, ſolitary, oppoſite, quite ſimple, floriferous at top, the length of the leaves, ſpreading very much. Leaves petioled, extremely ſpreading, quite entire, flat, even, with the veins quite ſimple, two inches long and more. The leaves on the branchlets half an inch long, cordate-ovate. Panicle ſhort. Peduncles ſhort. Pedicels very ſhort. Bractes oppoſite at the baſe of the peduncles and calyx, linear, the length of the peduncles. Border of the calyx flat; ſegments ſix or ſeven, reflex, villoſe. Border of the corolla ſix or ſeven-cleft; clefts lanceolate, the length of the tube, which widens gradually[s].

Native of Bengal, climbing to the tops of trees, according to Koenig, who communicated it[t].]

PROPAGATION AND CULTURE.

1. The plants of Arabian Jaſmine are frequently imported from Italy by the Italian gardeners, who bring Orange trees for ſale; but theſe are always grafted upon ſtocks of the common Jaſmine, and not keeping pace in their growth with the ſtock, become very unſightly; beſides the ſtocks are very apt to ſhoot from the bottom, and if theſe ſhoots be not conſtantly rubbed off, they will ſtarve the graft. The beſt method therefore to obtain plants is by layers or cuttings. The former is the ſureſt method, for unleſs the cuttings be very carefully managed, they will not take root; and the ſtems being pliable may eaſily be brought down, and laid in pots filled with a ſoft loamy ſoil, plunged into a hot-bed of tan: if the branches be laid down in the ſpring, and carefully watered, they will put out roots by autumn, when they ſhould be cut from the old plants, and each tranſplanted into a ſeparate ſmall pot, and then plunged into the tan-bed, where they ſhould be ſhaded from the ſun till they have taken new root.

Cuttings may be planted from may to auguſt, in pots filled with the ſame earth, and plunged into a moderate hot-bed of tanner's bark. The pots ſhould be pretty large, to contain ten or twelve cuttings; they ſhould be cloſely covered with bell or hand-glaſſes to exclude the air, ſhaded from the ſun in the heat of the day, and gently refreſhed with water when the earth is dry: they will have taken root by auguſt, when they may be tranſplanted into ſeparate pots, and treated in the ſame way as the layers.

This plant may be preſerved in a moderate degree of warmth, but will thrive much better in the bark-ſtove, and produce a greater quantity of flowers; as the leaves continue all the year, it will make a fine appearance in the ſtove at all ſeaſons; and it will produce flowers great part of the year.

4. Azorian Jaſmine is pretty hardy, and requires only to be ſheltered from ſevere froſt. It is a greenhouſe plant, but will live againſt a warm wall, if dung be laid to the roots, and a mat hung looſely over it in froſty weather. It is propagated in the ſame manner with n. 12. and requires the ſame management. It deſerves a place in every greenhouſe, for the leaves, being of a ſhining green, make a good appearance all the year; and the flowers, having a fine ſcent, and continuing long in ſucceſſion, render it very valuable.

10. Common Yellow Jaſmine was formerly more cultivated than now; for the flowers having no ſcent, few perſons regard them. It often produces ſo many ſuckers as to become troubleſome; and as it cannot be kept in order for ſtandards, it is ſeldom introduced into gardens at preſent. It is eaſily propagated by ſuckers or layers.

11. Italian or dwarf Yellow Jaſmine was brought over by the Italian gardeners with Orange trees. Theſe were grafted upon the common Yellow Jaſmine ſtocks. This is ſomewhat more tender than the preceding, but it will endure the cold of our ordinary winters, in a warm ſituation.

It may be propagated by laying down the tender branches; or by budding or inarching it upon the common Yellow ſort: the latter mode is preferable, as making hardier plants. It ſhould be planted againſt a warm wall, and in very ſevere winters will require to be ſheltered with mats. It muſt be dreſſed and pruned as the White Jaſmine, n. 13.

12. Yellow Indian Jaſmine is propagated either by ſeeds, or laying down the tender branches; if by ſeeds, which it ſometimes produces in England, make a moderate hot-bed in the ſpring, into which plunge ſome ſmall pots, filled with freſh light earth; and in a day or two after, when you find the earth in the pots warm, put your ſeeds therein; about four in each pot will be ſufficient, covering them about an inch thick with the ſame light earth, and obſerve to refreſh the pots with water as often as you ſhall perceive the earth dry; but do not give them too much at each time, which would be apt to rot the ſeeds.

In about ſix or eight weeks after ſowing, the plants will appear above ground, at which time it will be neceſſary to remove the pots into another freſh hot-bed, of a moderate temperature, in order to bring the plants forward; water them as often as is neceſſary, and in the great heat of the day the glaſſes ſhould be tilted pretty high, and ſhaded with mats, to prevent the plants from being ſcorched with heat. About the middle of may begin to harden them to the open air, by taking off the glaſſes when the weather is warm; but this muſt be done cautiouſly, for you ſhould not expoſe them to the open ſun in a very hot day at firſt, which would greatly injure them; but rather take off the glaſſes in warm cloudy weather at firſt, or in gentle ſhowers of rain, and ſo by degrees inure them to bear the ſun; and in june take the pots out of the hot-bed, and carry them to ſome well ſheltered ſituation, where they may remain until the beginning of october; at which time they muſt be carried into the green-houſe, obſerving to place them where they may enjoy as much free air as poſſible when the windows are opened, as alſo to be clear from the branches of other plants.

During the winter ſeaſon they will require to be often watered, but be careful not to give them too much at each time; and in march remove theſe plants each into a ſeparate pot, being careful not to take the earth from their roots; and if at this time you plunge them into a freſh moderate hot-bed, it will greatly facilitate their rooting again, and be of great ſervice to the plants; but when they are rooted, you muſt give them a great deal of air; for if you draw them too much, they will become weak in their ſtems, and incapable to ſupport their heads, which is a great defect in theſe trees.

You muſt alſo harden them to the open air, into which they ſhould be removed about the middle of may, obſerving, as was before directed, to place them in a ſituation that is defended from ſtrong winds, which are injurious to theſe plants, eſpecially while they are young. In winter houſe them as before, and continue the ſame care, with which they will thrive very faſt, and produce annually great quantities of flowers.

Theſe plants are pretty hardy, and will require no other care in winter, than only to defend them from hard froſts; nor do I know whether they would not live in the open air, if planted againſt a warm wall, ſince they are much hardier than the Spaniſh; but there is this difference between them, viz. theſe plants have large, thick, evergreen leaves, ſo that if they were covered with mats, as is directed for the Spaniſh Jaſmine, the leaves would rot and decay the ſhoots; but as theſe will only require to be covered in extreme froſt, if their roots are well mulched, and a mat or two looſely hung over them in ordinary froſts, it will be ſufficient; and theſe mats being either rolled up, or taken quite off in the day, there will be no great danger of their being hurt, which only can proceed from being too long cloſe covered.

In the ſpring theſe ſhould be pruned, when you ſhould cut of all decayed branches; but you muſt not ſhorten any of the other branches, as is directed for the Spaniſh ſort, for the flowers of this kind are produced only at the extremity of the branches, which, if ſhortened, they would be cut off; and theſe growing of a more ligneous ſubſtance than the other, will not produce ſhoots ſtrong enough to flower the ſame year. If you would propagate this plant from layers, the ſhoots would be laid down in march; and if you give them a little cut at the joint, as is practiſed in laying Carnations, it will promote their rooting: obſerve to refreſh often with water, when the weather is dry; which, if carefully attended to, the plants will be rooted by the ſucceeding ſpring, fit to be tranſplanted, when they muſt be planted in pots filled with light earth, and managed as was before directed for the ſeedling plants.

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[s] Vahl.

[t] Retz.

This ſort is frequently propagated, by inarching the young ſhoots into ſtocks of the common yellow Jaſmine, but the plants ſo raiſed do not grow ſo ſtrong as thoſe which are upon their own ſtock; beſides, the common yellow Jaſmine is very apt to ſend out a great number of ſuckers from the root, which renders the plants unſightly; and if theſe ſuckers are not conſtantly taken off as they are produced, they will rob the plants of their nouriſhment.

13. Common white Jaſmine is eaſily propagated by laying down the branches, which will take root in one year, and may then be cut from the old plant, and planted where they are deſigned to remain: it may alſo be propagated by cuttings, which ſhould be planted early in the autumn, and if the winter ſhould prove ſevere, the ſurface of the ground between them ſhould be covered with tan, ſea-coal aſhes, or ſaw-duſt, which will prevent the froſt from penetrating deep into the ground, and thereby preſerve the cuttings; or where theſe are wanting, ſome Peas-haulm, or other light covering ſhould be laid over the cuttings in hard froſt; but theſe muſt be removed when the weather is mild, for they will keep off the air and occaſion damps, which often deſtroy them.

When theſe plants are removed, they ſhould be planted where they are deſigned to be continued, which ſhould be either againſt ſome wall, pale, or other fence, where the flexible branches may be ſupported; for although it is ſometimes planted as a ſtandard, and formed into a head, yet it will be very difficult to keep it in any handſome order; or if you do, you muſt cut off all the flowering branches; for the flowers are always produced at the extremity of the ſame year's ſhoots, which, if ſhortened before the flowers are blown, will entirely deprive the trees of flowers. Theſe plants ſhould be permitted to grow rude in the ſummer, for the reaſon before given; nor ſhould you prune and nail them until the middle or latter end of march, when the froſty weather is paſt; for if it ſhould prove ſharp froſty weather after their rude branches are pruned off, and the ſtrong ones are expoſed thereto, they are very often deſtroyed; and this plant being very backward in ſhooting, there will be no danger of hurting by late pruning.

There are two varieties of this with variegated leaves, one with white, and the other with yellow ſtripes, but the latter is the moſt common: theſe are propagated by budding them on the plain Jaſmine, and it often happens, that the buds do not take, but yet they have communicated their gilded miaſma to the plants; ſo that in a ſhort time after, many of the branches both above and below the places where the buds have been inſerted have been thoroughly tinctured; and the following year I have often found very diſtant branches, which had no other communication with thoſe which were budded than by the root, have been as compleatly tinged as any of the nearer branches, ſo that the juices muſt have deſcended into the root.

The two ſtriped ſorts ſhould be planted in a warm ſituation, eſpecially the white ſtriped; for they are much more tender than the plain, and are very ſubject to be deſtroyed by great froſts, if they are expoſed thereto; therefore the white ſtriped ſhould be planted to a ſouth or ſouth-weſt aſpect, and in very ſevere winters the branches ſhould be covered with mats or ſtraw, to prevent their being killed: the yellow ſtriped is not ſo tender, ſo may be planted againſt walls to eaſt or weſt aſpects; but theſe plants with variegated leaves, are not ſo much in eſteem as formerly.

14. This plant is propagated by budding or inarching it upon the common white Jaſmine, on which it takes very well, and is rendered hardier than thoſe which are upon their own ſtocks. But the plants of this kind being brought over from Italy every ſpring in ſo great plenty, they are ſeldom raiſed here: I ſhall therefore proceed to the management of ſuch plants as are uſually brought into England from the place above-mentioned, which are generally tied up in ſmall bunches, containing four plants, and their roots wrapped about with moſs, to preſerve them from drying; which, if it happen that the ſhip has a long paſſage, will often occaſion them to puſh out ſtrong ſhoots from their roots, which muſt always be taken off before they are planted, otherwiſe they will exhauſt the whole nouriſhment of the plant, and deſtroy the graft.

In the making choice of theſe plants, you ſhould carefully obſerve if their grafts are alive, and in good health: for if they are brown and ſhrunk, they will not puſh out, ſo that there will be only the ſtock left, which is of the common ſort.

When you receive theſe plants, you muſt clear the roots of the moſs, and all decayed branches ſhould be taken off; then place their roots into a pot or tub of water, which ſhould be ſet in the green-houſe, or ſome other room, where it may be ſcreened from the cold; in this ſituation they may continue two days, after which you muſt prune off all the dry roots, and cut down the branches within four inches of the place where they were grafted, and plant them into pots filled with freſh light earth; then plunge the pots into a moderate hot-bed of tanners bark, obſerving to water and ſhade them, as the heat of the ſeaſon may require. In about a month or ſix weeks after they will begin to ſhoot, when you muſt carefully rub off all ſuch as are produced from the ſtock below the graft; and you muſt now let them have a great ſhare of air, by raiſing the glaſſes in the heat of the day; and as the ſhoots extend, they ſhould be topped, to ſtrengthen them, and by degrees ſhould be hardened to endure the open air, into which they ſhould be removed the beginning of june, but muſt have a warm ſituation the firſt ſummer; for if they are too much expoſed to the winds, they will make but indifferent progreſs, being rendered ſomewhat tender by the hot-bed. If the ſummer proves warm, and the trees have ſucceeded well, they will produce ſome flowers in the autumn following, though they will be few in number, and not near ſo ſtrong as they will be the ſucceeding years, when the trees are ſtronger and have better roots.

Theſe plants are commonly preſerved in green-houſes, with Oranges, Myrtles, &c. and during the winter ſeaſon, will require to be frequently watered; which ſhould be performed ſparingly each time, eſpecially in cold weather, for too much wet at that ſeaſon will be apt to rot the fibres of their roots; they ſhould alſo have a great ſhare of freſh air when the weather will permit, for which purpoſe they ſhould be placed in the cooleſt part of the green-houſe, among plants that are hardy, where the windows may be opened every day, except in froſty weather; nor ſhould they be crowded too cloſe among other plants, which often occaſions the tender part of their ſhoots to grow mouldy and decay. In april the ſhoots of theſe plants ſhould be ſhortened down to four eyes, and all the weak branches ſhould be cut off; and if you have the conveniency of a glaſs-ſtove, or a deep frame, to place the pots in at that ſeaſon, to draw them out again, it will be of great ſervice in forwarding their flowering; yet ſtill you ſhould be careful not to force them too much; and as ſoon as they have made ſhoots three or four inches long, the glaſſes ſhould be opened in the day time, that the plants may, by degrees, be inured to the open air, into which they ſhould be removed by the latter end of may, or the beginning of june; otherwiſe their flowers will not be ſo fair, nor continue ſo long. If the autumn prove favourable, theſe plants will continue to produce freſh flowers until november; and ſometimes when they are ſtrong they will continue flowering later; but then they muſt have a great ſhare of air when the weather is mild and will admit of it, otherwiſe the flower-buds will grow mouldy and decay. But notwithſtanding moſt people preſerve theſe plants in green-houſes, yet they will endure the cold of our ordinary winters in the open air, if planted againſt a warm wall, and covered with mats in froſty weather; they will alſo produce ten times as many flowers in one ſeaſon as thoſe kept in pots, and the flowers will likewiſe be much larger; but they ſhould not be planted abroad till they have acquired ſtrength, ſo that it will be neceſſary to keep them in pots three or four years, whereby they may be ſheltered from the froſt in winter; and when they are planted againſt the wall, which ſhould be in may, that they may take good root in the ground before the ſucceeding winter, you muſt turn them out of the pots, preſerving the earth to their roots; and having made holes in the border where they are to be planted, you ſhould place them therein, with their ſtems cloſe to the wall; then fill up the holes round their roots with good, freſh, rich earth, and give them ſome water to ſettle the ground about them, and nail up their ſhoots to the wall, ſhortening ſuch of them as are very long, that they may puſh out new ſhoots below to furniſh the wall, continuing to nail up all the ſhoots as they are produced. In the middle, or toward the latter end of july, they will begin to flower, and continue to produce new flowers until the froſt prevents them; which, when you obſerve, you ſhould carefully cut off all the tops of ſuch ſhoots as have buds formed upon them, as alſo thoſe which have the remains of faded flowers left: for if theſe are ſuffered to remain on, they will ſoon grow mouldy, eſpecially when the trees are covered, and thereby infect many of the tender branches, which will greatly injure the trees.

Toward the middle of november, if the weather proves cold and the nights froſty, you muſt begin to cover your trees with mats, which ſhould be nailed over them pretty cloſe; but this ſhould be done when the trees are perfectly dry, otherwiſe the wet being lodged upon the branches, will often cauſe a mouldineſs upon them, and the air being excluded therefrom, will rot them in a ſhort time: it will alſo be very neceſſary to take off the mats as ſoon as the weather will permit, to prevent this mouldineſs, and only keep them cloſe covered in froſty weather, and in the nights; at which time you ſhould alſo lay ſome mulch upon the ſurface of the ground about their roots, and faſten ſome bands of hay about their ſtems, to guard them from the froſt: and in very ſevere weather, you ſhould add a double or treble covering of mats over the trees; by which method, carefully performed, you may preſerve them through the hardeſt winters. In the ſpring, as the weather is warmer, you ſhould by degrees take off the covering; but you ſhould be careful not to expoſe them too ſoon to the open air, as alſo to guard them againſt the morning froſts and dry eaſterly winds, which often reign in march, to the no ſmall deſtruction of tender plants if they are expoſed thereto; nor ſhould you quite remove your covering until the middle of april, when the ſeaſon is ſettled; at which time you ſhould prune the trees, cutting out all decayed and weak branches, ſhortening the ſtrong ones to about two feet long, which will cauſe them to ſhoot ſtrong, and produce many flowers.

There is a variety of this with ſemi-double flowers, which is at preſent more rare in England, and only to be found in ſome curious gardens; though in Italy it is pretty common, from whence it is ſometimes brought over amongſt the ſingle; the flowers of this kind have only two rows of leaves, ſo that it is rather cultivated for its curioſity, than for any extraordinary beauty in the flowers. This may be propagated by budding it upon the common white Jaſmine, as has been directed for the ſingle, and muſt be treated in the ſame manner.

[Jasminum. See *Ceſtrum*, *Chiococca*, *Citharexylum*, *Ehretia*, *Guaiacum*, *Ipomæa*, *Juſſieua*, *Ixora*, *Lantana*, *Nyctanthes*, *Pſychotria*, *Volkameria*.]

Jasminum arabicum. See *Coffea*.

[——— capenſe. See *Gardenia florida*.

——— indicum. See *Plumeria rubra*.]

JATRŎPHA. (*From* ιατρον, *a medicine, or rather poiſon; and* φαγω *to eat.* Linn.)

Lin. gen. n. 1084. *Reich.* 1183. *Schreb.* 1463. *Juſt.* 389. *Gærtn. t.* 108. Manihot. *Tournef.* 438. *Dill. elth.* 173. Juſſieuia. *Houſt. reliqu.* 15.

Claſſ. 21. 9. Monoecia Monadelphia.

Nat. order of *Tricoccæ*. *Euphorbiæ*, Juſſ.

GENERIC CHARACTER.

* *Male Flowers.*

Cal. *Perianth* ſcarcely manifeſt.

Cor. one petalled, funnel-form. *Tube* very ſhort. *Border* five-parted: *diviſions* roundiſh, ſpreading, convex, concave beneath.

Stam. *Filaments* ten, awl-ſhaped, approximated in the middle; the five alternate ones ſhorter, upright, ſhorter than the corolla. *Anthers* roundiſh, verſatile.

Pist. A weak rudiment, latent in the bottom of the flower.

* *Female Flowers* in the ſame umbel with the males.

Cal. none.

Cor. five-petalled, roſaceous.

Pist. *Germ* roundiſh, three-furrowed. *Styles* three, bifid. *Stigmas* ſimple.

Per. *Capſule* roundiſh, tricoccous, three-celled, cells bivalve.

Seeds ſolitary, roundiſh.

Obs. J. urens *has nine upright ſtamens, of which the three interior are longer than the reſt, to which there are as many briſtles correſpond, each placed on each of thoſe filaments near the baſe.*

Some ſpecies in the male flowers have a five-cleft calyx and a five-petalled corolla.

At preſent ten ſtamens are aſcribed to J. urens. Syſt. Veget. 723. R.

ESSENTIAL CHARACTER.

Male. *Cal.* none. *Cor.* one-petalled, funnel-form. *Stam.* ten, alternately longer and ſhorter.

Fem. *Cal.* none. *Cor.* five-petalled, ſpreading. *Styles* three, bifid. *Capſ.* three-celled. *Seed* one.

SPECIES.

1. Jatropha goſſypifolia. *Cotton-leaved Phyſic-nut* or *wild Caſſava.*

Lin. ſpec. 1428. *Reich.* 4. 190. *Swartz obſ.* 366. *Brown. jam.* 348. 2. *Vahl. ſymb.* 1. 78.

J. ſtaphiſagrifolia. *Mill. dict. n.* 9.

Ricinus minor, ſtaphiſagriæ folio, flore pentapetalo purpureo. *Sloan. jam.* 1. 129. *t.* 84.

R. americanus perennis, flor. purp. ſtaphiſ. fol. *Comm. hort.* 1. 17. *t.* 9. *Merian. ſurin. t.* 38.

R. indicus piloſus trifidus ſ. quinquefidus, floſculis atropurpureis. *Pluk. phyt. t.* 56. *f.* 2.

R. amer. fol. ſtaph. *Baub. pin.* 432. 518.

Ricinoides amer. ſtaph. fol. *Tournef. inſt.* 656.

Leaves five-parted, lobes ovate entire ciliate, briſtles glandular branched, on the petioles.

[2. Jatropha glauca. *Glaucous-leaved Phyſic-nut.*

Vahl ſymb. 1. 78.

Ricinus maderaſpatanus, fl. purpureo, trilobato folio mollibus ſpinulis dentato. *Pluk. phyt. t.* 220. *f.* 4.

Croton lobatum. *Forſk. deſcr.* 162.

Calycled, leaves five-cleft and three-cleft ſerrate-toothed, petioles naked, ſtipules palmate.

3. Jatropha ſpinoſa. *Prickly-ſtalked Phyſic-nut.*

Vahl. ſymb. 1. 79.

Croton ſpinoſum. *Forſk. deſcr.* 163.

Calycled, leaves three-parted, lobes angular upwards and quite entire, ſtem ſhrubby prickly.

4. Jatropha variegata. *Variegated Phyſic-nut.*

Vahl. ſymb. 1. 79. *t.* 21.

Croton variegatum. *Forſk. deſcr.* 163.

Calycled, leaves lanceolate quite entire.

5. Jatropha glanduloſa. *Glandular Phyſic-nut.*

Vahl. ſymb. 1. 80.

Croton villoſum. *Forſk. deſcr.* 163.

Calycled, leaves five-lobed villoſe, lobes toothletted glandular, ſtem ſhrubby without ſtipules.

6. Jatropha moluccana.
Lin. ſpec. 1428. *Reich.* 4. 191. *Fl. zeyl. n.* 348. *Burm. ind.* 306. *Herm. zeyl.* 34. *Burm. zeyl.* 170. (Nux moluccana).
Leaves ovate quite entire ſomewhat toothed.

7. Jatropha divaricata.
Swartz prodr. 98.
Leaves ovate acuminate entire very ſmooth, racemes divaricating.]

8. Jatropha Curcas. *Angular-leaved Phyſic-nut.*
Lin. ſpec. 1429. *ſyſt.* 865. *Reich.* 4. 191. *hort. cliff.* 445. 3. *mat.-med.* 208. *Swartz obſ.* 367. *Gærtn. fruct.* 2. 121. *Jacqu. hort.* 3. 36. *t.* 63. *Burm. ind.* 306. *Brown. jam.* 348. 1.
R. amer. *Ger.* 399. 2. *emac.* 496. 2. *Park. theat.* 182 & 183. *f.* 4.—major ſemine nigro. *Bauh. pin.* 432. *Mor. hiſt. ſ.* 10. *t.* 3. *f.* 15.
R. ficus folio, fl. pentapetalo viridi, fructu lævi pendulo. *Sloan. jam.* 1. 127.
Mundubiguacu. *Marcgr. braſ.* 97.
Leaves cordate angular.

9. Jatropha multifida. *French Phyſic-nut.*
Lin. ſpec. 1429. *Reich.* 4. 192. *hort. cliff.* 445. 1. *Brown. jam.* 348. 3. *Swartz obſ.* 368.
Ricinus americanus tenuiter diviſo folio. *Breyn. cent.* 116. *t.* 53. *Sloan. jam.* 40. *Raii hiſt.* 167. *Mor. hiſt.* 3. 348. *ſ.* 10. *t.* 3. *f. ult.*
Avellana purgatrix. *Bauh. pin.* 418.
Manihot fol. tenuiter diviſo. *Dill. elth.* 217. *t.* 173. *f.* 213.
Leaves many-parted even, ſtipules briſtle-ſhaped multifid.

10. Jatropha Manihot. *Eatable-rooted Phyſic-nut* or *Caſſava.*
Lin. ſpec. 1429. *ſyſt.* 865. *Reich.* 4. 192. *Brown. jam.* 349. 4. *Sloan. jam.* 1. 130. *t.* 85. (Ricinus).
Manihot inodorum ſ. Yucca fol. cannabinis. *Bauh. pin.* 90. *Pluk. phyt. t.* 205. *f.* 1.
M. Theveti, Yucca & Caſſavi. *Bauh. hiſt.* 2. 794. *Merian. ſurin. f.* 4, 5.
Hiucca ſ. Mandioca ex qua Cazavi fit. *Park. theat.* 1624.
Arbor ſucco venenato, radice eſculenta. *Bauh. pin.* 512. *Tournef. inſt.* 658.
Leaves palmate, lobes lanceolate quite entire even.

[11. Jatropha Janipha.
Lin. ſyſt. 865. *Reich.* 4. 193. *mant.* 126. *Jacqu. amer.* 256. *t.* 162. *f.* 1. *Lour. cochinch.* 585.
J. carthagenenſis. *Jacqu. hort.* 3. *t.* 77. *amer. pict.* 125. *t.* 244.
Janipha fruteſcens. *Loefl. itin.* 309.
Leaves palmate, lobes quite entire, the middle ones on both ſides lobed with a ſinus.]

12. Jatropha urens. *Stinging Phyſic-nut.*
Lin. ſpec. 1429. *ſyſt.* 865. *Reich.* 4. 193. *hort. cliff.* 445. 2. *upſ.* 290. *Gron. virg.* 154. *Jacqu. hort. t.* 21.
J. vitifolia. *Mill. dict. n.* 5.
Ricinus tithymaloides, &c. *Comm. hort.* 1. 19. *t.* 10.
R. lacteſcens, &c. *Pluk. phyt. t.* 220. *f.* 3.
Leaves palmate toothed prickly.

13. Jatropha herbacea.
Lin. ſpec. 1430. *Reich.* 4. 193.
Juſſieuia herbacea. *Houſt. reliqu.* 6. *t.* 15. *Amm. herb.* 256.
Prickly, leaves three-lobed, ſtem herbaceous.

[14. Jatropha elaſtica. *Elaſtic Gum-tree.*
Lin. ſyſt. 865. *ſuppl.* 422.
Hevea peruviana. *Aubl. guian.* 871. *t.* 335.
Pao Seringa. *Act. par.* 1751. *t.* 20.
Leaves ternate elliptic quite entire, hoary underneath, on long petioles.

DESCRIPTIONS, &c.

1. Stem from two to three feet high, herbaceous, branched, ſmooth. Branches ſubdivided, round, beſet at the baſe with branched glanduliferous cilias or briſtles. Leaves digitate, veined, tender, often three-lobed; lobes acute, ſerrate, toothed and ciliate, cilias glandular. Common peduncle terminating; partial cymed, bifid; male flowers very copious, females ſolitary, in the forks of the peduncles. In the males, calyx five-leaved; leaflets ovate, acute, ciliate. Corolla deeply five-parted, dark purple; ſegments ovate. At the baſe of the ſtamens are five roundiſh nectareous glands. Filaments ten to twelve, united up to the middle, the length of the corolla: anthers bifid ovate. The females have the calyx and corolla as in the males; but without any nectary. Germ roundiſh, obtuſely three-cornered: ſtyle trifid from the baſe: ſtigmas dilated, bifid. Capſule ovate, three-cornered, retuſe[a].

Native of the Weſt Indian iſlands; very common in moſt parts of Jamaica, where the ſoil is dry and gravelly, and the ſituation warm. It grows moſt luxuriantly about houſes, where the ground is warmed with dung, and riſes in ſuch places, to the height of three feet and a half or more. It is a very beneficial plant in every plantation where they raiſe any quantity of poultry, which are very fond of the ſeeds. A decoction of the leaves is ſometimes uſed as a purgative in the dry belly-ach[b]. Hence it is called Belly-ach weed. Browne names it Wild Caſava or Caſadar. It was cultivated by Mr. Miller before 1759.

2. Stem herbaceous, erect, a foot high, pubeſcent. Leaves wedge-ſhaped at the baſe, ſmooth, glaucous, almoſt veinleſs, nerved and villoſe underneath; ſegments oblong, acuminate; teeth ſharp, unequal, ſomewhat glandular at the end. Petioles ſubvilloſe, longer than the leaves, without glandular hairs. Stipules ſolitary on each ſide divided into four or five briſtles; briſtles unequal, glandular at top, ſimple, ſeldom branched. Peduncles towards the top, oppoſite to the leaves, three inches long, the height of the ſtem. Corymbs dichotomous: female flowers in the diviſions, on ſhort pedicels. Bractes lanceolate-awl-ſhaped. Calyx permanent, five-leaved: leaflets lanceolate, ciliate. Petals of the female flower the length of the calyx, ovate. Filaments alternately ſhorter: anthers eight. Germ three-ſided: ſtyle one: ſtigmas three. Capſule almoſt the ſize of a hazel nut, muricated. Seed the ſize of a pea, in ſhape like that of Ricinus.

It is diſtinguiſhed from the preceding at firſt ſight by its glaucous hue: but beſides this, it differs in having the leaves produced at the baſe but not tranſverſe; the lobes oblong, ſharply ſerrate, not ovate and ciliate-glandular, as in that; and the petioles naked, without branched glandular hairs.—Native of Arabia and the Eaſt Indies.

3. Branches round, ſmooth, with a purple wrinkled bark, glaucous at top. Leaves alternate, very ſmooth, half an inch long; lobes oblong, very blunt, widened at top; the ſide ones ſmaller, narrower, having ſometimes a ſmall lobe on the outer ſide of the baſe. Petiole a little ſhorter than the leaf, round. Prickles on each ſide ſolitary at the baſe of the petiole inſtead of ſtipules, of the ſame colour with the bark, awl-ſhaped, ſhorter than the petiole. Corymbs dichotomous. The female flower ſeſſile in the diviſions. Calyx five-leaved. Corolla five-petalled.

4. This is a ſhrub with round branches, the bark at bottom brown and chinky, glaucous above. Leaves ſubpetioled, alternate, blunt, ending in a ſtiff dagger-point, very ſmooth, ſometimes variegated on the upper ſurface, two inches long. Stipules in pairs on each ſide by the ſide of the petiole, placed on a callus, awl-ſhaped, ſtiff, often longer than the petiole, divaricating, permanent, the lower like prickles. Corymbs axillary, ſhorter than the leaf. Bractes lanceolate, keeled. Calyx five-parted, with oblong ſegments. Corolla five-petalled: petals oblong. Anthers eight. Capſule ſmooth, oblong. It varies with broader and narrower leaves. This is different from Croton variegatum; that having the flowers in ſpikes, and no ſtipules.

5. This is a branching ſhrub, with a wrinkled, villoſe bark. Leaves alternate, kidney-form, ſoft; lobes rounded, unequally toothletted, with brown glands. Petiole the length of the leaf, villoſe, ſpreading. There are ſeveral glands by the ſides of the petiole and in the axils.

Theſe, though they are furniſhed with a calyx, are diſtinct from the genus Croton, the flowers in that being in ſpikes[c].

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[a] Swartz. [b] Browne. [c] Vahl.

6. This is a tree with alternate, ovate or ovate-cordate leaves, with ſome ſcarcely conſpicuous angles, or one or two teeth, acute like thoſe of the Hernandia, but not peltate. Petioles the length of the leaves, with two glands at top where they enter the leaves. Corymb terminating, variouſly dichotomous. Female flowers on ſhorter peduncles in the primary diviſions, with a roundiſh germ, and four awl-ſhaped ſtyles. The males, which are numerous, have a one-leafed, bell-ſhaped, two-parted calyx, with ovate, concave ſegments. Petals five, lanceolate, bluntiſh, patulous, twice as long as the calyx. Filaments numerous, awl-ſhaped, collected into a head, the length of the calyx, the outer ones ſhorter: anthers cordate. It has the ſame appearance with the other ſpecies, but differs in the calyx, the number of petals and piſtils[d]. Now that is better known, it is found that it ought to conſtitute a diſtinct genus[e].

Native of the Molucca iſlands and Ceylon.

7. Native of Jamaica[f].

8. Stem a fathom in height, or according to Browne ſeldom more than ſeven or eight feet, ſuffruteſcent, round, ſmooth and branched. Leaves five-angled, the angles at the baſe rounded, the reſt acute. Flowers in terminating cymes; peduncles alternate, upright, many-flowered; flowers almoſt aggregate, on very ſhort pedicels. Males copious; females ſeſſile, fewer, ſolitary in the middle of the cyme. In the males the calyx is five-leaved, with ovate, convex leaflets. Corolla five-parted to the baſe, pale yellow. Filaments ten to fourteen, connected from the baſe to the middle: anthers oblong, upright. Glands five, at the baſe of the filaments. The females have the calyx and corolla as in the male; the latter green and larger. Germ roundiſh, bluntly three-cornered: ſtyle three-parted above the middle, with bifid tips: ſtigmas blunt[g]. Capſule oblong, obtuſely-three-cornered, large, when ripe wrinkled and rugged on the outſide; the rind thick and coriaceous; the three grains or cells papery, whitiſh, two-valved: receptacle central, columnar, ſlender, thickened at top into a flatted fungous head. Seeds ſolitary, large, ovate-oblong, convex on one ſide, on the other very obſcurely angular, inſomuch that they are almoſt cylindric, produced at the tip into a hollow dagger-point, in which there is a white fungous umbilicus; they are black with minute chinks, and rough to the touch[h].

Native of South America and the iſlands in the Weſt Indies. Browne ſays it is very common in all the ſugar colonies, and cultivated frequently in incloſures, but dies after a few years. The leaves are much uſed in reſolutive baths and fomentations, and the ſeeds ſometimes as a purgative, but they operate very violently, and are therefore now but little uſed. Gærtner ſuggeſts, that it was firſt obſerved by Boyle, that the fruit might be eaten with ſafety, if the embryo were taken out.

It was cultivated in 1731, by Mr. Miller[i].

9. This grows generally to the height of five, ſix, or ſeven feet, with a very ſmooth, ſuffruteſcent ſtem, and ſpreading branches. Stipules briſtle-ſhaped, multifid, at the baſe of the branches and petioles. Leaves alternate, ſubpeltate, multifid; the diviſions pinnate with the odd leaflet longer, ſmooth but whitiſh underneath. Peduncles terminating, very long, round, thick, very ſmooth, ſubdivided. Pedicels coloured, in corymbs. Flowers ſmall, red. Males very numerous. Females ſolitary, ſubſeſſile.—In the former, calyx five-cleft, coloured. Petals five ovate, entire. Nectary five-parted, ſurrounding the ſtamens. Filaments eight, red, united at the baſe: anthers ovate, yellow. In the latter, calyx five-parted, coloured. Corolla five-petalled: petals ovate, red. Germ three-cornered, green: ſtyles three, ſhorter, red, bifid at top: ſtigmas blunt. Capſule, large, oblong, growing yellow as it ripens. Seeds ſolitary, round[k].]

It is now very common in moſt of the iſlands in the Weſt Indies, but was introduced from the continent firſt into the French iſlands, whence it is called in the Britiſh iſlands French Phyſic-nut. [It is much cultivated in Jamaica, and forms no ſmall ornament in their flower-gardens, with its large bunches of beautiful red flowers[l]. The whole plant diſtils a tenacious watery liquor[m]. The ſeeds are purgative, but ſo violent in their operation that they are now rarely adminiſtered, though formerly, they were almoſt the only purgative medicine uſed among the Spaniards[n].

It was cultivated in 1696, in the royal garden at Hampton Court; and flowers from june to auguſt[o].

10. The Caſſava ſhoots from a tough, branched, woody root, whoſe ſlender collateral fibres ſwell into thoſe fleſhy conic maſſes for which the plant is cultivated; and riſes by a ſlender woody knotted ſtalk, to the height of four, five, or ſix feet, ſometimes more[p].] Leaves alternate, ſmooth, on long petioles, ſeven-lobed; lobes narrow at the baſe, growing broader till within an inch and half of the top, where they diminiſh to an acute point; the three middle lobes are about ſix inches long, and two broad where broadeſt; the two next are about an inch ſhorter, and the two outſide lobes are not more than three inches long; the middle lobes are ſinuated on each ſide near the top, but the two outer are entire. The flowers are produced in umbels at the top of the ſtalks, ſome male and others female; petals five, ſpreading: in the male flowers ſtamens ten, united; in the females, germ round with three furrows in the centre: ſtyles three, two diſtant, and one riſing between them ſhorter, all crowned by a ſingle ſtigma. Capſule roundiſh.

[Native of South America. Pere Rochon ſays that it was tranſported into the Iſle of France from Braſil. This plant which formerly ſupplied the greateſt part of the ſuſtenance of the native Indians, is now raiſed in moſt parts of America, and generally conſidered as a very beneficial vegetable, yielding an agreeable wholeſome food; and this, with its eaſy growth and hardy nature, recommends it every where.

It grows to perfection in about eight months, but the roots will remain a conſiderable time in the ground uninjured. They are generally dug up as occaſion requires, and prepared for uſe in the following manner: being firſt well waſhed and ſcraped, then rubbed to a pulpy farina on iron graters; they are put into ſtrong linen or palmetto bags, and placed in a convenient preſs, until the juice is entirely expreſſed: the farina is then taken out and ſpread in the ſun for ſome time, pounded in large wooden mortars, run through coarſe ſieves, and afterwards baked on convenient irons. Theſe are placed over proper fires, and when hot beſtrewed with the ſifted meal to whatever ſize or thickneſs people pleaſe to have the cakes made: this agglutinates as it heats, grows gradually harder, and when thoroughly baked, is a wholeſome well-taſted bread. *Tapioca* is alſo prepared from this root.

The juice of the root is ſweetiſh, but more or leſs of a deleterious nature both freſh and in the putrid ſtate, though it hardly retains any thing of this quality whilſt it ferments[q]. The milky juice ſwallowed, or the root eaten without preparation, brings on convulſions, and occaſions violent retching and purging: it acts only on the nervous ſyſtem, and produces no inflammation in the ſtomach; but the ſtomach of a man or other animal poiſoned by it appears to be contracted one half[r].

However violent the rough juice may be found immediately after it is expreſſed, it is certain that the roots are daily eaten by Hogs without prejudice; and a little mint-water and ſalt of wormwood will calm the moſt violent ſymptoms that ariſe on taking it, and prevent all bad conſequences, even in the human ſpecies, if it be but timely adminiſtered.

What is expreſſed from the farina is frequently preſerved and prepared for many economic uſes: in boiling it throws up a thick viſcid ſcum, which is always thrown away, and the remaining fluid is ſometimes diluted and kept for common drink; and is thought to reſemble whey very much in that ſtate. Some uſe it in ſauces for fiſh and many other ſorts of food; purpoſes for which it was employed by the native Indians, long before any European had landed in thoſe parts of the world.

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[d] Linn. zeyl. [e] Swartz obſ. [f] Swartz prodr. [g] Swartz. [h] Gærtner. [i] Hort. kew. [k] Swartz.

[l] Browne. [m] Swartz. [n] Browne. [o] Hort. kew. [p] Browne. [q] Ibid. [r] Rochon's madag. introd. 23.

The farina, whilſt yet impregnated with the juice, makes an excellent ſalve, which ſeldom fails to clean and heal the moſt deſperate ſores: where theſe are very foul, or the parts too much relaxed, it is ſometimes mixed with a few pounded tobacco leaves; and has been often found effectual, where common ointments have not had the leaſt force: it is alſo uſed by way of poultice, and is an excellent reſolutive [s].

In Madagaſcar Caſſava is the ordinary food of the Blacks, and the French call it Madagaſcar Bread. In the Weſt Indies this plant is called Caſſava, Caſſada or Caſſadar. In Braſil Mandihoca, Manüba, Manduba: whence we have the name Manihot; and in French Manhiot, Magnoc, Manioc, Manioque; in Portugueze Mandioca; in Dutch Maniok; in German Manihot, Maniok. The Caraibes call it Yuka or Juka; which name is adopted in Germany, and by the Spaniards, who call it Yucca de Caſſabe. The Germans and Dutch have alſo adopted the Weſt Indian name, as well as the Engliſh.—At Rio di Janeiro they call the flour or meal of the Caſſava root, Farinha di Pao; which may, not improperly, be tranſlated, Powder of poſt [t].

It was cultivated here in 1739, by Mr. Miller, and flowers in july and auguſt [u].

11. This is an upright ſhrub, quite ſmooth all over, abounding in an aqueous juice, that is ſomewhat clammy, and has the ſmell of walnut leaves. In cloſe woods it frequently riſes with a weak, unbranched, rod-like ſtem to the height of twenty feet, and it retains this habit in the European ſtoves: among other ſhrubs in open places it is commonly no more than ſix feet high, and approaches very near to the figure of the preceding ſort, from which Linneus ſeems to think this is hardly ſpecifically different. In the ruined walls of the fortreſs of Boca Chica it is become a ſort of tree, eight feet high, with a ſtraight trunk four inches in diameter, and with a pretty head. Loureiro deſcribes it, as only four feet high, with a ſtraight, unbranched, unarmed ſtem.—Roots very tuberous, like thoſe of Aſphodel, in bundles; the tubers ovate-oblong, acute, white within and without, three inches long, with a ſweetiſh hot taſte. Leaves large, elegant, palmate-digitate; lobes five, (about nine, according to Loureiro) oblong, acuminate, contracted in the middle on both ſides by a very large ſinus; the outer ones frequently quite entire; (lanceolate, unequal, quite entire or ſometimes ſinuated, *L.*) petiole half a foot in length. Racemes looſe, bearing a few female flowers below many males. Corolla yellowiſh and browniſh green. Filaments before fecundation quite upright, but after that bent in various directions. The fruit is covered with a fleſhy green pellicle, marked with ſix white ſtreaks, and ſhining very much: it is then globular and more than half an inch in diameter; but this dries up and falls off, and then the capſule remains three-lobed on the ſides. But this is more or leſs the caſe in the other ſpecies of this genus, Croton and Acalypha. The ſeeds are ſhining, ſubovate, green or aſh-coloured.

Native of South America: common about Carthagena, flowering almoſt the whole year [x]: alſo of China, according to Loureiro, who adds, that it is uſed, not raw but boiled, as a reſolutive, like the preceding.]

12. This has a thick, ſwelling, fleſhy root, from which ariſes an herbaceous ſtalk as big as a man's thumb, four or five feet high, and dividing into ſeveral branches; theſe are very cloſely armed with long brown ſpines, the foot-ſtalks of the leaves are ſix or ſeven inches long, which are alſo armed with ſpines, but not ſo cloſely, nor are the ſpines ſo long as thoſe on the ſtalk and branches: the leaves are deeply cut into five lobes, which are jagged deeply on their ſides, and the nerves are armed with ſtinging ſpines: the flowers are produced in umbels at the top of the branches, ſtanding upon long naked peduncles; they are of a pure white colour: the male flowers appear firſt, they are five-petalled, forming a ſhort tube at bottom, and ſpreading open flat above; the ſtamens are the length of the tube, and fill it up at the mouth: the female flowers are ſmaller, but of the ſame ſhape, with an ovate three-cornered germ.

[According to Jacquin, the leaves are half-three-lobed, and cordate at the baſe. Corolla naked; the male flowers one-petalled, the females five-petalled. Stamens ten.

Native of Braſil.] Mr. Miller ſays, it was found at Carthagena in New Spain by Mr. Robert Millar, who ſent the ſeeds to England, which ſucceeded in ſeveral curious gardens. [But according to the catalogue of the Royal garden at Kew, it had been introduced before by Mr. Bentick in 1690. It flowers from may to july.]

Mr. Miller has another ſort, found by Dr. Houſtoun at La Vera Cruz, where it was planted for ornament. Having leaves divided like the common Wolfsbane, he names it Jatropha aconitifolia. It riſes with a ſtrong, brittle, woody ſtalk, ten or twelve feet high, covered with a gray bark, and dividing into many branches. The leaves are armed with ſmall ſtinging ſpines like thoſe of the Nettle. At the ends of the branches come out the flower-ſtalks, which are five or ſix inches long, and ſuſtain an umbel of white flowers. The males are one-petalled, and have a pretty long tube, divided at top into five ſegments: the females expand in form of a roſe, and are ſucceeded by a globular, prickly, tricoccous fruit. [It is probably a variety of the urens.]

13. This is an annual plant riſing with an herbaceous ſtalk about a foot high, dividing into two or three branches. Leaves alternate on long foot-ſtalks; lobes oblong, ſlightly ſinuated, ending in acute points. The whole plant is cloſely armed with long, briſtly, ſtinging ſpines. The flowers grow in an umbel at the ends of the branches; they are ſmall, of a dirty white colour: the females are ſucceeded by ovate, three-lobed capſules, covered with the ſame ſpines as the plant.

[Native of La Vera Cruz.

14. The tree yielding that reſin which is now commonly known under the name of Elaſtic Gum is ſuppoſed to be of this genus; but there are ſeveral others which yield a ſimilar juice, as Ficus indica, Cecropia peltata, &c.[y] Schreber placed it in a new genus, *Siphonia.*

It is a native of Guiana, of Quito and Braſil, particularly in Para, where it is called Maſſaradub. The Indians by an inciſion in the bark extract a viſcid white ſubſtance, like that which iſſues from the fig-tree; they receive it into earthen molds, to make rings, bracelets, girdles, ſyringes, hats, boots, flambeaux, figures of animals, &c. Abbé Rochon ſays that the inhabitants of Madagaſcar alſo made flambeaux of it, which burn without wicks, and afford them a very good light when they go out to fiſh in the night time; that ſurgery has derived ſome benefit from it, as it ſerves to make excellent bandages; and that in a ſtate of ſolution, it is very proper for coating over ſilk, to render it impervious to air or water. It has the extenſibility of leather, with a very conſiderable elaſticity. Spirit of wine makes no impreſſion on this ſubſtance, but it diſſolves in ether and linſeed oil, or in nut oil digeſted gently in a ſand bath: there are alſo other fat and oily ſubſtances which affect it very ſenſibly. The Chineſe have been long acquainted with the art of diſſolving it, and of giving it various colours.

Abbé Rochon deſcribes the tree which yields the elaſtic gum in Madagaſcar as twenty feet high, the leaves eight inches long and two inches broad, the fruit reſembling a round fig and full of ſmall ſeeds. We may conclude therefore that this tree is the Ficus indica; certainly not a Jatropha. The coagulated juice however is of the ſame nature.

The firſt account which we have of the elaſtic gum or reſin, or Caoutchouc, as it is called by the Indians to the S. E. of Quito, is in a memoir by Monſ. de la Condamine in the Memoirs of the French Academy for 1751, and in his relation of the river of Amazons in 1745. The tree which yields this ſubſtance grows along the banks of this river, and is very common in the foreſts of the province of Emeralds to the north of Quito, where it is called *Hheve*, and whence Aublet has taken his generic name.

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[s] Browne.

[t] Hawkſw. voy. 2. 33

[u] Hort. kew.

[x] Jacquin.

[y] Linn. ſuppl.

The tree is deſcribed as very lofty and ſtraight, and quite naked up to the head, which is very ſmall; the trunk of the largeſt is only about two feet in diameter. The foliage is not unlike that of the Caſſava (n. 10.). The fruit is triangular, incloſing three ſeeds. Theſe ſeeds or kernels, peeled and boiled in water, yield a thick oil, which the Indians uſe as butter with their food. The wood of the tree is light and fit for maſts.

Monſ. Freſnau likewiſe, about the year 1746, diſcovered the ſame tree at Cayenne. Whatever is made of this ſubſtance muſt be done on the ſpot, becauſe it thickens and dries very faſt. Warm water will ſoften and render it ſupple; it is ſenſible to the leaſt degree of froſt, but the heat of the ſun does not make any impreſſion upon it.]

PROPAGATION AND CULTURE.

All theſe plants being natives of the warm parts of America, are too tender to thrive in the open air in England. The firſt ſort is cultivated in the Weſt Indies for food, where it is propagated by cutting the ſtalks into lengths of ſeven or eight inches, which, when planted, put out roots.

The other ſorts are eaſily propagated by ſeeds, which ſhould be ſown on a good hot-bed in the ſpring, and when the plants are fit to remove, they ſhould be each tranſplanted into a ſmall pot filled with light earth, and then plunged into a freſh hot-bed of tanners bark, carefully ſhading them till they have taken freſh root; after which they muſt be treated in the ſame manner as other tender plants from hot countries, admitting freſh air to them daily, in proportion to the warmth of the ſeaſon; but as many of the ſorts have ſucculent ſtalks, ſome of which have a milky juice, they ſhould have but little water given them, for they are ſoon deſtroyed by wet.

The thirteenth ſort is an annual plant; if the ſeeds are ſown early in the ſpring, and the plants are brought forward, they will perfect their ſeeds the ſame year; but the other ſorts are perennial, ſo do not flower till the ſecond or third year; therefore the plants ſhould be plunged into the tan-bed in the ſtove, where they ſhould conſtantly remain, giving them a large ſhare of air in warm weather; but in winter they muſt be tenderly treated, and in that ſeaſon muſt have very little water. With this management the plants will continue ſeveral years, and produce their flowers, and frequently perfect their ſeeds in England.

[10. The Caſſava thrives beſt in the Weſt Indies, in a free mixed ſoil, is propagated by the bud or gem, and is generally cultivated in the following manner. The ground is firſt cleared, and hoed up into ſhallow holes, of about ten or twelve inches ſquare, and ſeldom above three or four inches in depth. When they intend to plant, they provide a ſufficient number of full-grown ſtems, and cut them into junks, of about ſix or ſeven inches length, as far as they find them tough and woody, and well furniſhed with prominent, well-grown, hardy buds: of theſe they lay one or two in every hole, and cover them over with mould from the adjoining bank; but care muſt be taken to keep the ground clean, until the plants riſe to a ſufficient height to cover the mould and to prevent the growth of all weaker weeds [z].

Ibametara. See *Spondias.*]

IBĔRIS. (Iβερις *of Dioſcorides. Suppoſed to be ſo named from* Iberia, *its place of natural growth.*)

Lin. gen. n. 804. *Reich.* 868. *Schreb.* 1080. *Gærtn. t.* 141. *Juſſ.* 240. *Dill. gen.* 6.

Claſſ. 15. 1. Tetradynamia Siliculoſa.

Nat. order of *Siliquoſæ* or *Cruciformes.* — *Cruciferæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* four-leaved: *leaflets* obovate, concave, ſpreading, ſmall, equal, deciduous.

Cor. four-petalled, unequal. *Petals* obovate, obtuſe, ſpreading, *claws* oblong, upright: of theſe the *two exterior* petals are far larger, and equal to each other; the *two interior* very ſmall, reflex.

Stam. *Filaments* ſix, awl-ſhaped, upright: of which the *two lateral ones* are ſhorter. *Anthers* roundiſh.

Pist. *Germ* roundiſh, compreſſed. *Style* ſimple, ſhort. *Stigma* obtuſe.

Per. *Silicle* upright, ſuborbiculate, compreſſed, emarginate, ſurrounded by a ſharp edge, two-celled: *partition* lanceolate; *valves* navicular, compreſſed, carinated.

Seeds a few, ſubovate.

Obs. I. rotundifolia *has nearly equal flowers and a ſubquadrangular ſilicle.* R. *The ſilicle is not emarginate in* I. cepeæfolia. *Is the partition bipartile in all the ſpecies?*

ESSENTIAL CHARACTER.

Cor. irregular, with the outer petals larger. *Silicle* emarginate, many-ſeeded: (one ſeed only in each cell in ſome of the ſpecies.)

SPECIES.

1. Iberis ſemperflorens. *Broad-leaved evergreen Candy-tuft.*
Lin. ſpec. 904. *ſyſt.* 589. *Reich.* 3. 229. *hort. cliff.* 330. *upſ.* 184.
Leucoium fruticoſum umbellatum perſicum, fol. ſempervirentibus. *Mor. hiſt.* 2. 296.
Thlaſpi latifolium polycarpon, leucoii foliis. *Bocc. ſic.* 55. *t.* 22. *f. a.* 1.
T. frut. fol. leucoii, ſemperflorens. *Seba theſ.* 1. *t.* 13. *f.* 4.—perſicum fol. Keiri. *Zanoni.* *Raii hiſt.* 837.
T. perſicum. *Rivin. tetr.* 224. *f.* 2.
Fruteſcent, leaves wedge-ſhaped quite entire blunt.

2. Iberis ſempervirens. *Narrow-leaved evergreen Candy-tuft.*
Lin. ſpec. 905. *ſyſt.* 589. *Reich.* 3. 229. *hort. cliff.* 330.
Thlaſpi montanum ſempervirens. *Bauh. pin.* 106. *Park. theat.* 841. *n.* 3. 842. *f.* 3. *Raii hiſt.* 833. *Riv. tetr.* 224. *f.* 1.
T. mont. candidum. *Dalech. hiſt.* 1180.
T. creticum perenne, flore albo. *Barr. ic.* 214. & 734.
Fruteſcent, leaves linear quite entire acute.

[3. Iberis garexiana.
Scop. inſubr. 1. 16. *t.* 7. *Allion. pedem. n.* 920. *t.* 40. *f.* 3. & *t.* 54. *f.* 2.
Leaves oblong-lanceolate acute, ſtems fruticuloſe diffuſed flexile warted, branchlets leafy upright.

4. Iberis gibraltarica. *Gibraltar Candy-tuft.*
Lin. ſpec. 905. *Reich.* 3. 229. *Curt. magaz.* 124.
Thlaſpidium hiſpanicum, &c. *Dill. elth.* 382. *t.* 287. *f.* 371.
Fruteſcent, leaves toothed at the tip.

5. Iberis ſaxatilis. *Rock Candy-tuft.*
Lin. ſpec. 905. *ſyſt.* 589. *Reich.* 3. 229. *amoen.* 4. 321. *Ger. prov.* 354. *Gouan illuſtr.* 41. *Villars dauph.* 3. 287. *Allion. pedem. n.* 921.
Thlaſpi ſaxatile vermiculato folio. *Bauh. pin.* 107. *Garid. aix.* 466. *t.* 101. *Raii hiſt.* 836.—item fruticoſum thymbræ fol. hirſutum, & ſaxatile polygalæ fol. *Bauh. pin.* 107. (Gouan).
T. montanum verm. acuto fol. *Park.* 844. *n.* 13. 843. *f.* 14.
Lithonthlaſpi tertium fruticoſius, verm. acuto fol. *Col. ecphr.* 1. 278. *t.* 277. *f.* 1.
Suffruteſcent, leaves lanceolate-linear fleſhy acute quite entire ciliate.]

6. Iberis rotundifolia. *Round-leaved Candy-tuft.*
Lin. ſpec. 905. *ſyſt.* 589. *Reich.* 3. 230. *mant.* 425. *Scop. carn. n.* 805. *t.* 37. *ann.* 2. 56. *Villars dauph.* 3. 288. *Krock. ſileſ. n.* 1036.
Thlaſpi minimum, &c. *Ard. ſpec.* 2. 33. *t.* 15. *f.* 1.
T. ſubrotundo folio, utriculo gruinali. *Barr. ic.* 1305.
Lepidium caule repente, fol. ovatis amplexicaulibus. *Hall. helv. n.* 517.
L. rotundifolium. *Allion. pedem. n.* 925. *t.* 55. *f.* 2.
Herbaceous, leaves ovate, ſtem-leaves embracing even juicy.

[7. Iberis cepeæfolia.
Lin. ſyſt. 589. *Jacqu. miſc.* 2. 28. *t.* 1.

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[z] Browne.

Thlaſpi montanum, &c. *Barr. ic.* 848.—alp. fol. rot. carnoſo, purpuraſcente flore. *Tourn. inſt.* 212.

Herbaceous, leaves ovate, ſtem-leaves ſeſſile even juicy.]

8. Iberis umbellata. *Purple Candy-tuft.*

Lin. ſpec. 906. *ſyſt.* 589. *Reich.* 3. 230. *hort. cliff.* 330. *upſ.* 184. *Krock. ſileſ. n.* 1037. *Gærtn. fruct.* 2. 279. *Curt. mag.* 106.

Thlaſpidium creticum. *Riv. tetr.* 111.

Thlaſpi umbellatum. *Crantz. auſtr.* 25.—creticum iberidis folio. *Bauh. pin.* 106.

T. cret. fl. rubente & albo. *Bauh. hiſt. Raii hiſt.* 834.—umb. fl. purpureo & albo. *Park. parad.* 390.

T. cappadocicum fl. albo & incarnato. *Beſl. eyſt. æſt.* 7. *t.* 11. *f.* 2, 3.

T. candiæ. *Ger.* 207. *emac.* 265.

Draba f. Arabis, f. Th. Candiæ. *Dod. pempt.* 713.

Herbaceous, leaves lanceolate acuminate, the lower ſerrate, the upper quite entire.

9. Iberis amara. *White Candy-tuft.*

Lin. ſpec. 906. *Reich.* 3. 230. *hort. upſ.* 184. *Gærtn. fruct.* 2. 280. *Hudſ. angl.* 285. *Wither. arr.* 682. *ed.* 3. 575. *Engl. bot. t.* 50. *f.* 2. *Sibth. oxon. n.* 567. *Hall. helv. n.* 520. *Scop. carn. n.* 806. *Pollich pal. n.* 614. *Guett. ſtamp.* 2. 146. *Villars dauph.* 3. 290.

Thlaſpi amarum. *Crantz. auſtr.* 25. *Tabern. ic.* 462. *Ger.* 205. 6. *emac.* 263. 5.

T. umbellatum arvenſe amarum. *Bauh. hiſt.* 2. 925. 1. *Raii hiſt.* 835.——iberidis folio. *Bauh. pin.* 106. *Park. theat.* 839. *n.* 2.

Thlaſpidium fol. iberidis. *Riv. tetr.* 112.

Herbaceous, leaves lanceolate acute ſomewhat toothed, flowers in racemes.

10. Iberis linifolia. *Flax-leaved Candy-tuft.*

Lin. ſpec. 905. *ſyſt.* 589. *Reich.* 3. 231. *Gouan illuſt.* 41. *Ger. prov.* 355. *n.* 4.

Thlaſpi luſitanicum umbellatum, gramineo folio, fl. purpuraſcente. *Tourn. inſt.* 213. *Garid. aix.* 459. *t.* 105.

Herbaceous, leaves linear quite entire, ſtem-leaves ſerrate, ſtem panicled, corymbs hemiſpherical.

11. Iberis odorata. *Sweet-ſcented Candy-tuft.*

Lin. ſpec. 906. *Reich.* 3. 231. *hort. cliff.* 330.

Thlaſpi umbellatum creticum, fl. albo odoro, minus. *Bauh. pin.* 106. *Raii hiſt.* 835.

T. umb. cret. fl. albo odorato. *Park. theat.* 839. *n.* 3.—parvum, umb. fl. niveo odor. *Bauh. hiſt.*—parv. 4. odor. fl. *Cluſ. hiſt.* 2. 132.

Herbaceous, leaves linear, widening at top and ſerrate.

[12. Iberis arabica.

Lin. ſpec. 906. *Reich.* 3. 232. *amoen.* 4. 278.

Thlaſpi humile ſpica purpurea. *Buxb. cent.* 1. 2. *t.* 2. *f.* 1.

Herbaceous, leaves ovate ſmooth veinleſs quite entire, ſilicles two-lobed at the baſe and tip.]

13. Iberis nudicaulis. *Naked-ſtalked Candy-tuft*, or *Rock-creſs.*

Lin. ſpec. 907. *ſyſt.* 589. *Reich.* 3. 232. *hort. cliff.* 328. *fl. ſuec. n.* 581. *Hudſ. angl.* 285. *Wither. arr.* 682. *ed.* 3. 575. *Curt. lond. n.* 66. *Engl. bot. t.* 327. *Lightf. ſcot.* 346. *Relh. cant. n.* 476. *Hall. helv. n.* 521. *Pollich pal. n.* 615. *Fl. dan. t.* 323. *Villars dauph.* 3. 291. *Krock. ſileſ. n.* 1038.

Burſa paſtoris minor. *Dod. pempt.* 103. *Lob. ic.* 1. 221. 2. *Park. theat.* 866. 3.—minima. *Ger.* 214. 5. *emac.* 276. 2.—fol. inciſis. *Bauh. pin.* 108.—parva, fol. glabro ſpiſſo. *Bauh. hiſt.* 2. 937. 1.

Naſturtium petræum. *Tabern. ic.* 451. *Ger.* 194. 3. *emac.* 251. 4. *Park. theat.* 828. 7. *Raii hiſt.* 827. *ſyn.* 303. *Petiv. brit. t.* 50. *f.* 2.—fol. Burſæ Paſtoris. *Bauh. pin.* 104.

N. minimum vernum, fol. tantum circa radicem. *Magn. monſp.* 187. *fig.*

Herbaceous, leaves ſinuate, ſtem naked ſimple.

[14. Iberis pinnata. *Winged Candy-tuft.*

Lin. ſpec. 907. *ſyſt.* 589. *Reich.* 3. 232. *mant.* 426. *amoen.* 4. 278. *Villars dauph.* 3. 291. *Ger. prov.* 355. *n.* 5.

T. umbellatum, naſturtii folio, monſpeliacum. *Bauh. pin.* 106. *Raii hiſt.* 835. *Park. theat.* 840. *f.* 4.—alterum minus umb. naſturtii hortenſis folio, narbonenſe. *Lob. ic.* 218.—tenuiter diviſo fol., amarum. narb. *Bauh. hiſt.* 2. 925.—narbonenſe. *Ger.* 209. 3.—umb. narb. *Ger. emac.* 267. 4.

Herbaceous, leaves pinnatifid.]

DESCRIPTIONS, *&c.*

1. This is a low ſhrubby plant, which ſeldom riſes above a foot and half high; having many ſlender branches, which ſpread on every ſide; and fall towards the ground if they are not ſupported. Theſe branches are well furniſhed towards their extremity with leaves, which continue green all the year; and in ſummer the flowers are produced at the end of the ſhoots; they are white and grow in an umbel, continue long in beauty, and being ſucceeded by others, the plants are rarely deſtitute of them from the end of auguſt to the beginning of june, which renders this plant valuable.

There is a variety with ſtriped leaves.

[It is a native of Perſia and Sicily, and was cultivated in the Oxford garden in 1680[a].]

2. This is of humbler growth than the firſt, ſeldom riſing more than ſix or eight inches high, nor do the branches grow woody, but are rather herbaceous. The leaves continue green through the year, and the flowers are of as long duration as thoſe of the firſt ſort.

[Native of the iſland of Candia on rocky ground. Cultivated in the botanic garden at Chelſea in 1739; flowering from april to june[b].

3. Root horizontal, with many fibres. Stems many, depreſſed, brown, round, naked, commonly ſimple, not at all ſtriated. Leaves ſome oblong others lanceolate, all entire, alternate, ſeſſile, ſmooth, more or leſs ſpreading, many eſpecially about the middle of each branchlet. Flowers in terminating corymbs. Calycine leaflets oblong, almoſt equal, membranaceous and whitiſh at the tip. Corolla white; the two outer petals double the ſize of the others, from a ſhorter and ſlender claw ſpreading out into an oblong entire obtuſe border. The four longer filaments are red, and grow thicker above the middle. There are two elliptic green glands between the ſhorter filaments and the germ, which is elliptic; the ſtyle is ſhort, and the ſtigma is yellowiſh and papilloſe. Silicle (or rather capſule) ruſeſcent, flattiſh on one ſide, ſlightly convex on the other, and marked with tranſverſe branched wrinkles. Seed ſingle in each cell, ovate, rufous, ſlightly compreſſed, faſtened by its proper pedicel to the upper part of the partition.

The ſeed-leaves are ovate, elliptic, ſmooth. The ſeeds germinate in fourteen or ſixteen days. It flowers the ſecond year, but all the ſeeds do not arrive at maturity. It has no ſmell; but the ſame taſte as *Lepidium.* It agrees with the two preceding ſorts in having fruteſcent ſtems, ſmooth leaves, and white flowers; but differs from the *ſempervirens* in having the ſtems not upright, the branches neither rigid nor ſtriated, and the leaves acute; from the *ſemperflorens* in the leaves not appearing in winter, and in the ſtems being flexile, more ſlender, and warted by the fallen leaves.

The ſeed-veſſel differs no otherwiſe from a capſule than in having deciduous valves, and it has only a ſingle ſeed in each of the two cells[c].

Native of Piedmont, about Strop, above Tende in the high mountains between Briga and Carlin, and above Frabroſa[d].

4. Stems many, thick, green, ſtriated, aſcending, from a foot to eighteen inches in length, divided into ſeveral branches. Leaves alternate, gradually widening from a narrow baſe, ending in a blunt point, thick, ſmooth, veinleſs except in the middle, dark green above; ſomewhat paler underneath. Flowers terminating in corymbs, at firſt white, afterwards pale purple, without ſcent; the two outer petals broader and longer. Anthers oblong, at firſt yellow but turning brown or duſky purple. Calycine leaflets green with purple edges. Seeds broadiſh, flatted, browniſh.

The ſtems are rigid and woody; the leaves in the wild plant are ſmaller and more bluntly toothed than in the cultivated one[e].

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[a] Hort. kew.
[b] Ibid.
[c] Scopoli.
[d] Allioni.
[e] Dillenius.

The flowers bear ſome reſemblance to thoſe of the common Candy-tuft, (n. 8.) but when they blow in perfection they are uſually twice as large : hence they are highly ornamental in the greenhouſe, early in the ſpring, which is the time of their appearing[f].

It is nearly allied to the firſt ſpecies, but it is leſs ſhrubby and woody, the leaves are toothed towards the end, and the flowers are in larger corymbs.

I. rotundifolia (n. 6.) is a ſmaller and leſs robuſt plant, the leaves ſmaller and rounder, the flowers and ſilicles alſo ſmaller, the latter rounder, not emarginate[g].

Native of Spain. Cultivated in 1732 at Eltham by James Sherard, M. D.[h]

5. Root woody, hard, twiſted and large. Stems diffuſed, numerous, branched at the baſe, ſcarred with fallen branches and leaves, three or four inches high. Leaves cluſtered, very narrow, almoſt cylindrical, ſucculent, ſmooth, ſeſſile, diminiſhing in length as they are higher on the ſtem, and ciliate on the edge; the lower ones ſpreading and reflex, the upper approximating to the ſtem and fewer. The ſtems and branches are almoſt naked at top, and terminate in a corymb of white or purple flowers: in the progreſs of the infloreſcence the corymb becomes a raceme. Calycine leaflets ovate, white at the edge, the ſame length with the claws of the corolla. Petals almoſt linear, only the end is broader, crenulate but not emarginate, the two upper ones double the length of the two others or more. Filaments purple at top. Silicle large, roundiſh at the baſe, retuſe at the top, with a wide leafy rim, having in each cell two oblong-ovate ſeeds, grooved on one ſide[i].

Native of the South of France and Italy.

Garidel's figure repreſents the plant larger, and the leaves more fleſhy than it is even in gardens. Columna's figure is much better[k].

It varies with leaves almoſt flat, and little if at all ciliated[l].

6. Stem creeping. Leaves ſmooth, ſoft; thoſe next the root quite entire and petioled, thoſe on the ſtem ſmooth and entire. Flowers almoſt regular. Silicle ſubquadrangular. It reſembles *Thlaſpi ſaxatile*[m].

The roots creep far and wide and are much branched. Stems procumbent, a palm in length, leafy but not branched. Leaves ſucculent, glaucous, thinly ſerrate or entire. Corymbs denſe. Calycine leaflets lanceolate. Petals ſcarcely, if at all, unequal, with a broad claw. Silicle long, ovate-lanceolate, and rendered almoſt ſquare by a raiſed line. Seed ſingle in each cell[n].

Stems naked, ſlender, creeping, branched. Branches creeping, naked, red at bottom, above leafy and aſcending. Lower leaves like thoſe of wild Thyme, ſmooth, thickiſh, ſoft, pale green, quite entire or with a tooth or two at top. Flowers in racemes, on ſpreading peduncles. Calyx reddiſh. Petals purple, with the border entire, blunt, oval. Silicle three lines long, ſomewhat oblique, oblong. Seed ſmooth, compreſſed, ſubovate, blunt, rufous, lanuginous where it adheres to the partition[o].

Native of Switzerland, Carniola, South of France, Italy, Sileſia.—Cultivated by Mr. Miller in 1748. It flowers from may to july[p].

This and all the preceding ſorts are perennial; the following are annual, except perhaps the next which ſeems to be perennial.

7. Root long, round, ſlender, fungous, branched, creeping obliquely, reddiſh violet coloured on the outſide. Stems ſeveral, ſcarcely half a ſpan in height, all proſtrate, with the flowering tops curved upwards; they are ſmooth, round, tinged with reddiſh violet, leafy. Leaves copious, ſcattered, fleſhy, very ſmooth, deep green, with ſometimes a glaucous hue, but leſs than in the preceding; the lower obovate-oblong, ſomewhat decurrent, toothed towards the top; the upper ſeſſile, oblong, ſubovate, quite entire, without any auricles at the baſe. Each flower pedicelled, all together forming firſt a corymb, afterwards a raceme. Calycine leaflets ovate, naked, entire, ſomewhat tinged with red on the outſide, half the length of the corolla. Petals obovate-oblong, entire, equal, lilac-coloured. The flowers have the ſame pleaſant ſmell with thoſe of the preceding, which it is ſtrange no author has obſerved. Silicle naked, from an ovate baſe riſing into a four-ſided pyramid, as in the preceding ſpecies. Seeds two, rufous, in each cell.

Native of Carinthia, flowering at the beginning of may[q].

Profeſſor Jacquin doubts whether the Iberis rotundifolia of Scopoli be the ſame with this or the rotundifolia. He is of opinion that it does not agree with either of them.

8. Root of common Purple Candy-tuft is annual, white, oblong, fuſiform. Stem upright, leafy, half a foot or a ſpan to a foot in height, ſubangular, green, ſmooth, branching. Leaves frequent, alternate, lanceolate, acuminate, ſmooth. Flowers in a hemiſpherical corymb on peduncles half an inch in length. Outer petals more than twice as large as the inner ones[r]. Silicle ovate-rounded, triangular-emarginate at the top, ſo as to be as it were two-eared, a little flatted, convex on one ſide, flat or ſlightly concave on the other: valves navicular, with the keel broad, leafy-compreſſed and as it were extenuated into a wing: partition narrow, contrary to the valves, and bipartile. Seeds ſolitary, ovate, flatted, a little beaked near the umbilicus, ferruginous-rufeſcent[s].

Native of the South of Europe. Cultivated in 1596 by Gerarde[t].]

The uſual colour of the flowers is a pale purple, but there is one variety with bright purple, and another with white flowers; the latter however is ſeldom ſeen in our gardens, the ſeeds of the *amara* being commonly ſubſtituted for it. It flowers in june and july, and may be continued in ſucceſſion till autumn.

[Gerarde ſays, that Candy-tuft, which he calls Candia Muſtard or Candia Thlaſpi grows in Auſtria, in untoiled places, and by highway ſides: in Crete or Candia, in Spain and Italy, and ſuch like hot regions, whence he received ſeed, by the liberality of the right honourable the Lord Edward Zouche, at his return into England from thoſe parts. Parkinſon calls it Spaniſh or Candy Tufts.

9. Linneus ſays that the White Candy-tuft reſembles the preceding very much, only it is ſmaller. It is however ſufficiently diſtinct in ſeveral circumſtances. Stem ſeven or eight inches high, pubeſcent, ſomewhat rugged, branched; branches diffuſed, alternate, the lower ones ſometimes oppoſite, not riſing all to the ſame height. Leaves alternate oblanceolate or linear-lanceolate, blunt, ſeſſile, decurrent, bright green, thickiſh, ſmooth, the lower ones ſerrate, the reſt toothletted eſpecially in front, or with a tooth or two on each ſide. Flowers white, in a terminating ſpike-like raceme; or rather, in a corymb lengthening into a raceme as the infloreſcence advances. Calyx erect. The two outer petals double the length of the two inner ones[u]. Silicles rounder and a little ſmaller than in the preceding, in other reſpects reſembling thoſe. Seeds more elliptic, flatted like a lens, paler and ſurrounded with a very narrow rim of a deeper colour[x].

Native of Switzerland, Germany, Auſtria, South of France and England. In Oxfordſhire about Henley, Nettlebed and Mungewell. In Berkſhire about Wallingford, common. Not mentioned as wild in England by any of our old writers.

10. Root ſimple, white, twiſted, having few fibres. Root-leaves lanceolate-linear, ſerrate, withering and falling as the ſtem advances; ſtem-leaves linear; quite entire, ſeſſile, few, gradually ſhorter, ſharpiſh. Stem herbaceous, ſtraight, ſlender, branched at top, branches moſtly bifid. Flowers in corymbs, the outer ones peduncled, with the two outer petals larger. Silicles very retuſe[y].

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[f] Curtis.
[g] Dillenius.
[h] Hort. kew.
[i] Villars, Gerard, Allioni.
[k] Villars.
[l] Gouan illuſtr. and Villars.
[m] Linn.
[n] Haller.
[o] Scopoli.
[p] Hort. kew.
[q] Jacqu. miſc.
[r] Krocker and Ray.
[s] Gærtner.
[t] Hort. kew.
[u] Pollich and Villars.
[x] Gærtner.
[y] Gerard.

According to Linneus it reſembles *Lepidium graminifolium* very much, but is however different. Root-leaves ſomewhat toothed, ſmooth. Silicles ovate, two-toothed with a truncated tip, whereas in *L. graminifolium* they are ovate-acuminate. The adult plant frequently caſts all its leaves.

Gouan ſays, that the ſtem puts forth immediately from the root ſome rigid faſtigiate purpliſh branches; that the root-leaves are like thoſe of *Iberis amara*, oblong, blunt, petioled, fleſhy, with two or three teeth towards the top, very ſeldom entire, purpliſh. Stem-leaves looſely alternate, longer, narrower and quite entire. Flowers purple, firſt in corymbs, then in racemes. Silicles ovate, as it were cut off, with diverging points on each ſide, and toothed margins.

Native of Spain, Portugal, and Provence.—Cultivated by Mr. Miller in 1759. It flowers in july, and is annual[z].]

11. This ſeldom grows ſo large as the purple Candy-tuft, and the flowers are much ſmaller, but have an agreeable odour.

[The flowers are in cloſe corymbs and of a ſnowy whiteneſs.—Native of the mountains near Geneva. Cultivated by Mr. Miller in 1759.

12. Native of Arabia and Cappadocia.

13. Stems ſcarcely a hand's breadth (or from two to four inches in height, numerous, decumbent when young, riſing as they advance, and finally upright, ſimple, round and ſmooth, naked or with one (two or three) ſeſſile leaves below the middle. Root-leaves ſpread on the ground in a circle, petioled, ſomewhat more than an inch in length, ſmooth, ſinuated and pinnatifid, obtuſe, the lobes in ſome oppoſite, in others alternate, the terminating one very large and rounded. Flowers in a terminating ſpike-like raceme, ſmall, white, and without ſcent; on peduncles half an inch long, and ſpreading wide. Calycine leaflets broad-lanceolate. Corolla larger than the calyx; the two outer petals larger, ſpreading, the two inner bent in. Silicle ſomewhat convex on one ſide, flat on the other, bordered with a projecting margin, and marked with a perpendicular line, which is the edge of the partition. Seeds generally two in each cavity.

The more luxuriant the plant, the more it is diſpoſed to produce leaves on the ſtem; in this ſtate the lower ones are divided into three or five ſegments, but the upper ones are undivided and lanceolate. The flowers, which are very minute, appear in may and june. The ſeed-veſſels, which are large in proportion to the plant, ſucceed in july.

Native of moſt parts of Europe, in dry and barren ſoils. With us, near London ſparingly; as on Hounſlow heath, Putney and Barnes commons, near Hampton-court and Richmond. Blackheath by the road from Greenwich to Lewiſham. Ilford in Eſſex. Near Gamlingay in Cambridgeſhire, Bungay in Suffolk, Norwich. Penſham in Worceſterſhire. Harmerhill near Salop. Nottingham-park. Little Creaton in Northamptonſhire. Between Corby Caſtle and Carliſle. And in Scotland[a].

14. Stem about half a foot in height, commonly ſimple, but ſometimes with a branch or two. Leaves pinnatifid, ſinuated or merely toothed. Flowers in a corymb, clear white, ſeldom purple. Silicle cleft at the end[b]. Linneus remarks, that the calyx is red, but the petals white, and when in fruit the form of the corymb continues, as in I. umbellata, without lengthening out into a raceme or thyrſe, as it does in ſome of the ſpecies[c].

Native of the South of Europe. Cultivated in 1640. It flowers from june to auguſt[d].]

PROPAGATION AND CULTURE.

1. This plant is ſomewhat tender, therefore is generally preſerved in green-houſes in winter, where, being placed among other low plants toward the front of the houſe, it makes an agreeable variety, as it continues flowering all the winter. But although it is commonly ſo treated, yet in moderate winters this plant will live in the open air, if it be planted in a warm ſituation and on a dry ſoil; and if, in very hard froſt, it be covered either with mats, reeds, ſtraw, or peas-haulm, it may be preſerved very well; and theſe plants which grow in the full ground, will thrive better, and produce a greater number of flowers, than thoſe which are kept in pots; but the ſoil in which theſe are planted, ſhould not be over rich, nor too wet, for in either of theſe they will grow too vigorous in ſummer, ſo will be in greater danger of ſuffering by the froſt in winter; but when they grow on a gravelly ſoil, or among lime rubbiſh, their ſhoots being ſhort, ſtrong, and not ſo replete with moiſture, will better reſiſt the cold.

This plant very rarely produces ſeeds in England, therefore is only propagated by cuttings, which, if planted during any of the ſummer months, and ſhaded from the ſun, and duly watered, will be rooted in two months, and may afterwards be either planted in pots, or into the borders where they are deſigned to ſtand.

The variety with ſtriped leaves not being ſo hardy as this, muſt be treated more tenderly in winter, and may be increaſed by cuttings in the ſame manner.

2. This rarely producing ſeeds in England, is increaſed by ſlips, which in ſummer eaſily take root. The plants may be treated in the ſame manner with the firſt ſort, and will thrive in the open air.

[4. This is eaſily raiſed from cuttings, and may be kept through the winter in a common hot-bed frame; and in mild winters will ſtand abroad, eſpecially if ſheltered among rock-work. Moiſture often proves fatal to it in the winter ſeaſon, as it does to many other confined plants in mild moiſt ſeaſons. In this caſe the ſuperfluous moiſture muſt be diſſipated by gentle heat[e].]

5, 6, 7. Are propagated by ſeeds, ſown on a ſhady border in autumn; when the plants are ſtrong enough to remove, tranſplant them into a ſhady border, where they are to remain, and they will require no other care but to keep them clean from weeds.

8, 9, 11. Theſe are ſown in ſmall patches in the borders of the flower-garden; and by ſowing them at three or four different times, there may be a ſucceſſion of them in flower till autumn. When they are grown up they ſhould be thinned, that they may put out ſide branches, flower ſtronger, and continue longer in beauty. Formerly the eighth was ſown for edgings, but theſe and all annuals are unfit for that purpoſe.

10. This may be increaſed by cuttings in the ſame manner as the firſt ſort. Some of the plants may be ſet on a warm border, in a dry ſoil; leaving two or three in pots to be ſheltered under a frame in winter, in caſe of a ſevere froſt.

13. This diminutive plant is rarely admitted into gardens. The ſeeds may be ſown in autumn where the plants are deſigned to remain, and require no other care but to keep them clean from weeds.

[Iberis. See *Cardamine*, *Lepidium* and *Thlaſpi*.

Ibipitanga. See *Plinia*.]

Ibiscus. See *Hibiſcus*.

Icaco. See *Chryſobalanus*.

[Iccicariba. See *Amyris*.]

ICE HOUSE, a building ſunk in the ground to preſerve Ice for the uſe of a family in the ſummer ſeaſon.

In the choice of a ſituation for an Ice-houſe, the principal regard ſhould be, that of a dry ſpot of ground, for wherever there is moiſture, the ice will melt; therefore in all ſtrong lands, which detain the wet, there cannot be too much care taken to make drains all round the building to carry off all moiſture; for when this is lodged near the building, it will occaſion a damp there, which will always be prejudicial to the keeping of the ice.

The next conſideration muſt be, to have the place ſo elevated, that there may be deſcent enough to carry off whatever wet may happen near the building, or from the ice melting; alſo, that the place be as much expoſed to the ſun and air as poſſible, and not placed under the drip, or in the ſhade of trees, as hath been is often practiſed, under a falſe notion, that if it ſhould be expoſed to the ſun, the ice will melt away in ſummer, which never can be the caſe where there is ſufficient care taken to exclude the outward air (which muſt always be regarded in the building of theſe houſes) for the heat of the ſun can never penetrate through the double arches of the building, ſo as to add any warmth to the air; but when the building is entirely open to the ſun and wind, all damps and vapours will thereby be removed from about the building, which can never be kept too dry, or free from moiſt vapours. As to the figure of the building, that may be according to the fancy of the owner; but for the well into which the ice is to be put, a circular figure is the moſt convenient; the depth of the well, as alſo the diameter of it, muſt be proportioned to the quantity of ice wanted, but it is always beſt to have enough; for when the houſe is well built, it will keep the ice for two or three years: and there will be this advantage in having it large enough to contain ice for two years conſumption, that if a mild winter ſhould happen, when there is not ice to be had, there will be a ſtock to ſupply the want.

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[z] Hort. kew.
[a] Curtis, Woodw. Mſs. Withering.
[b] Villars.
[c] Linn. mant.
[d] Hort. kew.
[e] Curtis.

If the quantity wanting is not great, a well of ſix feet diameter, and eight feet deep, will be large enough; but for a large conſumption, it ſhould not be leſs than nine or ten feet diameter, and as many deep: where the ſituation is either dry chalk, gravel, or ſand, the pit may be entirely below the ſurface of the ground; but in ſtrong loam, clay, or moiſt ground, it will be the beſt way to raiſe it ſo high above the ſurface, as that there may be no danger from the wet.

At the bottom of the well there ſhould be a ſpace left, about two feet deep, to receive any moiſture which may drain from the ice, and a ſmall underground drain ſhould be laid from this, to carry off the wet; over this ſpace of two feet, ſhould be placed a ſtrong grate of wood, to let the moiſture fall down, which may at any time happen, from melting of the ice. The ſides of this well muſt be walled up with brick or ſtone, at leaſt two feet thick; but if it is yet thicker, it will be better, becauſe the thicker the walls are made, the leſs danger there will be of the well being affected by any external cauſe. When the well is brought within three feet of the ſurface, there muſt be another outer arch or wall begun, which muſt be carried up to the height of the top of the intended arch of the well; and if there is a ſecond arch turned over from this well, it will add to the goodneſs of the houſe; but this muſt be ſubmitted to the perſon who builds, if he will be at the expenſe; but if not, then the plate into which the roof is to be framed, muſt be laid on this outer wall, which ſhould be carried high enough above the inner arch, to admit of a door-way in, to get out the ice. If the building is to be covered with ſlates or tiles, there ſhould be a thickneſs of Reeds laid under, to keep out the ſun and external air; if theſe Reeds are laid two feet thick, and plaſtered over with lime and hair, there will be no danger of the heat getting through it.

The external wall need not be built circular, but of any other figure, either ſquare, hexangular, or octangular; and where this ſtands much in ſight may be ſo contrived as to make it a good object. I have ſeen an Ice-houſe built in ſuch a manner as to have a handſome alcove ſeat in the front, and behind this ſeat was contrived a paſſage to get out and put in the ice; and by having the entrance behind, to the north aſpect, a ſmall paſſage being next the ſeat, through which a perſon might enter to take out the ice, and a large door being contrived with a porch, wide enough for a ſmall cart to back in, to ſhoot down the ice upon the floor near the mouth of the well, where it may be well broken, before it is put down. The aperture of this mouth of the well need not be more than two feet and a half diameter, which will be large enough to put down the ice, and if it was greater, it would be inconvenient; there ſhould be a ſtone fitted to ſtop this aperture, which muſt be cloſed up as ſecure as poſſible, after the ice is put in, and all the vacant ſpace above and between this and the outer door, muſt be filled cloſe with Barley Straw, to exclude the air; ſo the door to enter for taking out the ice ſhould be on the oppoſite ſide, immediately behind the alcove ſeat, as was before-mentioned; and this door ſhould be no larger than is abſolutely neceſſary for the coming at the ice, and muſt be ſtrong and cloſe to exclude the air; and at five or ſix feet diſtance from this another door ſhould be contrived, which ſhould be cloſely ſhut before the inner door is opened, whenever the ice is taken out.

The building being finiſhed, ſhould have time to dry before the ice is put into it; for when the walls are green, the damp of them frequently melts the ice. At the bottom of the well, upon the wooden grate, ſhould be laid ſome ſmall faggots; and if upon theſe a layer of Reeds is placed ſmooth for the ice to lie upon, it will be better than Straw, which is commonly uſed; and in the choice of the ice, the thinner it is, the better it may be broken to powder; for the ſmaller it is broken, the better it will unite when put into the well: in putting of it in, there muſt be care taken to ram it cloſe, as alſo, by laying Straw, to allow a vacancy all round next the wall, of about two inches; this is to give paſſage to any moiſture, which may be occaſioned by the melting of ſome of the ice on the top, which, if pent up, will melt the ice downward; when the ice is put into the well, if there is a little ſalt-petre mixed at every ten inches or a foot thickneſs, it will cauſe the ice to join more cloſely into a ſolid maſs.

[The ice being all incorporated into one ſolid body, there muſt be a crow or other iron inſtrument always in readineſs to break it up; taking out no more at a time than is wanted.

Mr. Miller propoſes to make uſe of the Ice-Houſe as an ornamental building; that however is ſeldom done: and it is generally placed in a ſequeſtered ſpot, on the ſide of a hill or ſloping ground, the baſe of which is lower than the bottom of the well; the outſide being well banked up with earth, the better to keep out all air and heat, and the embankment being neatly covered with turf.

For the dimenſions and other particulars of the building ſee the plate.

ICE PLANT. See *Meſembryanthemum.*

ICHTHYOMETHIA. See *Piſcidia.*

JERUSALEM ARTICHOKE. See *Helianthus.*

——— COWSLIP. See *Pulmonaria.*

——— SAGE. See *Phlomis.*

JESUIT'S BARK. See *Cinchona.*

JEW'S MALLOW. See *Corchorus.*

IGNATIA.

Lin. gen. Schreb. n. 340. *Suppl.* 20. *Gærtn. t.* 179. Strychnos. *Juſſ.* 149. Cyrtanthus. *Schreb. gen. n.* 302. Poſoqueria. *Aubl. t.* 51. *Juſſ.* 201.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Luridæ.*—*Apocineæ,* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, ſhort, bell-ſhaped; five-toothed: *teeth* upright, ovate, obtuſe.

COR. one-petalled, funnel-form. *Tube* filiform, of a ſpan's length, ſmooth, upright. *Border* flat, five-parted: *diviſions* oblong, obtuſe, perfectly entire.

STAM. *Filaments* five, inſerted into the receptacle, length of the tube, thread-ſhaped, very ſmooth. *Anthers* five, converging into an oblong *column* which is five-cornered, ſharp and rough.

PIST. *Germ* very ſmall, ovate, very ſmooth. *Style* filiform, length of the ſtamens. *Stigma* ſlender, two-parted: *diviſions* awl-ſhaped.

PER. *Berry* pear-ſhaped, large, one-celled, with a thick woody bark.

SEEDS ſeveral, covered with a thin cuticle, ſolid, horny, very hard; the *lateral* ones irregularly tetragonal, with the inner ſides flat, the outward gibboſe, the interior oblique; the *central* one hexagonal with flat ſides.

ESSENTIAL CHARACTER.

Cal. five-toothed. *Cor.* funnel-form, very long. *Fruit* one-celled, many-ſeeded.

SPECIES.

1. Ignatia amara.

Lin. ſyſt. 227. *ſuppl.* 149. *Gærtn. fruct.* 2. 477. *Berg. mat. med.* 149. (Strychnos).

Ignatiana philippinica. *Lour. cochinch.* 126.

Leaves ovate acute, ſtem ſcandent, peduncles axillary, four-flowered or thereabouts.

2. Ignatia longiflora

Poſoqueria longiflora. *Aubl. guian.* 134. *t.* 51.

Leaves oblong waving acuminate, peduncles terminating, ſix-flowered or thereabouts.

DESCRIPTIONS, *&c.*

1. This is a very branching tree, the branches long, round, very ſmooth, climbing. Leaves oppoſite, petioled, a ſpan long, quite entire, veined, very ſmooth, flat. Flowers in ſmall panicles; peduncles bearing from three to five flowers; pedicels ſhort, round, rigid. Flowers very long, nodding, white, having the ſmell of Jaſmine. Fruit ovate, with a very ſmooth dry rind, narrowed at the neck, the ſize of a Bonchretien Pear [a].

Loureiro, who ſaw it in a growing ſtate, deſcribes it as a large ſhrub, with a trunk like a tree, and many, very long, climbing, unarmed branches. Leaves large. The tube of the corolla reclining. The fruit a large roundiſh berry, attenuated at the neck, juiceleſs; the rind very ſmooth, woody, whitiſh, like the bottle Gourd when ripe. Seeds three-cornered ovate, browniſh aſh-colour, ſmooth, of a horny ſubſtance, and a very bitter taſte.

Gærtner ſays, that the ſeeds are rather large, and different in ſhape; ſome, which ſeem to be central, oblong, very bluntly angular; others, towards the outſide, ſhorter, quadilateral, one ſide larger and a little convex, the three others flat, triangular, converging into a very blunt pyramid. All are of a duſky brown or ſmoaky colour, the ſurface rugged with very minute wrinkles, and the umbilicus perforated on the edge or at the baſe.

Juſſieu joins this plant with Strychnos, nor is the fruit in the two genera very different, except that the cotyledons are petioled, which is peculiar to Ignatia and Gyrocarpus [b].

Native of the Eaſt Indies and the Philippine iſlands, whence it has been tranſported to Cochinchina and other countries for cultivation.

The ſeeds, which are known by the name of St. Ignatius's beans, are much uſed in the Eaſt Indies, and are reputed to be tonic, diaphoretic, emmenagogue, and anthelmintic. They are uſed in the pituitary apoplexy, colic, cardialgia, intermittent fevers, ſuppreſſion of the menſes, and bites of venomous animals. They may be taken internally from ſix to twelve grains, in powder, either in wine or water, generally with good effect, ſometimes without any, but never with any danger. Too large a doſe will bring on vertigo and convulſions, but they are eaſily cured by lemonade, drank largely.

What the younger Linneus affirms, namely that the ſeeds are equally poiſonous to animals with nux vomica, is a miſtake; for a whole nut, weighing a dram, has been given to oxen, buffaloes, horſes and ſwine, without any damage. Nor is it true that theſe ſeeds are never ſpoiled by keeping, or by worms, for they are frequently found with holes eaten in them, eſpecially in the Eaſt Indies and in moiſt places [c].

2. This is a branching ſhrub five or ſix feet high, with a ſmooth green bark, and a white hard wood. It begins to put forth branches at two feet from the ground: they are knotty, twiſted and ſubdivided into oppoſite twigs. At each joint are two leaves oppoſite, ſmooth, entire, thin, oblong, waving on the edge, ending in a long point: petiole an inch long, convex below, channelled above; the largeſt leaves are ſeven inches long, and two and a half wide: between them on each ſide is a broad, ſtiff, ſharp ſtipule. Flowers terminating, about ſix in number, on a common peduncle, having two ſcales at its baſe, beſides three or four ſmaller ones ſcattered on each pedicel. Corolla white, with a tube a foot in length.

Native of Guiana on the banks of large rivers: flowering in november, and fruiting in january. The Caribbee name is Aymara-Poſoqueri [d].]

ILEX, (*of Pliny, Varro, &c.*)

Lin. gen. n. 172. *Reich.* 184. *Schreb.* 232. *Juſſ.* 379. Aquifolium. *Tournef.* 371.

Claſſ. 4. 3. Tetrandria Tetragynia.
Polygamia Dioecia, *Hudſ.*

Nat. order of *Dumoſæ.—Rhamni,* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* four-toothed, very ſmall, permanent.

COR. one-petalled, four-parted, wheel-ſhaped: *diviſions* roundiſh, ſpreading, rather large, with cohering claws.

STAM. *Filaments* four, awl-ſhaped, ſhorter than the corolla. *Anthers* ſmall.

PIST. *Germ* roundiſh. *Style* none. *Stigmas* four, obtuſe.

PER. *Berry* roundiſh, four-celled.

SEED ſolitary, bony, oblong, obtuſe, gibboſe on one ſide, cornered on the other.

ESSENTIAL CHARACTER.

Cal. four-toothed. *Cor.* wheel-ſhaped. *Style* none. *Berry* four-ſeeded.

SPECIES.

1. Ilex Aquifolium. *Common Holly.*

Lin. ſpec. 181. *ſyſt.* 168. *Reich.* 1. 354. *hort. cliff.* 40. *upſ.* 32. *Hudſ. angl.* 446. *Wither. ar.* 168. *ed.* 3. 210. *Gron virg.* 12. *Leers herborn. n.* 124. *Villars. dauph.* 2. 337. *Ger. prov.* 460. *Fl. dan. t.* 508. *Mill. fig. t.* 46. *Hunt. Evel.* 262. *Blackw. t.* 205. *Thunb. jap.* 79. *Lour. cochinch.* 91. *Plenck, ic.* 72.

Aquifolium. *Hall. helv. n.* 667.—Ilex. *Scop. carn. n.* 177.

α. Ilex aculeata baccifera. *Bauh. pin.* 425.

Aquifolium. *Matth.* 161. *Camer. epit.* 84.—ſ. Agrifolium vulgo. *Bauh. hiſt.* 1. 114. *Tourn. inſt.* 600. *Garid. aix.* 37.

Agrifolium. *Ger.* 1155. *emac.* 1338. *Raii hiſt.* 1622. *ſyn.* 466.—baccis luteis. *n.* 2.

A. ſ. Aquifolium. *Park. theat.* 1487. 1.

β. Ilex heterophylla. *Various-leaved Holly.*

Ait. hort. kew. 1. 169.

Leaves toothed ſpiny and entire.

γ. Ilex craſſifolia. *Thick-leaved Holly.*

Ait. hort. kew. 1. 169.

Leaves thicker equally ſerrate.

δ. Ilex recurva. *Slender Holly.*

Ait. hort. kew. 1. 169.

Leaves narrower recurved.

ε. Ilex ferox. *Hedge-hog Holly.*

Ait. hort. kew. 169. *Lin. ſyſt.* 168. β. *Reich.* 1. 354. β.

I. echinata. *Mill. dict. n.* 2.

Aquifolium echinata ſuperficie. *Corn. canad.* 180.

Leaves with the upper ſurface ſpiny.

Leaves ovate acute ſpiny ſhining waved, flowers axillary ſubumbelled.

[2. Ilex opaca. *Carolina Holly.*

Ait. hort. kew. 1. 169.

Leaves ovate acute ſpiny ſmooth flat, flowers ſcattered at the baſe of the laſt year's ſhoots.

3. Ilex Perado. *Thick-leaved ſmooth Holly.*

Ait. hort. kew. 1. 169.

Leaves ovate with a point, unarmed, almoſt entire.

4. Ilex Prinoides. *Deciduous Holly.*

Ait. hort. kew. 1. 169.

Leaves elliptic-lanceolate acute deciduous ſerrate, ſerratures without prickles.

5. Ilex Caſſine. *Dahoon Holly.*

Lin. ſpec. 181. *Reich.* 1. 354. *hort. cliff.* 40. *mat. med.* 54.]

I. caroliniana. *Mill. dict. n.* 3.

Aquifolium carolinenſe, fol. dentatis, baccis rubris. *Cateſb. car.* 1. *t.* 31.

[α. I. Caſſine latifolia. *Broad-leaved Dahoon Holly.*

Leaves lanceolate-oblong ſerrate.

β. I. C. anguſtifolia. *Narrow-leaved Dahoon Holly.*

Leaves lanceolate, almoſt quite entire.

Ait. hort. kew. 1. 170.

Leaves alternate diſtant evergreen lanceolate ſerrate, ſerratures acuminate.

6. Ilex vomitoria. *South-ſea Tea* or *Evergreen Caſſine.*

Ait. hort. kew. 1. 170.]

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[a] Linn. ſuppl.

[b] Gærtner.

[c] Loureiro.

[d] Aublet.

Caſſine Paragua. *Mill. dict. n.* 2. *fig. t.* 83. *f.* 2. *Pluk. mant. t.* 376. *f.* 2. *Cateſb. car.* 2. *t.* 57.
[*Leaves alternate diſtant oblong bluntiſh crenate-ſerrate, ſerratures without prickles.*

7. Ilex aſiatica.
Lin. ſpec. 181. *Reich.* 1. 354.
Leaves broad-lanceolate blunt quite entire.

8. Ilex cuneifolia.
Lin. ſpec. 181. *Reich.* 1. 354. *Plum. ic.* 118. *f.* 2.
Leaves wedge-form three-cuſped.

9. Ilex integra.
Lin. ſyſt. 168. *Thunb. jap.* 77.
Leaves oblong obtuſe entire, peduncles one-flowered.

10. Ilex rotunda.
Lin. ſyſt. 168. *Thunb. jap.* 77.
Leaves rounded acute entire, peduncles umbelliferous.

11. Ilex crenata.
Lin. ſyſt. 168. *Thunb. jap.* 78.
Leaves ovate crenate, peduncles on the branches ſcattered bearing two or three flowers.

12. Ilex emarginata.
Lin. ſyſt. 168. *Thunb. jap.* 78.
Leaves obovate emarginate, flowers axillary uſually in pairs.

13. Ilex ſerrata.
Lin. ſyſt. 168. *Thunb. jap.* 78.
Leaves ovate acute ciliate ſerrate, flowers axillary ſolitary.

14. Ilex japonica.
Lin. ſyſt. 168. *Thunb. jap.* 79.
Leaves oppoſite ſeſſile, flowers in terminating racemes.

15. Ilex latifolia.
Lin. ſyſt. 168. *Thunb. jap.* 79.
Leaves ovate ſerrate, flowers axillary aggregate.

16. Ilex crocea.
Thunb. prodr. 32.
Leaves oblong ſerrate, ſerratures ciliate-ſpiny.

DESCRIPTIONS, *&c.*

This genus conſiſts of ſmall trees or ſhrubs; with alternate leaves, evergreen, toothed and thorny; and axillary many-flowered peduncles [a].]

1. The Common Holly riſes from twenty to thirty feet, and ſometimes more. [Bradley mentions a tree ſixty feet in height]; but its ordinary height is not above twenty-five feet. The trunk is covered with a grayiſh ſmooth bark, and thoſe trees which are not lopped or browzed by cattle, are commonly furniſhed with branches the greateſt part of their length, and form a ſort of cone. Leaves petioled, about three inches long and one and a half broad, of a lucid green on their upper ſurface, but pale on their under, having a ſtrong midrib; the edges are indented and waved, with ſharp thorns terminating each of the points, ſome raiſed upwards, others bent downwards, and being very ſtiff, the leaves are troubleſome to handle; [theſe thorns are fixed into a ſtrong woody border which ſurrounds the leaf. When this tree grows naturally, it has flat, entire leaves, without thorns, only ending in a ſharp point, mixed with the others, eſpecially as it advances in age.] Flowers in cluſters from the baſe of the petioles [from a ſort of ſcale upon the branch, *With.*] on very ſhort peduncles, each ſuſtaining five, ſix or more flowers, [generally three together, *W.*] appearing in may. The corolla of a dirty white. They are ſucceeded by roundiſh berries, [crowned with the calyx, which turns black, *W.*] turning to a beautiful ſcarlet about michaelmas, and continuing the greater part of the winter. [Seeds three or four, *W.*

The difference of ſexes in the flowers of the Holly was firſt obſerved by my father. In his garden at Streatham in Surry he had many of theſe trees, which before he had poſſeſſion of the place were ſhorn into round heads: he emancipated them from their ſlavery, pruned them, and trained up leading ſhoots; ſeeming glad to be releaſed from their ſhackles, they quickly ſhot up into goodly trees, and ſoon rewarded him with this diſcovery concerning the nature of their flowers, which he communicated to the Royal Society, and is printed in their tranſactions. I perfectly recollect having carefully attended to the flowering of theſe trees during ſeveral ſeaſons, and having uniformly obſerved hermaphrodite flowers on ſome and male flowers on others: in the former the anthers were different from thoſe in the male flowers, and appeared to be effete, and there never was a ſingle male flower mixed with the hermaphrodite, or a hermaphrodite with the males, or any flower except the two here deſcribed. Others however have remarked a different and more varied diſpoſition of the ſexes.]

Mr. Miller ſays, in ſome plants I have obſerved the flowers were wholly male and produced no berries, in others female and hermaphrodite flowers, but upon ſome large old trees growing in Windſor foreſt, I have obſerved all three upon the ſame trees. [The late Sir William Watſon alſo made an obſervation of the ſame ſort. Gerard remarked hermaphrodite flowers with five petals on one tree, and male flowers with a four-parted petal and an abortive germ on another tree. Certainly in the trees which I obſerved all the petals were four-parted; and Dr. Withering ſays, that he found the Holly in flower ſo late as the ſecond week in june, and then *all the flowers* had four ſtamens and four piſtils. Haller alſo remarks, that in all the flowers which he had an opportunity of examining the corolla had the ſame ſtructure. Mr. Hudſon however deſcribes a five-toothed calyx and five-parted corolla in the hermaphrodite with five ſtamens, four ſtigmas, and a four-ſeeded berry; in the male, a four-toothed calyx, a four-parted corolla and four ſtamens. But whether this be from his own obſervation, or founded only on Gerard's, we are at a loſs to know. He has removed the Holly from the claſs where Linneus and others have placed it into the claſs Polygamia Dioecia, where it ſhould properly be found according to the obſervations given above. But it is very well remarked by Dr. Stokes, that before it be removed to another claſs, it is proper to ſhow, that the majority of the other ſpecies are liable to ſimilar ſexual variations. In the mean time the claſs Polygamia itſelf ſeems to be vaniſhing from the ſyſtem.

The common Holly grows wild in many parts of Europe, in North America, Japan, Cochinchina, &c.] It is found in woods and foreſts in many parts of England. [It grows ſo ſpontaneouſly, ſays Mr. Evelyn, in this part of Surry, that the large vale near my own dwelling was anciently called *Holmeſdale*: in Dungeneſs in Kent, it grows naturally among the pebbles upon the very beach. Dr. Withering ſays, that on the north ſide of the Wrekin in Shropſhire the trees grow to a large ſize. The Holly is very common in the chiltern diviſion of Buckinghamſhire, and where permitted has a conſiderable growth. Mr. Bradley tells us, that he has ſeen it above ſixty feet high in the Holly walk near Frenſham in Surry.

The Holly is called alſo in Engliſh Hulver and Holme. It is known by the name of Hulver in Norfolk. In German it has a great variety of appellations, *Stechpalme*, *Stecheiche*, *Stechbaum*, *Stechlaub*, *Hulſe*, *Hulſenbaum*, *Hulſenſtrauch*, *Hulſt*, *Hulch*, *Holſt*, *Hubze*, *Hullgehobz*, *Myrtendorn*, *Chriſtdorn*, *Mauſedorn*, *Zwieſeldorn*, *Kleeſebuſch*, *Stechapſel*, *Stechwinde*, *Walddiſtel*. In Daniſh, *Stikpalme*, *Maretorn*, *Chirſttorn*, *Skoutiſdel*. In Swediſh, *Jernek*, *Chriſttorn*. In French, *le Houx*, *le grand Houſſon*, *L'Agron*, *grand Pardon*, *Bois Franc*. In Italian, *Agrifoglio*, *Alloro ſpinoſo*. In Spaniſh, *Acebo*, *Agrifolio*. In Portugueze, *Azevinho*, *Agrifolio*, *Acrifolio*, *Aquifolio*. In Ruſſian, *Waeſoſcheld*, *Oſtrokrof*, *Padub*.

The Holly makes an impenetrable fence, and bears cropping well, nor is its verdure, or the beauty of its ſcarlet berries, ever obſerved to ſuffer from the ſevereſt of our winters [b]. It would claim the preference for this purpoſe even to the Hawthorn, were it not for the ſlowneſs of its growth whilſt young, and the difficulty of tranſplanting it when grown to a moderate ſize. But when it once takes well, the hedge may be rendered ſo cloſe and thick, as to keep out all ſorts of animals [c]. Mr. Evelyn's impregnable Holly hedge, four hundred feet in length, nine feet high, and five in diameter, has been much celebrated by himſelf, Ray and others.

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[a] Juſſieu.

[b] Withering.

[c] Hunter's Evelyn.

It does beſt in cold, ſtony lands, according to Dr. Hunter; it certainly proſpers on gravel over chalk. It refuſes not, ſays Mr. Boutcher, the pooreſt hot ſandy gravelly and rocky ground, nor the coldeſt clay. On the latter, however, I have never ſeen it advance but with moſt diſcouraging ſlowneſs. Mr. Marſhall relates, that in the Wolds of Yorkſhire, he has ſeen the Holly raiſed (by the practice of a man who has paid great attention to the buſineſs of hedge-planting) with an unuſual degree of rapidity and certainty[d]. This man's ſecret would be of ineſtimable value to the public.]

Mr. Miller directs that a Holly hedge ſhould never be clipped with ſheers, becauſe when the leaves are cut through the middle, they are rendered unſightly, and ſhould therefore be cut with a knife cloſe to a leaf; and although by this method, it is not ſhorn ſo even, yet it will have a much better appearance. [This may be an attention due to a garden hedge, but it is obvious that on a large ſcale it is impracticable, and except for mere ornament it is unneceſſary. Mr. Boutcher adds, that if a hedge be clipped at all, it ſhould not be done later in the ſeaſon than july.

The common Holly being a very beautiful tree in winter, deſerves a place in all plantations of evergreen trees and ſhrubs, where its ſhining leaves and ſcarlet berries make a fine variety; and if a few of the beſt variegated ſorts are properly intermixed, they will enliven the ſcene.

The wood of this tree, ſays Mr. Evelyn, is the whiteſt of all hard woods, and uſed by the inlayer, eſpecially under thin plates of ivory. The mill-wright, turner and engraver prefer it to any other. It makes the beſt handles and ſtocks for tools, flails, the beſt riding-rods and carter's whips; bowls, chivers, and pins for blocks; alſo it excels for door-bars and bolts.] Mr. Miller adds, that it is made into hones for ſetting razors; that the wood taking a fine poliſh, is very proper for ſeveral kinds of furniture; and that he had ſeen the floor of a room laid in compartments with this and mahogany, which had a very pretty effect. [It is much uſed, with Box, Yew, White-thorn, &c. in the ſmall trinkets and other works, carried on in and about Tunbridge, and commonly called Tunbridge ware. The wood, ſays Dr. Withering, is uſed in fineering, and is ſometimes ſtained black to imitate Ebony.

Sheep and deer are fed during winter with the croppings. Birds eat the berries. The bark fermented, and afterwards waſhed from the woody fibres, makes the common Birdlime.

Varieties.

Forty or fifty varieties, depending on the variegations of the leaves or thorns, and the colour of the berries, all derived from this one ſpecies,] are raiſed by the nurſery-gardeners for ſale, and formerly were in very great eſteem, but are now leſs regarded, ſince the old taſte of filling gardens with ſhorn Ever-greens has been laid aſide; a few, however, of the moſt lively varieties ſhould be admitted in plantations, and will have a good effect in the winter ſeaſon, if they are properly diſpoſed.

[Of the varieties enumerated above, the Hedge-hog Holly is the moſt remarkable. Mr. Miller will have it to be a diſtinct ſpecies; and ſays,] that the leaves are not ſo long as thoſe of the common Holly, and have the edges armed with ſtronger thorns, ſtanding cloſer together; the upper ſurface ſet very cloſe, with ſhort prickles. It grows naturally in Canada, and keeping its difference when raiſed from the berries, Mr. Miller makes no doubt of its being a diſtinct ſpecies.

There are two varieties of this with variegated leaves, one yellow, and the other white.

[The Hedge-hog Holly was cultivated in the garden of Compton, Biſhop of London, at Fulham, by that ingenious and ſkilful gardener Mr. George London, who is ſuppoſed to have introduced it firſt from France[e].

The variety with yellow berries has been found wild in England by Wardour Caſtle, and Mr. Dale was ſhown it at Wiſton near Buers in Suffolk[f].]

Mr. Miller mentions the following varieties as the moſt beautiful. Painted Lady. Britiſh. Bradley's beſt. Phyllis or Cream. Milkmaid. Prichet's beſt. Cheyne's. Glory of the Weſt. Broderick's. Partridge's. Herefordſhire White. Blind's Cream. Longſtaff's. Eales's. Gold-edged, and Silver-edged Hedge-hog Holly.

[To theſe may be added, from later catalogues, Box-leaved green. Chohole. Chimney-ſweeper. Glory of the Eaſt. Wiſe's. Gray's. Common blotched. Yellow blotched Hedge-hog. Blotched yellow-berried. Maſon's copper-coloured. Sir Thomas Frankland's Britain. Whitmill's. Bradley's long-leaved. Bradley's yellow. Bridgman's. Wells's. Glaſs's. Bagſhot. Brownrig's. Lanton. Aſlet's. The Union. Fuller's Cream. Capel's Mottled. White-berried.—But enough of mere arbitrary names, without diſtinction.

2. Native of Carolina. Cultivated in 1744, by Archibald, Duke of Argyle. It flowers in may and june.

3. Native of Madeira. Introduced in 1760, by Mr. James Gordon. It flowers in april and may.

4. Native of Carolina and Virginia. Cultivated before 1760, by Archibald, Duke of Argyle. It flowers in july[g]. Of theſe we have no deſcriptions.]

5. The Dahoon Holly riſes with an upright branching ſtem to the height of eighteen or twenty feet; the bark of the old ſtems is of a brown colour, but that of the younger ſtems or branches is green and ſmooth. Leaves more than four inches long, and one and a quarter broad in the broadeſt part, of a light green and thick conſiſtence; the upper part is ſerrate, each ſerrature ending in a ſmall ſharp ſpine; they ſtand alternately on every ſide of the branches, on very ſhort foot-ſtalks. The flowers come out in thick cluſters from the ſide of the ſtalks; they are white, and ſhaped like thoſe of the Common Holly, but ſmaller. Both the female and hermaphrodite flowers are ſucceeded by ſmall roundiſh berries, making a fine appearance in winter; but they have not as yet produced fruit in England.

Native of Florida and Carolina, whence the ſeeds were ſent [about the year 1726] by Mr. Mark Cateſby, who found the trees growing on a ſwamp at a diſtance from Charles-town.

[There are two varieties of the Dahoon Holly, as mentioned above, one with broader leaves, and the other with narrower leaves, with ſcarcely any ſerratures.]

6. South-ſea Tree or Evergreen Caſſine riſes to the height of ten or twelve feet, ſending out branches from the ground upwards, which form themſelves into a ſort of pyramid. Leaves about the ſize, ſhape, texture and colour of the ſmall-leaved Alaternus, but ſomewhat ſhorter, and a little broader at the baſe. The flowers are produced in cloſe whorls at the joints of the branches, near the foot-ſtalks of the leaves: they are white, and are ſucceeded by red berries, which continue upon the plants moſt part of the winter, and being of a bright red colour, make a fine appearance, intermixed with the green leaves. From their continuing ſo long untouched by birds, in a country where theſe animals are ſo numerous, we may conclude that they have ſome venomous quality in them.

[Native of Weſt Florida[h]:] Mr. Miller ſays, Carolina, and ſome of the warm parts of Virginia, chiefly near the ſea. [It was cultivated here in 1700[i]:] and preſerved in ſeveral curious gardens near London, till the ſevere winter 1739, when moſt of them were deſtroyed. But ſince that many young plants have been raiſed from ſeeds, and have reſiſted the cold of our winters without covering; though they often ſuffer in very cold ſeaſons, where they are not very well ſheltered.

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[d] Rur. econ. of Yorkſh. 2. 203.

[e] Raii hiſt. [f] Raii ſyn. and Evelyn. [g] Hort. kew. [h] Ibid. [i] Ibid. from Plukenet, mant. 40.

The leaves of this are not ſo bitter as thoſe of the Caſſine or Caſſioberry buſh, eſpecially when green, and therefore are preferred for making an infuſion in the manner of Tea; which is accounted by the Indians very wholeſome, and is almoſt the only phyſic they uſe in ſome parts. At a certain time of the year they come down in droves, from a diſtance of ſome hundred miles, to the coaſt, for the leaves of this tree, which is not known to grow at any conſiderable diſtance from the ſea. They make a fire on the ground, and putting a great kettle of water on it, they throw in a large quantity of theſe leaves, and ſetting themſelves round the fire, from a bowl that holds about a pint, they begin drinking large draughts, which in a very ſhort time occaſion them to vomit eaſily and freely: thus they continue drinking and vomiting for the ſpace of two or three days, until they have ſufficiently cleanſed themſelves; and then every one taking a bundle of the tree to carry away with him, they all retire to their habitations.

This plant is generally ſuppoſed to be the ſame as that which grows in Paraguay, where the Jeſuits make a great revenue from the leaves, and of which an account is given by Monſ. Frezier.

[7. Native of the Eaſt Indies.

8. Native of South America [k].

9. Stem ſhrubby, upright. Branches and branchlets alternate, angular, ſpreading, brown. Leaves ovate, quite entire, with the margin a little bent back, pale underneath; an inch long. Petioles three-ſided, ſhort. Flowers in a ſeſſile umbel. Peduncles in fours or thereabouts, angular, erect, very ſhort.

10. Stem ſhrubby. Branches ſubumbelled, ſomewhat knobbed. Leaves towards the end of the branchlets, ſcattered, frequent, rounded-ovate, ſmooth, paler underneath, an inch and half long, on petioles ſhorter by half than the leaves themſelves.

11. Stem ſhrubby, upright. Branches and branchlets, roundiſh, ſomewhat knobbed and ſpreading. Leaves ſcattered, blunt, with a reflex margin, pale underneath, on very ſhort petioles. Peduncles ſimple, bifid and trifid, drooping; the pedicels very ſhort.

12. Stem ſhrubby. Branches round, flexuoſe, aſh-coloured, ſmooth; branchlets alternate, ſomewhat ſtriated and ſpreading. Leaves on very ſhort petioles, blunt, crenate, rolled back at the edge, green above, with a longitudinal groove, pale underneath, with the midrib raiſed, ever-green. Flowers peduncled, generally two together, very ſeldom ſolitary.

13. Stem ſhrubby, upright, branching very much; branches round, even, ſmooth, aſh-coloured; branchlets filiform, ſpreading a little. Leaves acuminate, pale underneath, thin, ſpreading, half an inch long, on petioles ſcarcely a line in length. Flowers on filiform drooping peduncles, half a line long. Corolla four-petalled. It flowers in june.

14. Stem ſhrubby, ſmooth, low. Leaves ovate, acuminate, tooth-ſpiny, ſmooth, an inch and half long. Raceme a finger's length. Bractes oppoſite, or in threes or fours, ovate, acute, ſmooth, ſpreading. Peduncles from the axils of the bractes, ſolitary, one-flowered, capillary, a little longer than the bractes. Calyx ſhorter than the corolla, appearing rather to be four-leaved. Corolla ſubrotate: petals obovate, entire, white. Germ ſuperior, oblong. It flowers in april.

15. Stem arboreſcent. Branches rigid, angular, brown. Leaves bluntiſh, with a reflex margin, ſhining above, pale underneath, ſpreading, two inches broad and three inches long. Petioles ſlightly three-cornered, channelled. Flowers ſuperaxillary, many together from the gems, on ſhort peduncles [l].

16. Native of the Cape of Good Hope [m].]

PROPAGATION AND CULTURE.

1. The Holly is propagated by ſeeds, which never come up the firſt year, but lie in the ground as the Haws do; therefore the berries ſhould be buried in the ground in a large pot or tub one year, and then taken up and ſown in the autumn upon a bed expoſed only to the morning ſun; the following ſpring the plants will appear, which muſt be kept clean from weeds; and if the ſpring ſhould prove dry, it will be of great ſervice to the plants if they are watered once a week; but they muſt not have it oftener, nor in too great quantity, for too much moiſture is very injurious to theſe plants when young.

In this ſeed-bed the plants may remain two years, and then ſhould be tranſplanted in the autumn, into beds at about ſix inches diſtance each way, where they may ſtand two years longer, during which time they muſt be kept conſtantly clean from weeds; and if the plants have thriven well, they will be ſtrong enough to tranſplant where they are deſigned to remain; for when they are tranſplanted at that age, there will be leſs danger of their failing, and they will grow to a larger ſize than thoſe which are removed when they are much larger; but if the ground is not ready to receive them at that time, they ſhould be tranſplanted into a nurſery in rows at two feet diſtance, and one foot aſunder in the rows, in which place the plants may remain two years longer; and if they are deſigned to be grafted or budded with any of the variegated kinds, that ſhould be performed after the plants have grown one year in this nurſery; but the plants ſo budded or grafted ſhould continue two years after in the nurſery, that they may make good ſhoots before they are removed; though the plain ones ſhould not ſtand longer than two years in the nurſery, becauſe when they are older, they do not tranſplant ſo well. The beſt time for removing Hollies is in the autumn, eſpecially in dry land; but where the ſoil is cold or moiſt, they may be tranſplanted with great ſafety in the ſpring.

[Hedges of Holly are raiſed, either by ſowing the berries where they are deſigned to remain, or by plants of three or four years growth; but the latter method is the moſt uſual: early in the autumn is the beſt time for planting them, eſpecially in dry grounds; or if it be deferred to the end of march, mulch muſt be laid to their roots, to keep them from drying, and they muſt be watered once a week, if the ſeaſon ſhould prove dry [n].

Mr. Evelyn affirms, that he has raiſed hedges four feet high in four years, from ſeedlings taken out of the woods. I could never meet with any ſucceſs in this way, and am confident that plants from the nurſeries are far more likely to enſure ſucceſs.

Mr. Bradley obſerves, that the Holly being taprooted, does not love tranſplanting, unleſs the roots have been often pruned in the nurſery. He ſays, the earth in which it is to be planted cannot well be too barren; and that ſeptember is the beſt month for tranſplanting it.

For ſowing, Mr. Boutcher directs, that the berries ſhould hang on the trees till december, or if they could be defended from birds, till february or march. As ſoon as they are gathered throw them into a tub with water, and rub them between your hands, till the ſeeds are diveſted of their thick glutinous covering. Pour off the water, with the light ſeeds that ſwim, the mucilage, &c.; and ſpread the ſeeds on a cloth in a dry airy place, rubbing them often, and giving them a freſh cloth daily till the ſeeds are quite dry. If this be done in autumn or winter, mix them with ſand, and keep them dry till ſpring; but if they have been gathered in ſpring, let them be immediately ſown. This may be done any time in march or april, when the weather is ſeaſonable, in beds of looſe light mould, three feet and a half broad, with alleys of eighteen inches between. Let the berries be ſown regularly, and not too cloſe, covering them with fine mould three quarters of an inch deep. The following year, in the beginning of april, draw out ſuch a number of plants as to leave the reſt thin enough to receive all the influence of the ſun. Plant thoſe that are drawn in a ſhady border, in rows eighteen inches aſunder, and five or ſix inches diſtant in the rows. In this ſituation they may remain three years.

Profeſſor Bradley has given a method of forwarding the germination of theſe and other hard ſeeds, for which he pretends to have been obliged to the incomparable Sir Iſaac Newton.

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[k] Linn. ſpec.

[l] Thunb. jap.

[m] Thunb. cap.

[n] Hunter's Evelyn.

Having obſerved that berries of this kind which have been eaten by fowls, and paſs through their bodies, begin to vegetate ſoon afterwards, we have no more to do than to contrive a mixture, which ſhall have in it a heat and moiſture reſembling that in the bodies of birds, and to lay the ſeeds in it for a few days before we ſow them. For this purpoſe provide a buſhel of bran, with which mix your ſeeds, and then wet the whole very well with rain or pond-water, and let the preparation remain ten days without any diſturbance in a veſſel of wood or ſtone. In about three days the mixture will begin to ferment, and ſo continue thirty or forty days, if it be ſprinkled from time to time with warm water, as it begins to dry. The heat of this moiſtened bran will put the berries into a ſtate of vegetation fit for ſowing in about a week's time after the fermentation has commenced[*].

Mr. Evelyn affirms, that the varieties with white berries, and gold and ſilver leaves, may be raiſed from ſeeds ſown and planted in a gravelly ſoil, mixed with ſtore of chalk, and preſſed hard down.]

Mr. Miller alſo ſays, that he has raiſed the Hedgehog Holly from the berries, and always found the plants to continue the ſame.

They are, however, all uſually propagated in the nurſeries by budding or grafting upon the common Holly.

[The Stocks will be fit to be grafted or budded on at four or five years growth. The grafting muſt be done in march, and the budding in july[p].]

5. The Dahoon Holly, being tender whilſt young, requires protection in the winter till the plants are grown ſtrong and woody, when they may be ſet in the full ground, in a warm ſituation, where they will endure the cold of our ordinary winters pretty well; but in ſevere froſt they ſhould be protected, otherwiſe the cold will deſtroy them.

It is propagated from ſeeds, in the ſame manner as the common ſort. The ſeeds will lie as long in the ground, they ſhould therefore be buried in ſand a year, [unleſs they are forwarded in the ways above directed,] and then taken up and ſown in pots filled with light earth, and placed under a frame in winter; in the ſpring the pots ſhould be plunged into a hot-bed, which will bring up the plants; theſe muſt be preſerved in the pots whilſt young, and ſheltered in winter under a common frame till they have obtained ſtrength, when in the ſpring they may be turned out of the pots, and planted in the full ground, in a warm ſituation.

Theſe directions may ſerve for the ſecond and fourth ſorts. The third requires the protection of a greenhouſe. The other ſorts have not been introduced.

6. This alſo is propagated from ſeeds, ſown in pots filled with light ſandy earth, and plunged into a gentle hot-bed, obſerving to water them frequently, until the plants appear, which is ſometimes in five or ſix weeks time; but at other times they will remain in the ground until the ſecond year; therefore if the plants ſhould not come up in two months, remove the pots into a ſhady ſituation, where they may remain till october, being careful to keep them clean from weeds, and now and then in dry weather giving them a little water; then remove the pots into ſhelter during the winter; and in march put them upon a freſh hot-bed, to forward the ſeeds for vegetation.

When the plants are come up, expoſe them to the open air by degrees, to inure them to the climate; yet they ſhould not be expoſed to the open ſun at firſt, but have the morning ſun only; placing them for ſome time where they may be ſheltered from cold winds. They ſhould be kept in pots four or five years; being ſlow of growth, and not having ſtrength enough to reſiſt the cold when young.

[Ilex. See *Hippomane* and *Quercus*.

Ilippe. See *Baſſia*.

Illa. See *Callicarpa*.

Illecebra. See *Sedum*.]

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[*] New Improvements, part. 2. p. 10.

[p] Ibid.

ILLECEBRUM. (Illecebra *of Pliny. Pretty or enticing plants.*)

Lin. gen. n. 290. *Reich.* 313. *Schreb.* 407. *Juſſ.* 89.

Corrigiola. *Dill. gen.* 169. *Moehr.* 106. Paronychia. *Tournef.* 281.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Holoraceæ.—Amaranthi,* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* five-leaved, cartilaginous, five-cornered; with coloured *leaflets,* which are ſharp, with diſtant points, permanent.

Cor. none.

Stam. *Filaments* five, capillary, within the calyx. *Anthers* ſimple.

Pist. *Germ* ovate, ſharp, ending in a ſhort bifid *ſtyle. Stigma* ſimple, obtuſe.

Per. *Capſule* roundiſh, acuminate, both ways five-valved, one-celled, covered by the calyx.

Seed ſingle, roundiſh, ſharp on both ſides, very large.

Obs. *The fruit in ſeveral ſpecies is different.*

ESSENTIAL CHARACTER.

Cal. five-leaved, cartilaginous. *Cor.* none. *Stigma* ſimple. *Capſ.* five-valved, one-ſeeded.

SPECIES.

[1. Illecebrum brachiatum.
Lin. ſyſt. 247. *Reich.* 1. 580. *mant.* 213. *Pluk. phyt. t.* 334. *f.* 5. (Amaranthus).
Achyranthes brachiata. *Lin. mant.* 56.
Stem upright, herbaceous, brachiate, leaves oppoſite, even.

2. Illecebrum ſanguinolentum.
Lin. ſyſt. 248. *Reich.* 1. 580.
Achyranthes ſanguinolenta. *Lin. ſpec.* 294.
Verbena rubra. *Rumph. amb.* 7. 60. *t.* 27. *f.* 2.
Fruteſcent, leaves oppoſite, ſpikes compound, heaped.

3. Illecebrum canarienſe. *Canary Illecebrum.*
Lin. ſyſt. 248. *ſuppl.* 161.
Shrubby, leaves elliptic, acute, ſtipules and bractes ovate, ſhorter, panicles terminating, dichotomous.

4. Illecebrum lanatum. *Woolly Illecebrum.*
Lin. ſyſt. 248. *Reich.* 1. 580. *Ait. hort. kew.* 1. 289. *Lour. cochinch.* 162. *Vahl. ſymb.* 1. 22.
α. Achyranthes lanata. *Lin. ſpec.* 296. *Mill. fig. t.* 11. *f.* 1.
A. villoſa. *Forſk. deſcr.* 48. *n.* 64.
Chenopodium. *Burm. zeyl. t.* 26. *f.* 1. Amaranthus. *Pluk. phyt. t.* 75. *f.* 8.
Spikes ſubaggregate, ſhorter than the leaf, branches long, rod-like.
β. *Great woolly Illecebrum.*
Spikes ſolitary, on ſpreading branchlets.
γ. *With round leaves. Retz. obſ.* 2. 13. *n.* 28. β.
Leaves ovate, ſomewhat hairy, ſpikes lateral, calyxes woolly.

5. Illecebrum javanicum. *Spear-leaved Illecebrum.*
Lin. ſyſt. 248. *Reich.* 1. 581. *Ait. hort. kew.* 1. 289.]
Celoſia lanata. *Lin. ſpec.* 298. *ſyſt.* 247. *Reich.* 1. 579. *Mill. dict. n.* 6. *noſtr. n.* 8.
[Ireſine javanica. *Burm. ind.* 212. *t.* 65. *f.* 2.
Amaranthus albus, &c. *Pluk. phyt. t.* 10. *f.* 1.
Leaves lanceolate, tomentoſe, ſpikes cylindrical, numerous, terminating.

6. Illecebrum verticillatum. *Whorl-flowered Illecebrum,* or *Knot-graſs.*
Lin. ſpec. 298. *Reich.* 1. 581. *hort. cliff.* 492. *Hudſ. angl.* 100. *Wither. arr.* 246. *ed.* 3. 267. *Fl. dan. t.* 335. *Krock. ſileſ. n.* 361.
Corrigiola. *Dill. giſſ.* 169. *Raii ſyn.* 160.
Paronychia ſerpyllifolia paluſtris. *Vaill. par. t.* 15. *f.* 7. *Tourn. par. ed. angl.* 2. 160.
Polygonum. ſerp. verticillatum. *Raii ſyn. ed.* 2. 160. *Pet. brit. t.* 10. *f.* 7.—parvum fl. albo vertic. *Bauh. hiſt.* 3. 378. *Raii hiſt.* 214.
Polygala repens. *Ger.* 449. 1. *emac.* 563. *Park. theat.* 1333.—nivea. *Bauh. pin.* 215.
Flowers in whorls, naked; ſtems procumbent.]

7. Illecebrum ſuffruticoſum. *Shrubby Illecebrum* or *Knot-graſs.*
Lin. ſpec. 298. *Reich.* 1. 581.
Paronychia hiſpanica fruticoſa, myrti folio. *Tourn. inſt.* 508. *Mill. dict. vol.* 2. *n.* 4.
Flowers lateral, ſolitary, ſtems ſuffruticoſe.

[8. Ille-

[8. Illecebrum cymoſum.
Lin. ſpec. 299. *ſyſt.* 248. *Reich.* 1. 581. *Ger. prov.* 337. 3.
Polygonum capitulis ad genicula echinatis. *Bocc. ſic.* 41. *t.* 20. *f.* 3. *Raii hiſt.* 214.
Spikes cymed, directed one way, ſtem diffuſed.
9. Illecebrum ariſtatum. *Bearded Illecebrum.*
Ait. hort. kew. 1. 290.
Flowers ſubfaſcicled, leaves lanceolate, ſilky, awned.]
10. Illecebrum Paronychia. *Mountain Illecebrum* or *Knot-graſs.*
Lin. ſpec. 299. *Reich.* 1. 582. *Ger. prov.* 337. 2.
I. ſerpillifolium. *Villars dauph.* 2. 558 ?—an polygonifolium, *ejuſd.* 557 ?
Herniaria. *Lin. hort. cliff.* 41. *upſ.* 54.
Paronychia hiſpanica. *Cluſ. hiſt.* 2. 183.
Polygonum minus candicans. *Bauh. pin.* 281.
P. montanum niveum. *Park. theat.* 445. 1.
Flowers fenced with ſhining bractes, ſtems procumbent, leaves even.
[11. Illecebrum divaricatum. *Forked Illecebrum.*
Ait. hort. kew. 1. 291.
Flowers bracted, ſubfaſcicled, peduncles dichotomous, panicled, leaves ovate-oblong, petioled.]
12. Illecebrum capitatum.
Lin. ſpec. 299. *Reich.* 1. 582. *Villars dauph.* 2. 558. *Ger. prov.* 337. 1.
Herniaria erecta. *Sauv. monſp.* 129.
Paronychia narbonenſis erecta. *Tournef. inſt.* 508. *Garid.* 350.
Polygonum minus candicans, capitulis ſurrectis. *Magn. monſp.* 209.
P. montanum niveum minimum. *Lob. ic.* 420. *adv.* 179.
Flowers with ſhining bractes, hiding terminating heads, ſtems ſomewhat erect, leaves ciliate, villoſe underneath.
[13. Illecebrum benghalenſe.
Lin. ſyſt. 248. *Reich.* 1. 582. *mant.* 213.
Stem upright, herbaceous, leaves alternate and oppoſite, lanceolate, pubeſcent.
14. Illecebrum arabicum.
Lin. ſyſt. 249. *Reich.* 1. 582. *mant.* 51.
Corrigiola albella. *Forſk. deſcr.* 207. *n.* 31.
Flowers ſcattered, heaped, bractes ſhining, equalling them, ſtems procumbent.]
15. Illecebrum Achyrantha. *Creeping Illecebrum.*
Lin. ſpec. 299. *Reich.* 1. 583.
Achyranthes repens. *Lin. ſpec. ed.* 1. 205.
Achyracantha repens, fol. Bliti pallidi. *Dill. elth.* 8. *t.* 7. *f.* 7.
Stems creeping, hairy, leaves ovate, mucronate, one oppoſite, ſmaller, heads ſubglobular, ſomewhat ſpiny.
16. Illecebrum polygonoides.
Lin. ſyſt. 249. *Reich.* 1. 583. *mant.* 345.
Gomphrena polygonoides. *Lin. ſpec. ed.* 1. 225.
Herniaria. *Brown. jam.* 184.
Amaranthoides. *Herm. parad. t.* 17. *Sloan. jam.* 1. 141. *t.* 86. *f.* 2. *Raii ſuppl.* 126.
β. Amaranthoides. *Plum. ic.* 94. *t.* 21. *f.* 2.
Stems creeping, rough-haired, leaves broad-lanceolate, petioled, heads orbiculate, naked.
[17. Illecebrum ficoideum.
Lin. ſpec. 300. *ſyſt.* 249. *Reich.* 1. 583. *Jacqu. amer. pict.* 43. *t.* 90.
Gomphrena ficoidea. *Lin. ſyſt.* 1. 225. *Jacqu. amer.* 80. *t.* 60. *f.* 4.
Amaranthoides marina, &c. *Plum. ſpec.* 20.
Stems creeping, ſmooth, leaves broad-lanceolate, petioled, heads orbiculate, pubeſcent.
18. Illecebrum ſeſſile. *Seſſile-flowered Illecebrum.*
Lin. ſpec. 300. *Reich.* 1. 584. *mant.* 345. *Vahl. ſymb.* 1. 22. *Lour. cochinch.* 162.
Gomphrena ſeſſilis. *Lin. ſpec. ed.* 1. 225. *fl. zeyl. n.* 116.
Alternanthera. *Forſk. deſcr.* 28.
Amaranthus humilis. *Burm. zeyl.* 17. *t.* 4. *f.* 2.
Amaranthoides humile, &c. *Pluk. phyt. t.* 133. *f.* 1.
Olus ſquillarum. *Rumph. amb.* 6. 37. *t.* 15. *f.* 1.
Coluppa. *Rheed. mal.* 10. 21. *t.* 9.
Stems creeping, bifariouſly tomentoſe, leaves lanceolate, ſubſeſſile, heads oblong, ſmooth.]
19. Illecebrum vermiculatum.
Lin. ſpec. 300. *Reich.* 1. 584.
Gomphrena vermicularis. *Lin. ſpec.* 224. *Brown. jam.* 184. 2.
Caraxeron humile. *Vaill. act. par.* 1722. 264.
Amaranthoides humile, &c. *Herm. parad. t.* 15. *Pluk. phyt. t.* 75. *f.* 9. *Sloan. jam.* 1. 140.
Amarantho affinis, &c. *Breyn. prodr.* 2.
Trifolii ſpica Crithmum marinum non ſpinoſum braſilienſe. *Raii hiſt.* 1331.
Stems creeping, ſmooth, leaves ſubcylindric, fleſhy, heads oblong, ſmooth, terminating.
[20. Illecebrum alſinefolium.
Lin. ſyſt. 249. *Reich.* 1. 584. *mant.* 51.
Paronychia hiſpanica ſupina alſinifolia, capitulis minoribus. *Tournef. inſt.* 508.
Stems diffuſed, leaves ovate, flowers heaped, bractes ſhining.
21. Illecebrum fruteſcens.
L'Herit. ſtirp. nov. 4. 75. *t.* 37.
Stem ſhrubby, diffuſed, dichotomous, leaves oppoſite, mealy.

DESCRIPTIONS, &c.

1. Stem naked, obſcurely angular. Leaves petioled, lanceolate-ovate. Spikes ſeveral, ſmall, villoſe, white, glomerate, from all the axils of the leaves and branches. It is an annual plant, and a native of the Eaſt Indies[a].

2. Stem uſually proſtrate, and very much branched. Spikes cluſtered, ſeſſile, alternate, looſe, tomentoſe. Calyx green, pubeſcent. Anthers yellow. Piſtil purple. Leaves red on both ſides, but the upper ſide darker. This is perennial; and native of the Eaſt Indies[b].

3. This is ſufficiently diſtinguiſhed from the other ſpecies by its woody arboreous ſtem, and its terminating dichotomous panicles. Found on the iſland of Teneriffe by Maſſon[c].

4. Stem rigid, ſomewhat hairy, branched only at the baſe. Leaves petioled, quite entire, ſharpiſh, naked, pubeſcent underneath. Peduncles lateral, very ſhort, in three or four ſeſſile ſpikes, unequal to the leaflet. Stamens connected at the baſe by means of a five-toothed crown. Seed kidney-form[d].

Loureiro adds, that the ſtem is round, and the branches diffuſed; the leaves lanceolate-ovate, ſubſeſſile, *oppoſite*; the ſpikes cloſe, oblong, axillary; the calyx compreſſed and red; the capſule compreſſed; and the ſeed round-compreſſed, hooked.

Native of the Eaſt Indies and Cochinchina, both in fields and gardens.—Cultivated in 1691, in the royal garden at Hampton Court. It is a biennial plant, and flowers moſt part of the year. It varies in ſize. The ſmaller one is deſcribed above. The great woolly Illecebrum has ſolitary, not aggregate ſpikes[e]. Retzius mentions a remarkable variety with round leaves, in Malabar.

5. Leaves like thoſe of Mercurialis tomentoſa, obovate-lanceolate, white-tomentoſe underneath, aſh-coloured above. Spikes approximating. Calyx hyaline, with a green keel. Germ globular. Stigmas two, red[f].

Native of the Eaſt Indies, and cultivated in 1768 by Mr. Miller[g], whoſe deſcription has been already given under *Celoſia lanata*, which is the ſame plant with this, and is repeated here, becauſe this ſeems to be its proper place. It is not eaſy, without more accurate notice than we ſometimes poſſeſs, to aſcertain whether a plant belongs to this genus, or Celoſia, Herniaria, Achyranthes, or Gomphrena.

6. This little plant, which by our Engliſh writers is called Whorled Knot-graſs, is only about three inches high. Stems filiform, branched, hirſute, with ſilvery hairs. Leaves oppoſite, oval, keeled, fleſhy, ſmooth, quite entire, ſeſſile, nearly of the ſame form and ſize with thoſe of Serpyllum or wild Thyme. Flowers ſmall, ſitting in the axils of the leaves, white, ſhining, cartilaginous. Upper whorls crowded near together, by no means ſo far aſunder as repreſented in Flora Danica[h]. Native of many parts of Europe, in wet

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[a] Linn. mant.
[b] Linn. ſyſt.
[c] Linn. ſuppl.
[d] Linn. ſyſt.
[e] Hort. kew.
[f] Linn. ſyſt.
[g] Hort. kew.
[h] Krock. Wither. Woodw. Mſs.

paſtures. Ray obſerved it both in Flanders and Germany. He ſays it loves boggy places with Nummularia rubra and Portulaca aquatica. It was not known in his time to grow wild in England, except in the weſtern part of Cornwall, about Penſance and elſewhere; but it has ſince been found not uncommonly in Devonſhire. It flowers in july and auguſt.]

7. This has woody ſtems about a foot high, with ſmall leaves like thoſe of Knot-graſs. The flowers come out ſingly on the ſide of the ſtems, and make little appearance.

[Native of the South of Europe. Cultivated in 1739 by Mr. Miller. It flowers from may to auguſt[i].

8. This has the appearance of Sedum and Polygonum (Knot-graſs). Stem filiform, brachiate. Leaves in fours or thereabouts, linear, thickiſh. Flowers in ſpikes directed one way, the ſpikes compoſed of cymes both lateral and terminating. Calyxes coloured, vaulted at the tip, and awned[k].

It is more particularly deſcribed by Gerard. Root annual, ſimple, herbaceous, whitiſh. Stems procumbent, from two inches to half a palm in length, jointed, knotty, the joints more frequent at the baſe and top, round, with very ſhort villoſe hairs. Leaves obovate, ſeſſile; the lower ones in pairs oppoſite, broader and more obtuſe, naked; the reſt in fours or more, coming out together from the axils of two oppoſite leaves, narrower, ſharper and ſubciliate. Bractes lanceolate, acute, membranaceous, diaphanous, faſtened to the outer baſe of the leaves, and much ſhorter than they are. Flowers numerous, cluſtered, ſeſſile, lateral, from the axils of the leaves. Calyx bell-ſhaped, herbaceous, coriaceous, ſwelling at the baſe, five-cleft; the ſegments continued to the very baſe, linear-ſubulate, ending in rigid, recurved briſtles, at the bottom of the recurved part having an appendicle to each cloſing the mouth of the calyx. Filaments faſtened to the baſe of the calyx, very ſhort and ſlender. Germ roundiſh: ſtyle ſimple, very ſhort. Seed roundiſh, compreſſed, with a diaphanous membrane drawn over it. Calyx permanent.

Native of the South of France, the iſle of Elbe and Portugal.

9. This is a biennial plant, native of the Canary iſlands, where it was found by Mr. Francis Maſſon. Introduced in 1780. It flowers in june and july[l].]

10. This has trailing ſtalks near two feet long, with leaves like thoſe of the ſeventh ſort; the heads of flowers come out from the joints of the ſtalk, having neat ſilvery bractes ſurrounding them, which make a pretty appearance. The flowers appear in june, and there is generally a ſucceſſion of them for at leaſt two months, and when the autumn proves warm, the ſeeds will ripen at the beginning of october.

[It differs from the next ſpecies in being perennial, in having longer creeping ſtems, and ſmaller heads of flowers[m].

Native of the South of Europe. Cultivated here in 1640, as appears from Parkinſon.

11. Native of the Canary iſlands, where it was found by Maſſon. Introduced in 1779. It flowers in july and auguſt[n].

12. This is an annual plant, according to Gerard, in which it differs from the tenth ſort: but Villars ſays it is perennial. The ſtems are not ſo trailing as in that, and the leaves are ciliate, underneath villoſe. Native of Provence, Spain and the Levant[o].

Villars has three ſpecies of Illecebrum. The firſt he calls *polygonifolium* or Knot-graſs leaved, and regards as a new ſpecies. He figures it in t. 16. and deſcribes it thus. Root ſingle, and pretty thick. Stems numerous, ſpreading on all ſides, decumbent, and ſometimes creeping; they are hard, round, ſmooth, and much branched. Leaves ſmall, elliptic, in pairs, very ſmooth and even, with four lanceolate bractes white as ſnow, approaching to the ſame length with the leaf, but narrower and more pointed. Flowers from the upper axils of the leaves, alternate, from three to five in number, involved in ſimilar bractes, but larger, and ſtill whiter. Flowers very ſmall, and having only five fertile ſtamens (as in n. 8.) without any barren filaments. It rather reſembles Knot-graſs than the following ſpecies, which ſeem to be allied to Herniaria.

2. I. ſerpillifolium, which he makes ſynonymous with I. Paronychia of Linneus (n. 10.)

Stems trailing, very numerous, more ſimple, or leſs branched. Leaves round, ſmall, little villoſe, green, but turning red towards the end of ſummer, manifeſtly ciliate, oppoſite, with very ſmall membranaceous ſtipules at their baſe. Flowers in rounded or leafy parcels or heads, white as a ſnow-ball, at the ends of the ſtems and lateral branches: they have five fertile and five barren filaments, like the Herniarias.

3. I. capitatum, branching leſs than the two foregoing, and the little ſtems riſing two or three inches. Leaves gray, erect, with dirty-gray ſtipules. Flowers all terminating. The five barren filaments have not been obſerved, but we may preſume the flowers have them, from the near affinity between this and the preceding.

Theſe three are all perennial, and natives of Dauphiné.

13. Root annual. Stem upright, ſubpubeſcent, not at all white, a foot or a foot and half in height. Leaves ſubſeſſile, broad-lanceolate, acuminate, pubeſcent, but green on both ſides. Spikes ſmall, hirſute, white, not only from all the axils of the leaves, but alſo at the top, where they are glomerate without leaves. Native of Bengal, Java, &c. in the Eaſt Indies[p].

14. This very much reſembles I. Paronychia (n. 10.); but the flowers are not in terminating heads, but ſcattered and cluſtered all over the ſtem, with bractes not longer than the flowers. Stamens connected at the baſe by a five-toothed pitcher, the teeth placed between the filaments. Styles two. It has the leaves of Paronychia, but narrower. Found in Arabia by Forſkahl[q].

15. Root annual. Stems from a foot to eighteen inches long, decumbent, round, jointed, and frequently putting out roots at the joints. Leaves oppoſite, very like thoſe of Blitum minus pallidum, except that they are not ſinuate at the end, but obtuſely mucronate, and one of each pair is ſcarcely more than half the ſize of the other. From the axils of theſe leaves, ſometimes both, ſometimes only one, proceed heads of flowers, the whole length of the ſtem, but eſpecially on the extreme branchlets; they are chaffy, prickly, and are compoſed of many pale juiceleſs ſcales, in which very minute and ſcarcely conſpicuous flowers lie concealed. Seed naked, round, compreſſed, leſs ſmooth and ſhining than that of Amaranthus, at firſt pale green, but afterwards becoming browniſh. About five ſcales or bractes belong to each flower.

Native of Buenos Ayres, whence ſpecimens in ſeed were ſent by Mr. Mylam, who was phyſician and ſurgeon to the South Sea Company there. From theſe ſeeds plants were raiſed in the Eltham garden, about the year 1732 or ſooner, which flowered and perfected their ſeeds in october[r].

16. Stem round, villoſe all over, dichotomous, which is not the caſe in the two next ſpecies. Leaves oppoſite, quite entire, even, but not ſmooth, very much veined, acute, ending at the baſe in petioles the length of the leaf, and ſomewhat hairy. Flowers axillary, white, and under them a three-leaved bracte, ſhorter than the flower. Filaments ſimple, ſhorter than the corolla. Germ compreſſed[s]. It reſembles the next ſpecies very much, but it is the ſtem in this, and not the flower, that is villoſe.

Native of America, on ſea ſhores. Browne ſays, that this little plant is found creeping in all the low lands, and dry ſavannas about Kingſton in Jamaica; that it generally grows in tufts, and ſpreads about ſix or eight inches from the root. He calls it hairy Rupture-wort, ſuppoſing it to be a Herniaria.

17. This plant puts out roots at every joint. Leaves wedge-form-lanceolate, acute, *ſeſſile*. Heads of flowers roundiſh, ſeſſile, numerous. Calyx (bracte) three-

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[i] Hort. kew.
[k] Linn. ſpec.
[l] Hort. kew.
[m] Gerard.
[n] Hort. kew.
[o] Linn.
[p] Linn. mant.
[q] Ibid.
[r] Dillenius.
[s] Linn. mant.

leaved, dry, permanent; outer leaflet ovate, acuminate, concave, erect, the two ſide ones awl-ſhaped, ſickled, acute, erect. Corolla (calyx), leaflets upright, dry, double the length of the bracte; the two outer lanceolate-ovate, concave, the three inner lanceolate, convex, the middle one broadeſt. Filaments awl-ſhaped, upright, the length of the germ, which is roundiſh and compreſſed; ſtyle extremely ſhort, ſingle; ſtigma obtuſe, villoſe. Capſule cordate-orbiculate, compreſſed, crowned with the ſtyle and ſtigma. Seed orbicular, compreſſed [t].

The corolla, to ſharp-ſighted perſons, is pubeſcent. The nectary has five rays, jagged at the tip [u].

Native of America on the coaſt; now wild in Spain. Jacquin ſays, it is ſo abundant in Martinico in meadows, as to be a noxious weed.

18. Stem procumbent, rooting, purple, bifariouſly two-edged with a villoſe line, as in Veronica Chamædrys. The young leaves are ſerrate, but ſcarcely apparently ſo when adult [x].

Stems herbaceous, diffuſed, ſhort, as it were four-cornered, jointed, frequently creeping. Leaves ſubſerrate, ſeſſile, ſmooth, oppoſite. Flowers white, in roundiſh axillary heads, often two together [y].

Native of the Eaſt Indies, and in wet places about Canton in China.—It is an annual plant, and was introduced in 1778 by Monſ. Thouin. It flowers from july to october [z].

Forſkahl found ſix ſtamens in his *Alternanthera*, but Vahl remarked only five in the dried ſpecimens, and ſince it agrees with this plant both in the herb and fructification, he doubts not of their being the ſame.

19. This creeping plant ſpreads a great way among the graſs. The ſtem is pretty ſlender, and throws out a few fibrous roots at every joint. The whole plant has a reddiſh brown caſt; and ſomething the appearance of Purſlane [a].

Native of Braſil and Curaçao. Very common about rock-river in Jamaica [a]. Sandy ſhores of South America [b].

Swartz places it among the Gomphrenas, on account of its having commonly two ſtyles, a two or three-leaved calyx, with a nectary and lanugo between the calyx and corolla; all indicating an affinity between this and G. globoſa.—See *Gomphrena vermicularis.*

20. Native of Spain.

21. Root woody, branched, gray. The whole plant is mealy and proſtrate. Stem branched, round, aſh-coloured; branches alternate, flexuoſe, purple at the joints. Leaves oval or roundiſh, blunt, minutely and ſcarce apparently acuminate, ſomewhat nerved, aſh-coloured underneath, ſpreading and finally hanging down, one inch long, and eight lines wide. Petioles ſcarcely any, edged by the leaf running along it. Spikes ſolitary, axillary, ſeſſile whilſt flowering, but peduncled whilſt fruiting; ovate, imbricate, three lines long. Flowers crowded very cloſe, imbricate, ſeſſile, of an herbaceous colour, two lines long. Calyx double: outer three-leaved, inner five-leaved, twice as long. Nectary a ſheath inſerted into the receptacle, five-parted, pellucid, concealing the germ. The calyx and nectary remaining, forming with the ſeed an ovate, imbricate ſpike. Seed roundiſh, compreſſed, rufous, gloſſy. It flowers and ripens its ſeeds in ſummer.

This plant has a double calyx as in Achyranthes, and ſome ſpecies of Illecebrum. It has no ſtipules, as in Achyranthes, and ſome ſpecies of Illecebrum. But it has the herb rather of this genus [c].]

PROPAGATION AND CULTURE.

7, 8, 10, 12. Theſe, which are natives of the South of Europe, may be propagated by ſeeds ſown on a bed of light earth the beginning of april. The plants will come up in may, when they ſhould be kept clean from weeds till the plants are fit to remove, when they ſhould be carefully taken up, planting ſome of each ſort in ſmall pots, and the other in a warm dry border, obſerving to water and ſhade them until they have taken new root; after which, thoſe that are planted in the full ground will require no other culture but to keep them clean from weeds; for in the ordinary winters of England they will live in the open air; but as theſe plants are ſometimes killed in ſevere winters, ſome ſhould be ſet in pots, to be placed in a common frame, where they may enjoy the open air in mild weather, but be ſcreened from froſt.

But as the ſeeds do not conſtantly ripen, they may alſo be increaſed by cuttings; which, if carefully taken off in may or june, and planted in a ſhady border, will in two months put out roots: in moiſt weather they may be tranſplanted, and afterwards treated as the old plants.

4, &c. The reſt being natives of the Eaſt or Weſt Indies, and other hot climates, are tender, and will not thrive in the open air in England; their ſeeds therefore muſt be ſown on a hot-bed in the ſpring, with Amaranthus, Gomphrena, and other tender plants: afterwards, if they are plunged into the tan-bed in the ſtove, their branches will put out roots, whereby they may be propagated in plenty. Where ſeeds cannot be obtained, they may be increaſed this way; and the perennial ſorts by cuttings.

[ILLICIUM. (*Ab illiciendo; an incitement or allurement. An inticing plant.*)

Lin. gen. n. 611. *Reich.* 746. *Schreb.* 940. *mant.* 167. *Ellis in philoſ. tranſ. for* 1770. *t.* 12. *Gærtn. t.* 69. *Juſſ.* 280.

Claſſ. 13. 7. Polyandria Polygynia.

Nat. order of *Coadunatæ.—Magnoliæ,* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* ſix-leaved, deciduous, the three inferior *leaflets* oval; the three ſuperior alternate ones narrower, and reſembling petals.

Cor. *Petals* many (twenty-ſeven), diſpoſed in a triple ſeries: the nine inferior obtuſe, concave, the nine middle ſhorter and narrower; the interior nine ſtill ſhorter and narrower.

Stam. *Filaments* very many (thirty), ſhort, depreſſed. *Anthers* upright, oblong, obtuſe, emarginate.

Pist. *Germs* very many (twenty) diſpoſed in a circle, ending in very ſhort ſpreading *ſtyles.* *Stigmas* at the upper ſide of the ſtyle, oblong.

Per. *Capſules* ſeveral, (commonly eight, *Lour.*) ovate, compreſſed, hard, ſpreading into a circle, bivalve, (one-valved, *L.* opening at the upper edge.—*G.*)

Seed ſolitary, ovate, rather compreſſed, gloſſy.

ESSENTIAL CHARACTER.

Cal. ſix-leaved. *Pet.* twenty-ſeven. *Capſ.* ſeveral, diſpoſed in a circle, bivalve, one-ſeeded.

SPECIES.

1. Illicium aniſatum. *Yellow-flowered Aniſeed-Tree.*
Lin. ſpec. 664. *ſyſt.* 507. *Reich.* 2. 624. *mat. med.* 140. 510. *Gærtn. fruct.* 1. 338. *Lour. cochinch.* 353. *Thunb. jap.* 235. *Berg. mat. med.* 514.
Zingi fructus ſtellatus ſ. Aniſum indicum. *Bauh. hiſt.* 1. 485.
Somo vulgo Skimmi. *Kæmpf. amoen.* 880. *t.* 881.
Flowers yellow.

2. Illicium floridanum. *Red-flowered Aniſeed-Tree.*
Lin. ſyſt. 507. *Reich.* 2. 624. *mant.* 395. *Ellis in philoſ. tranſ.* 1770. *vol.* 60. *p.* 524. *t.* 12. *Gærtn. fruct.* 1. 339. Hort. Kewens. 2. p. 250.
Flowers red.

DESCRIPTIONS, *&c.*

1. Stem arboreous, a fathom or more (eight feet, *Lour.*) in height, ſmooth all over. Branches trichotomous, wrinkled and angular, from ſpreading upright. Leaves aggregate, in threes or fours, elliptic (turbinate-ovate, *L.*) broader near the tip, acuminate, blunt, *L.*) quite entire, evergreen, paler underneath, often reflex, two inches long. Petiole very ſhort, channelled, gradually widening into the leaf. Flowers axillary, peduncled, ſolitary [a]. Germs eight or more [b]. Capſules ſix or eight, ovate-lanceolate, compreſſed a little, horizontal, of a ſubſtance like cork, rugged without, ſmooth and even within, having a ſtrong ſmell of Aniſe when rubbed. Seeds elliptic, ſubtruncated in front, lens-ſhaped, extremely ſmooth and even, gloſſy, rufous or cinnamon-coloured [c].

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[t] Jacquin.
[u] Linn. mant.
[x] Ibid.
[y] Loureiro.
[z] Hort. kew.
[a] Browne.
[b] Swartz.
[c] L'Heritier.

[a] Thunberg.
[b] Loureiro.
[c] Gærtner.

The whole plant, but eſpecially the fruit, has a pleaſant aromatic ſmell, and a ſweetiſh ſubacrid taſte. It is ſtomachic and carminative, and is uſed in the eaſtern countries in the cholic, rheumatiſm, &c. In China it is in frequent uſe for ſeaſoning diſhes, eſpecially ſuch as are ſweet[d].

In Japan they place bundles and garlands of the Aniſeed-tree in their temples before their idols, and on the tombs of their friends. They alſo uſe the powdered bark as incenſe to their idols. A branch put into the decoction of Tetraodon hiſpidum is ſuppoſed to increaſe the virulence of the poiſon. The bark finely powdered is uſed by the public watchmen to make a chronometer or inſtrument for meaſuring the hours, by ſlowly ſparkling at certain ſpaces in a box, in order to direct when the public bells are to ſound[e].

Native of China and Japan. Thunberg doubts whether this and the floridanum be really diſtinct ſpecies, or only varieties.

2. Stem arboreous; general appearance nearly as in the preceding ſpecies: flowers deep red: capſules conſiderably more numerous than in the former: viz. twelve or more[f]: petals from twenty to twenty-ſeven. Leaves, &c. extremely fragrant, as in the preceding. Native of Florida.

PROPAGATION AND CULTURE.

The Aniſeed Tree may be propagated by ſeeds, if they can be procured; or by laying down the young branches; or by cuttings, which ſtrike freely. It requires the ſame treatment as Gardenia.

Ilu-mullu. See *Spinifex*.

Ily. See *Arundo Bambos*.]

Immortal Flower. See *Gnaphalium*.

IMPATIENS. (*Impatient of the touch. So named from the elaſticity of the fruit.*)
Lin. gen. n. 1008. *Reich.* 1093. *Schreb.* 1365. *Rivin. tetr.* 121. Balſamina. *Tournef.* 235. *Juſſ.* 270.
Claſſ. 19. 6. Syngeneſia Monogamia.
Nat. order of *Corydales.—Gerania*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* two-leaved, very ſmall: *leaflets* roundiſh-acuminate, equal, placed towards the ſides of the flower, coloured, deciduous.

Cor. five-petalled, ringent. *Petals* unequal; of which the *ſuperior* is roundiſh, flat, upright, ſlightly trifid; conſtituting the *upper lip*.

Lower pair reflex, very large, outwardly larger, obtuſe, irregular, conſtituting the *lower lip*.

Intermediate pair oppoſite, riſing from the baſe of the upper petal.

Nectary one-leafed, receiving in the manner of a hood the baſe of the flower, oblique at the mouth, riſing outwardly, ending in a horn at the baſe.

Stam. *Filaments* five, very ſhort, narrower towards the baſe, incurved. *Anthers* as many, connate, divided at the baſe.

Pist. *Germ* ſuperior, ovate-acuminate. *Style* none. *Stigma* ſimple, ſhorter than the anthers.

Per. *Capſule* one-celled, five-valved, ſpringing open elaſtically, the valves rolling ſpirally.

Seeds ſeveral, roundiſh, fixed to a columnar receptacle.

Obs. *In ſome ſpecies the middle petals are wanting, and in ſome the horn of the nectary. The capſule differs in figure: hence Rivinus's* Impatiens *had a long capſule, and his* Balſamine *an ovate one.*

ESSENTIAL CHARACTER.

Cal. two-leaved. *Cor.* five-petalled, irregular, with a cowled nectary. *Capſ.* ſuperior, five-valved.

SPECIES.

* *With one-flowered peduncles.*

[1. Impatiens chinenſis.
Lin. ſpec. 1328. *Reich.* 3. 971. *Lour. cochinch.* 511. *Burm. ind.* 187.
Peduncles one-flowered, ſolitary, leaves oppoſite, ovate, nectaries bowed.

2. Impatiens latifolia.
Lin. ſpec. 1328. *Reich.* 3. 971.
Valli-onapu. *Rheed. mal.* 9. 91. *t.* 48.
Peduncles one-flowered, ſolitary, leaves ovate, ſerratures lanceolate, nectaries longer than the flower.

3. Impatiens roſmarinifolia.
Retz. obſ. 5. 29. *t.* 79.
Peduncles one-flowered, ſolitary, leaves oppoſite, linear.

4. Impatiens capenſis.
Thunb. prodr. cap. 41.
Peduncles one-flowered, ſolitary, leaves ovate, notches piliferous.

5. Impatiens bifida.
Thunb. prodr. cap. 41.
Peduncles one-flowered, ſolitary, leaves oblong, ſerrate, nectaries very long, bifid.

6. Impatiens oppoſitifolia.
Lin. ſpec. 1328. *Reich.* 3. 971. *fl. zeyl. n.* 314.
Kondam-pallu. *Rheed. mal.* 9. 57. *t.* 31?
Peduncles one-flowered, aggregate, leaves oppoſite, linear.

7. Impatiens cornuta.
Lin. ſpec. 1328. *Reich.* 3. 971. *fl. zeyl. n.* 316. *Lour. cochinch.* 511. *Burm. zeyl.* 41. *t.* 16. *f.* 1. (Balſamina latifolia.)
Peduncles one-flowered, aggregate, leaves lanceolate, nectaries longer than the flower.]

8. Impatiens Balſamina. *Garden Balſam.*
Lin. ſpec. 1328. *Reich.* 3. 971. *hort. cliff.* 428. *upſ.* 276. *Lour. cochinch.* 512. *Thunb. jap.* 327. *Mill. fig. t.* 59. *Blackw. t.* 583.
Balſamina. *Dod. pempt.* 671.
B. femina. *Bauh. pin.* 306. *Ger.* 290. *f.* 2. *emac.* 362. *f.* 2. *Park. theat.* 715. *f.* 2. *parad. t.* 279. *f.* 8.
Lacca herba. *Rumph. amb.* 5. 274. *t.* 90.
Tilo-onapu ſ. Nolengu. *Rheed. mal.* 9. 101. *t.* 52.
Peduncles one-flowered, aggregate, leaves lanceolate, the upper ones alternate, nectaries ſhorter than the flower.

[9. Impatiens mutila.
Lour. cochinch. 512.
Peduncles one-flowered, leaves lanceolate, ſerrate, oppoſite, nectaries mutilated.

10. Impatiens cochleata.
Lour. cochinch. 512.
Peduncles one-flowered, leaves oblong, ſubſerrate, oppoſite, nectaries ſpiral, root creeping.]

* * *With many-flowered peduncles.*

11. Impatiens triflora.
Lin. ſpec. 1329. *Reich.* 3. 972. *fl. zeyl. n.* 315.
Balſamina anguſtifolia, &c. *Burm. zeyl.* 41. *t.* 16. *f.* 2.
B. erecta, &c. *Herm. par. t.* 105.
Peduncles three-flowered, ſolitary, leaves narrow-lanceolate.

12. Impatiens Noli tangere. *Common Yellow Balſam.*
Lin. ſpec. 1329. *Reich.* 3. 972. *fl. ſuec. n.* 792. *hort. cliff.* 428. *Hudſ. angl.* 380. *Wither. arr.* 961. *ed.* 3. 263. *Hall. helv. n.* 557. *Pollich. pal. n.* 848. *Leers herborn. n.* 686. *Fl. dan. t.* 582. *Villars dauph.* 2. 669. *Krock. ſileſ. n.* 1494. *Rivin. tetr. t.* 122. *Dod. pempt.* 659. 2.
Balſamina Noli tangere. *Scop. carn. n.* 1101.
B. lutea, ſ. Noli me tangere. *Bauh. pin.* 306. *Raii ſyn.* 316.
Noli me tangere. *Bauh. hiſt.* 2. 908. *Col. ecphr.* 1. 149. *t.* 150.
Perſicaria ſiliquoſa. *Ger.* 361. *f.* 3. *emac.* 446. 4. *Raii hiſt.* 1328. *Petiv. brit. t.* 36. *f.* 1.
Mercurialis ſylveſtris, Noli me tangere dicta, ſ. Perſ. ſil. *Park. theat.* 296. 5.
Peduncles many-flowered, ſolitary, leaves ovate, joints of the ſtem ſwelling.

DESCRIPTIONS, &c.

[Theſe are herbaceous plants, with alternate, or ſometimes, but rarely, oppoſite leaves, without any ſtipules. Peduncles axillary, one-flowered or many-flowered[a]. Linneus divides the ſpecies into two ſections, from this laſt circumſtance; but Loureiro does not find, in any of the ſpecies which he examined, that the peduncles were always ſolitary, or always aggregate.

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[d] Loureiro.

[e] Thunberg.

[f] Subviginticapſularis. Gærtn.

[a] Juſſieu.

1. This is an annual plant, one foot high, upright, round, alternately branched, red. Leaves ſeſſile, ſmooth, ſubſerrate, or ſerrate-toothletted. Peduncles longer than the leaf, generally ſolitary. Flowers red-purple. Spur of the nectary awl-ſhaped, thick, very much bowed. Native of China[b].

2. This alſo is an annual plant. Leaves lanceolate, crenate, with a prominent dagger point from each notch. Peduncles nearly the length of the leaves. Flowers the ſame ſize as in I. Balſamina (n. 8.); but the ſpur awl-ſhaped, almoſt the length of the peduncle. Native of the Eaſt Indies[c].

3. Leaves glaucous underneath. Peduncles alternate. Nectary larger than the petals. In other circumſtances it agrees with I. oppoſitifolia, from which however it appears to be different. Koenig ſent it from Ceylon[d].

4, 5. Natives of the Cape of Good Hope[e].

6. This is an upright plant, with a ſucculent jointed ſtem. Leaves ſeſſile, ſmooth, ſerrate-toothed. Branches ſingle from each alternate axil. Peduncles filiform, naked, commonly three from each axil, longer than the internodes. Flowers ſmall, with a nectary much ſhorter than the petals. Native of the iſland of Ceylon[f]. Annual.

7. This is alſo an annual plant. Stem a foot high, roundiſh, diffuſed. Leaves ſerrate, hiſpid, petioled, large, duſky green, ſweet-ſmelling. Flowers purple or white. Peduncles few, long. Spur three times as long as the petals, ſomewhat bowed. Capſule ovate, acuminate, hiſpid[g].

In its leafing this reſembles the next ſpecies, but the flowers are much ſmaller, with ſpurs five times longer, and on very long peduncles. In Burman's figure, the peduncles are ſome ſolitary, others two, and others three together. The engraver, by miſtake, has placed ſome of them below the leaf. The Ceyloneſe call it *Kudaelu-kola*, from Kudaelu a ſwallow, and Kola a leaf[h].

Native not only of Ceylon, but of Cochinchina, where the inhabitants uſe a decoction of the leaves as a waſh to their head and hair, to which this plant, which is a common weed in their gardens, gives a very ſweet odour.]

8. Garden Balſamine or Balſam, is an annual plant, riſing a foot and half high, and dividing into many ſucculent branches. Leaves long, ſerrate. The flowers come out from the joints of the ſtem, upon ſlender peduncles about an inch long, each ſuſtaining a ſingle flower; but there are two, three or four of theſe peduncles ariſing from the ſame joint.

[In its wild ſtate, it is about two feet high, with an upright, round, hiſpid, juicy, white ſtem, and aſcending branches. Leaves alternate, ſerrate, ſmooth, petioled. Peduncles long, ſubaggregate. Flowers red or white. Capſule ovate-oblong, lanuginous[i].

Native of the Eaſt Indies, China, Cochinchina, and Japan; the Japoneſe uſe the juice prepared with alum, for dying their nails red[k]. It was cultivated by Gerarde in 1596[l].

By culture this plant is very much enlarged, and becomes very branching. I have ſeen the ſtem ſeven inches in circuit, and all the parts large in proportion, branched from top to bottom, loaded with its party-coloured flowers, and thus forming a moſt beautiful buſh. The varieties which cultivation has produced in this elegant flower are numerous.] White, purple, red, ſtriped and variegated of theſe different colours, ſingle and double of each. Mr. Miller ſpeaks particularly of two varieties, which perhaps may belong to ſome of the other ſpecies. Firſt, the Immortal Eagle, a moſt beautiful plant from the Eaſt Indies. The flowers double, much larger than thoſe of the common ſort, ſcarlet and white, or purple and white; and there being many of theſe, the plant is very valuable. Secondly, the Cockſpur from the Weſt Indies; which has ſingle flowers, as large as the other, but never more than half double, but only with red and white ſtripes. This is apt to grow to a very large ſize before it flowers, which is very late in autumn, ſo that in bad ſeaſons there will be ſcarcely any flowers, and the ſeeds ſeldom ripen.

[9. Stem annual, a foot and half high, upright, round, with aſcending branches. Leaves ſmooth. Flowers ſcarlet, on one-flowered, ſubſolitary peduncles. Cultivated in Cochinchina, probably from China.

10. Stem annual, a foot high, upright, jointed, red, almoſt without branches. Leaves blunt, ſmall, ſmooth, thick, ſeſſile. Peduncles long, ſubſolitary. Nectary large, compreſſed, rolled into a ſpiral. Flowers ſcarlet, very handſome, but not ſweet. Capſule fleſhy. Cultivated in China[m].

11. Stem upright, jointed. Leaves ſmooth, acuminate, ſerrate, ending in the petioles. Peduncles dividing into three, or more rarely two equal pedicels, from the ſame point, like the umbellate plants, with an involucre of the ſame number of lanceolate deciduous leaves. Flowers large, with the horn of the nectary blunt, curved inwards, thick, ſcarcely the length of the flower. Burman ſays it is very long; and has ſo repreſented it in his figure. Native of Ceylon[n]:] Mr. Miller adds, and of many parts of India, but that the flowers being ſmaller than thoſe of the common ſort, this is not worth cultivating for beauty. [Burman however ſays, that they are large and very elegant.

12. Root annual. Stem a foot high, upright. Stem and branches pale yellowiſh green, ſmooth and ſhining, ſomewhat tranſparent, thickeſt at the joints, ſucculent and brittle. Branches ſometimes oppoſite. Lower leaves ovate, uppermoſt elliptical or lanceolate, irregularly ſerrate, all ſmooth, petioled. Upper part of the ſtem flexuoſe, forming an obtuſe angle oppoſite to each leaf. Some of the branchings of the peduncles have bractes, and ſome not[o]. Flowers yellow; the lateral petals ſpotted with red, by cultivation changing to pale yellow or purpliſh[p]; theſe are blunt, ſlightly two-lobed, with an oval appendix at the baſe, about an inch in length, and above half an inch in breadth: the uppermoſt petal is roundiſh or elliptic, emarginate, blunt, quite entire, three lines and a half long, and five lines broad: the lowermoſt is tubular, round, gradually narrowing into a ſpur, reflex at the baſe, retuſe at the top, at bottom ovate, acuminate, an inch long, and half an inch wide, with ſcattered purple dots on the inſide. Filaments fleſhy, connected round the germ, thickening at top. Germ linear, ſtriated. Style ſhort, ovate, yellow. Stigma bluntiſh, yellow. Capſule an inch or more long, bellying at intervals. Seeds rather large, angular, ſtriated, ovate[q].

When the ſeeds are ripe, upon touching the capſule, they are thrown out with conſiderable force. Hence the latin names of *Impatiens* and *Noli tangere*, and the Engliſh names of *Quick in hand* (alive as it were in the hand). Gerarde calls it *Codded Arſmart*, and Parkinſon, Wild Mercury. *Touch me not.* The elaſticity of the ſeed-veſſel has furniſhed names in moſt of the European languages. In German it is called *Springſame*, *Springkraut*, &c. In Swediſh, *Springkorn.* In Daniſh, *Springkorn* or *Springurt.* In French, *Impatiente*, *ne me touchez pas*; and alſo *Balſamine jaune.* In Italian, *Erba impaziente*, *Balſamina gialla.* In Spaniſh, *No quieras tocarme*, *Balſamina amarilla.* In Portugueze, *Melindre nao me toques.*

In the day-time the leaves are expanded, but at night they hang pendant, contrary to what is obſerved in moſt plants which from a deficiency of moiſture, or a too great perſpiration from heat, commonly droop their leaves during the day[r].

The whole plant is conſiderably acrid, and no quadruped, except perhaps the goat, is ſaid to eat it. Notwithſtanding this, it was formerly conſidered as diuretic and vulnerary, and was given to relieve the hæmorrhoids and the ſtrangury. Boerhaave regarded it as poiſonous. It is now conſigned wholly to the flower-garden, where however it is not often ſeen.

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[b] Linn. and Loureiro.
[c] Linn. ſpec.
[d] Retzius.
[e] Thunberg.
[f] Linn. zeyl.
[g] Loureiro.
[h] Burm. zeyl.
[i] Loureiro.
[k] Thunberg.
[l] Hort. kew.

[m] Loureiro.
[n] Linn. zeyl.
[o] Woodw. Mſs.
[p] Withering.
[q] Pollich.
[r] Linn. Villars.

It is the only ſpecies of Impatiens wild in Europe. It is alſo found in Canada. With us it occurs in Wales, and the northern counties of England, in moiſt ſhady places, and by the banks of rivulets: as on the banks of Winander mere near Ambleſide, near Rydall Hall, and between both places, in Weſtmoreland; in Saterthwait pariſh, and by the ſide of Coniſton Lake in Lancaſhire. About Bingley in Yorkſhire. Flowering in july and auguſt.]

PROPAGATION AND CULTURE.

The ſeeds of theſe plants ſhould be ſown on a moderate hot-bed in the ſpring, and when the plants are come up about an inch high, they ſhould be tranſplanted on another moderate hot-bed at about four inches diſtance each way, obſerving to ſhade them from the ſun till they have taken new root; after which they ſhould have a large ſhare of free air admitted to them, at all times when the weather is favourable, to prevent their drawing up tall and weak: they will require to be often refreſhed with water, but it ſhould not be given to them in too great plenty; for as their ſtems are very ſucculent, they are apt to rot with much moiſture. When the plants are grown ſo large as to touch each other, they ſhould be carefully taken up with balls of earth to their roots, and each planted into a ſeparate pot filled with light rich earth, and plunged into a very moderate hot-bed under a deep frame, to admit the plants to grow, ſhading them from the ſun until they have taken freſh root; then they ſhould have a large ſhare of air admitted to them every day, and by degrees hardened, ſo as to bear the open air, into which part of the plants may be removed in july, placing them in a warm ſituation; where, if the ſeaſon proves favourable, they will flower and make a fine appearance; but it will be proper to keep part of the plants either in a glaſs caſe or a deep frame, in order to get good ſeeds, becauſe thoſe in the open air will not ripen their ſeeds until the ſummer proves very warm; and the plants in ſhelter muſt have a good ſhare of free air every day, otherwiſe they will grow pale and ſickly; nor ſhould they have too much of the ſun in the middle of the day, in very hot weather, for that occaſions their leaves hanging, and their requiring water, which is often very hurtful; therefore if the glaſſes are ſhaded in the middle of the day for three or four hours, the plants will thrive better, and continue longer in beauty than when they are expoſed to the great heat. Thoſe who are curious to preſerve theſe plants in perfection, pull off all the ſingle and plain coloured flowers from the plants which they preſerve for ſeeds, leaving only thoſe flowers which are double, and of good colours; where this is carefully done, they may be continued without the leaſt degeneracy conſtantly.

The common ſingle ſort will ſpring in the open ground, and where the ſeeds ſcatter, they will come up the following ſpring. But ſuch ſelf-ſown plants do not come to flower ſo early as thoſe which are raiſed upon a hot-bed; they will continue, however, later in the autumn. But to have good flowers, the plants muſt be raiſed in a hot-bed.

[Gerarde directs the ſeeds to be ſown at the beginning of april in a bed of hot horſe-dung, even as Muſk Melons, Cucumbers, &c. and replanted abroad from the ſaid bed, into the moſt hot and fertile place of the garden, at ſuch time as they have gotten three leaves apiece.

Parkinſon ſays, it is a very tender plant, and muſt be ſown carefully in a pot of earth, and tended and watered in the heat of ſummer, and all little enough to bring it to perfection. In his time (1629) its native place was not known here, and the ſeeds were imported from Italy.

12. The other ſorts may be treated in the manner above directed, being annual plants from the ſame countries;] but if the ſeeds of the common European ſort be permitted to ſcatter, they generally ſucceed better than when they are ſown; for unleſs they are ſown in the autumn ſoon after they are ripe, they rarely grow. The plants require no care but to keep them clean from weeds, and thin them where they are too cloſe. It delights in a ſhady ſituation and moiſt ſoil.

IMPERATORIA. (*So named from its ſuppoſed imperial virtues in medicine.*)

Lin. gen. n. 359. *Reich.* 389. *Schreb.* 491. *Gærtn. t.* 21. *Juſſ.* 220.

Claſſ. 5. 2. Pentandria Digynia.

Nat. order of *Umbellatæ* or *Umbelliferæ*.

GENERIC CHARACTER.

CAL. *Umbel univerſal* flat-ſpreading; *partial* unequal. *Involucre univerſal* none: *partial* very ſlender, with one or two leaflets, almoſt the length of the umbel. *Perianth proper* obſcure.

COR. *Univerſal* uniform; *floſcules* all fertile. *Proper* of five petals, inflex-emarginate, nearly equal.

STAM. *Filaments* five, capillary. *Anthers* roundiſh.

PIST. *Germ* inferior. *Styles* two, reflex. *Stigmas* obtuſe.

PER. none. *Fruit* roundiſh, compreſſed, gibboſe in the middle, margined, bipartile.

SEEDS two, ovate, marked on one ſide with two furrows; ſurrounded by a broad *margin*.

ESSENTIAL CHARACTER.

Fruit roundiſh, compreſſed, gibboſe in the middle, ſurrounded by a margin. *Pet.* inflex-emarginate.

SPECIES.

1. Imperatoria Oſtruthium. *Maſterwort.*

Lin. ſpec. 371. *Reich.* 1. 712. *hort. cliff.* 103. *upſ.* 65. *mat. med.* 84. *Woodv. med. bot.* 102. *t.* 35. *Plenck. ic. t.* 11. *Gærtn. fruct.* 1. 90. *Hudſ. angl.* 649. *Lightf. ſcot.* 168. *Wither. arr. ed.* 3. 308. *Hall. helv. n.* 805. *Scop. carn. n.* 328. *Villars dauph.* 2. 628. *Krock. ſileſ. n.* 456.

Imperatoria. *Camer. epit.* 532. *Fuſch.* 763. *Matth.* 775. *Trag.* 433. *Lonic.* 1. 228. 2. *Dod.* 320. 1. *Lob. obſ.* 398. 1. *ic.* 700. 1. *Bauh. hiſt.* 3. 2. 137. *Raii hiſt.* 436. *Rivin. pent. t.* 7. *Blackw. t.* 279. *Ger. emac.* 1001. *f.* 1. *Garid. aix.* 55.

I. major. *Bauh. pin.* 156. *Mor. hiſt. ſ.* 9. *t.* 4. *f.* 1.

I. ſ. Aſtrantia vulgaris. *Park. theat.* 942.

Aſtrantia. *Cluſ. hiſt.* 2. 194. 2.

Magiſtrantia. *Camer. epit.* 592.

Selinum Imperatoria. *Crantz. auſtr.* 174. *umb.* 61. *Allion. pedem. n.* 1299.

DESCRIPTION, &c.

The root is as thick as a man's thumb, running obliquely in the ground; it is fleſhy, aromatic, and has a ſtrong acrid taſte, biting the tongue and mouth like Pellitory of Spain; the leaves ariſe immediately from the root; they have foot-ſtalks ſeven or eight inches long, dividing into three very ſhort ones at the top, each ſuſtaining a trilobate leaf, indented on the border; the foot-ſtalks are deeply channelled, and when broken emit a rank odour. The flower-ſtalks riſe about two feet high, and divide into two or three branches, each being terminated by a pretty large umbel of white flowers, whoſe petals are ſplit; theſe are ſucceeded by oval compreſſed ſeeds, ſomewhat like thoſe of Dill, but larger. It flowers in june, and the ſeeds ripen in auguſt.

[Linneus obſerves, that the floral leaves are oppoſite, and that there is a petiolary, membranaceous, ventricoſe ſtipule one within another.

The leaves, according to Lightfoot, have about five pinnas, the extreme one always divided into three lobes, and all ſharply ſerrate.

Fruit elliptic, emarginate at top and bottom, membranaceous-winged. Seeds compreſſed, ſurrounded at the ſides with a very broad rim, and marked on the back with three white, acute-angled ribs, not winged; the ventral part is flat, painted with two brown bowed fillets[a].

Native of many parts of the Alps, Auſtria, Styria, Tyrol, Sileſia, Dauphiné; obſerved by Ray above the Grand Chartreuſe, and found by Mr. Lightfoot in Scotland, upon the banks of the Clyde in ſeveral places, particularly about Ardencaple; and in the iſle of Bute, near Mountſtewart.

The root is warm and aromatic; a ſudorific, diuretic and ſialagogue: recommended in dropſy, and debilities of the ſtomach and bowels; an infuſion of it in wine is ſaid to have cured quartans that have reſiſted the bark. When chewed it excites a copious flow of

[a] Gærtner.

ſaliva, with a warm and not diſagreeable ſenſation in the gums, and frequently cures the rheumatic toothache[b].]

PROPAGATION AND CULTURE.

This plant is cultivated in gardens to ſupply the markets. It may be propagated either by ſeeds, or by parting the roots: if you would propagate it by ſeeds, they ſhould be ſown in autumn ſoon after they are ripe, on a bed or border, in a ſhady ſituation; obſerving not to ſow the ſeeds too thick, nor ſhould they be covered too deep. In the ſpring the plants will appear, when they ſhould be carefully weeded; and if the ſeaſon ſhould prove very dry, they ſhould be now and then refreſhed with water, which will greatly promote their growth. Toward the beginning of may, if you find the plants come up too cloſe together, you ſhould prepare a moiſt ſhady border, and thin the plants carefully, leaving them about ſix inches aſunder: and plant thoſe which you draw up into the border about the ſame diſtance apart every way, being careful to water them duly, if the ſeaſon ſhould prove dry, until they have taken root; after which time theſe plants (as alſo thoſe remaining in the ſeed-beds) will require no other culture but to keep them clear from weeds; which may be eaſily effected, by hoeing the ground between the plants now and then in dry weather; and ſtirring the ground will be of great ſervice to the plants. The following autumn theſe plants ſhould be tranſplanted where they are deſigned to remain, which ſhould be in a rich moiſt ſoil and a ſhady ſituation, where they will thrive much better than if too much expoſed to the ſun, or in a dry ſoil, where they will require a conſtant ſupply of water in dry weather. Theſe plants muſt not be leſs than two feet diſtant every way. When they are rooted they require only to be kept clear from weeds; and in the ſpring, before they ſhoot, to have the ground gently dug between them, ſo as not to cut or bruiſe the roots. With this management they will continue ſeveral years, and produce ſeeds in plenty.

If you would propagate this plant by offſets, the roots ſhould be parted at Michaelmas, and planted in a ſhady ſituation, at the ſame diſtance as has been directed for the ſeedling plants, obſerving to water them until they have taken root, after which they muſt be managed as the ſeedlings.

[IMPERATORIA. See *Adonis*.]

INARCHING is a method of grafting, which is commonly called grafting by approach. This method is uſed when the ſtock intended to graft on, and the tree from which the graft is to be taken ſtand ſo near, or can be brought ſo near, that they may be joined together. The manner of performing it is this: take the branch you would inarch, and having fitted it to that part of the ſtock where you intend to join it, pare away the rind and wood on one ſide about three inches in length. After the ſame manner cut the ſtock or branch in the place where the graft is to be united, ſo that the rind of both may join equally together, at leaſt on one ſide, that the ſap may meet; then cut a little tongue upwards in the graft, and make a notch or ſlit in the ſtock downwards to admit it; ſo that when they are joined, the tongues will prevent their ſlipping, and the graft will more cloſely unite with the ſtock. Having thus placed them exactly together, tie them with baſs or other ſoft bandage, then cover the place with grafting clay, to prevent the air from drying the wound, or the wet from rotting the ſtock. Fix a ſtake in the ground, to which the ſtock or branch and graft ſhould be faſtened to prevent the wind from ſeparating them.

In this manner they are to remain about four months, in which time they will be ſufficiently united, and the graft may then be cut from the parent tree, obſerving to ſlope it off cloſe to the ſtock; and if at this time the joined parts be covered with freſh grafting clay, it will be of great ſervice to the graft.

This operation is always performed in april or may, that the graft may unite with the ſtock before the ſucceeding winter, and is commonly practiſed upon Oranges, Myrtles, Jaſmines, Walnuts, Firs, Pines, and ſeveral other trees, which will not ſucceed ſo well by common grafting or budding. But although I have mentioned Orange trees, yet I would by no means adviſe this practiſe where the trees are deſigned to grow large, which, by this method, they rarely ever will do; and it is chiefly practiſed on Oranges as a curioſity, to have a young plant with fruit upon it, in a year or two from ſeed, by inarching a bearing branch into a young ſtock; but theſe plants are ſeldom long-lived.

[INDIAN ARROW-ROOT. See *Maranta*.
INDIAN CORN. See *Zea*.
INDIAN CRESS. See *Tropæolum*.
INDIAN FIG. See *Cactus*.
INDIAN GOD TREE. See *Ficus*.
INDIAN MALLOW. See *Sida*.
INDIAN MILLET. See *Holcus*.
INDIAN OAK. See *Tectona*.
INDIAN REED. See *Canna*.
INDIAN SHOT. See *Canna*.
INDICUM and INDIGO. See *Indigofera*.
INDIGO, BASTARD. See *Amorpha*.]

INDIGOFERA. (*Bearing or yielding the blue dye called Indigo, or Indicum; from its native country India.*)
Lin. gen. n. 889. *Reich.* 962. *Schreb.* 1205. *Gærtn. t.* 148. *Juſſ.* 359.—Indigo. *Iſn. in mem. acad. par.*

Claſſ. 17. 4. Diadelphia Decandria.
Nat. order of *Papilionaceæ* or *Leguminoſæ*.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, ſpreading, nearly flat, five-toothed.

COR. papilionaceous. *Standard* rounded, reflex, emarginate, ſpreading.
Wings oblong, obtuſe, ſpreading at the inferior margin, of the ſhape of the ſtandard.
Keel obtuſe, ſpreading, deflex, marked on each ſide by an awl-ſhaped hollow dagger or point.

STAM. *Filaments* diadelphous, diſpoſed in a cylinder, aſcending at their tips. *Anthers* roundiſh.

PIST. *Germ* cylindric. *Style* ſhort, aſcending. *Stigma* obtuſe.

PER. *Legume* roundiſh, long: (linear-oblong, commonly four-cornered. *G.*)

SEEDS ſome, kidney-ſhaped; (kidney-retuſe or cuboid. *G.*)

ESSENTIAL CHARACTER.

Cal. ſpreading. *Keel* of the corolla with an awl-ſhaped ſpreading ſpur on each ſide. *Legume* linear.

SPECIES.

[1. Indigofera ſericea. *Silky-leaved Indigo.*
Lin. ſyſt. 677. *Reich.* 3. 516. *mant.* 271.
Leaves ſimple, lanceolate, ſilky, ſpikes ſeſſile, ſtem ſhrubby.

2. Indigofera oblongifolia. *Oblong-leaved Indigo.*
Vahl. ſymb. 1. 55. *Forſk. deſcr.* 137. *n.* 26.
Leaves ſimple, oblong, ſilky, racemes axillary, ſtem ſhrubby.

3. Indigofera linifolia. *Flax-leaved Indigo.*
Vahl. ſymb. 1. 55. *Retz. obſ.* 4. 29. & 6. 33. *n.* 61. *t.* 2.
Hedyſarum linifolium. *Linn. ſuppl.* 331. *ſyſt.* 672.
Leaves ſimple, linear, hoary, legumes globular.

4. Indigofera ovata. *Ovate-leaved Indigo.*
Lin. ſyſt. 677. *ſuppl.* 335.
Leaves ſimple, ovate, ſtem herbaceous.

5. Indigofera ſpinoſa. *Thorny Indigo.*
Vahl. ſymb. 1. 55. *Forſk. deſcr.* 137. *n.* 37.
Leaves ternate, obovate, peduncles ſpineſcent, ſtem ſhrubby.

6. Indigofera trifoliata. *Trifoliate Indigo.*
Lin. ſpec. 1062. *ſyſt.* 677. *Reich.* 3. 516. *amoen.* 4. 327.
Leaves ternate, flowers ſeſſile, lateral.

7. Indigofera pſoraloides. *Long-ſpiked Indigo.*
Lin. ſyſt. 677. *Reich.* 3. 517.
Cytiſus pſoraloides. *Lin. ſpec.* 1043. *amoen.* 6. *afr.* 33.
C. africanus. *Rivin. tetr. f.* 135.
Trifolium æthiopicum, &c. *Pluk. phyt. t.* 320. *f.* 3.
Leaves ternate, lanceolate, racemes very long, legumes drooping.

8. Indigofera candicans. *White Indigo.*
Ait. hort. kew. 3. 67. *Curt. magaz. t.* 198.
Leaves ternate, lanceolate-linear, ſilky underneath, ſpikes peduncled, few-flowered, legumes cylindric, ſtraight.

9. Indigofera amoena. *Scarlet-flowered Indigo.*
Ait. hort. kew. 3. 68.
Leaves ternate, oval, ſomewhat hairy, branches round, ſpikes

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[b] Wither. and Stokes.

ſpikes peduncled, ſtipules briſtle-ſhaped, calyxes looſe, ſtem fruteſcent.

10. Indigofera procumbens. *Proſtrate Indigo.*
Lin. ſyſt. 677. *Reich.* 3. 517. *mant.* 271.
Leaves ternate, obovate, ſtem herbaceous, proſtrate, ſpikes peduncled.

11. Indigofera ſarmentoſa. *Dwarf Indigo.*
Lin. ſyſt. 677. *ſuppl.* 334. *Ait. hort. kew.* 3. 68.
Leaves ternate, ovate, ſubſeſſile, peduncles axillary, two-flowered or thereabouts, ſtem proſtrate, filiform.

12. Indigofera denudata.
Lin. ſyſt. 677. *ſuppl.* 334.
Leaves ternate, ovate, ſmooth, racemes peduncled, longer than the leaf, ſtem ſhrubby, upright.

13. Indigofera mexicana.
Lin. ſyſt. 678. *ſuppl.* 335.
Leaves ternate, panicle branched into ſpikes, ſtem ſhrubby.

14. Indigofera trita.
Lin. ſyſt. 678. *ſuppl.* 335.
Leaves ternate, ovate, acute, racemes ſhort, ſtem upright.

15. Indigofera coccinea.
Lour. cochinch. 457.
Leaves ternate, ovate-oblong, peduncles many-flowered, axillary, legumes round, bowed.

16. Indigofera rotundifolia.
Lour. cochinch. 458.
Leaves ternate, roundiſh, tomentoſe on both ſides, racemes ſhort, axillary, ſtem twining.

17. Indigofera bufalina.
Lour. cochinch. 458.
Leaves ternate, ovate, ſmooth, racemes axillary, legumes thick, villoſe, ſtem climbing.

18. Indigofera filiformis.
Lin. ſyſt. 678. *ſuppl.* 334.
Leaves quinate, oblong, villoſe, flowers in ſpikes, peduncled, peduncles and branches filiform, ſtem upright.

19. Indigofera coriacea. *Leathery-leaved Indigo.*
Ait. hort. kew. 3. 68.
Ononis mauritanica. *Lin. mant.* 267. *Reich. ſyſt.* 3. 433.
Lotus mauritanicus. *Lin. ſpec.* 1091.
L. fruticoſus. *Berg. cap.* 226.
Leaves quinate, obovate, mucronate, hairy; ſtipules awl-ſhaped, legumes ſtraight, ſmooth.

20. Indigofera digitata.
Lin. ſyſt. 678. *ſuppl.* 335.
Leaves digitate, racemes peduncled, ſtem ſhrubby.

21. Indigofera ſtricta.
Lin. ſyſt. 678. *ſuppl.* 334.
Leaves pinnate, ſmooth, oblong, racemes axillary, ſcarcely peduncled, ſtem ſhrubby, upright.

22. Indigofera fruteſcens.
Lin. ſyſt. 678. *ſuppl.* 334.
Leaves pinnate, ovate, ſmooth, racemes axillary, peduncled, ſtem ſhrubby, upright.

23. Indigofera cytiſoides. *Angular-ſtalked Indigo.*
Lin. ſyſt. 678. *Ait. hort. kew.* 3. 68.
Pſoralea cytiſoides. *Lin. ſpec.* 1076. *Comm. hort.* 2. 167. *t.* 84. (Lotus). *Pluk. phyt.* 185. *f.* 5. (Geniſta).
Leaves quinate-pinnate and ternate, racemes axillary, ſtem ſhrubby.

24. Indigofera fragrans.
Retz. obſ. 4. 29. *n.* 97.
Colutea ſiliquoſa. *Pluk. phyt. t.* 166. *f.* 1.
Leaves quinate, pinnate, leaflets ovate, hairy, the outmoſt larger, legumes four-cornered.

25. Indigofera enneaphylla. *Trailing Indigo.*
Lin. ſyſt. 678. *Reich.* 3. 517. *mant.* 272. 571. *Retz. obſ.* 4. 29. *n.* 98.
Hedyſarum proſtratum. *Lin. mant.* 102.
Leaves pinnate, wedge-ſhaped, in ſevens, ſtems proſtrate, ſpikes lateral.

26. Indigofera ſemitrijuga.
Vahl. ſymb. 1. 56. *Forſk. deſcr.* 137.
I. argentea. *Burm. ind.* 171.
Leaves pinnate, obcordate, in fives, legumes ſubſpiked, pendulous, toruloſe, ſtem proſtrate, ſuffruticoſe.

27. Indigofera pentaphylla. *Five-leaved Indigo.*
Lin. ſyſt. 678. *Reich.* 3. 518.
Leaves pinnate, oval, in fives, ſtems proſtrate, peduncles two-flowered.]

28. Indigofera glabra. *Smooth Indigo.*
Lin. ſpec. 1062. *ſyſt.* 678. *Reich.* 3. 518. *fl. zeyl. n.* 274. *amoen.* 1. 408.
Leaves pinnate and ternate; obovate, racemes very ſhort, legumes horizontal, columnar.

29. Indigofera hirſuta. *Hairy-leaved Indigo.*
Lin. ſpec. 1062. *ſyſt.* 678. *Reich.* 3. 519. *amoen.* 1. 408. *fl. zeyl. n.* 272. *Burm. zeyl.* 37. *t.* 14. (Aſtragalus). *Rheed. mal.* 1. 55. *t.* 30.
I. indica. *Mill. dict. n.* 4. *Reich.*
Leaves pinnate, hirſute; ſtem upright; flowers in ſpikes, legumes pendulous, woolly.

[30. Indigofera ſpicata. *Spiked Indigo.*
Vahl. ſymb. 1. 56. *Forſk. deſcr.* 138.
Leaves pinnate, obovate, flowers in ſpikes, legumes columnar, toruloſe, pendulous, ſtem decumbent.

31. Indigofera anguſtifolia. *Narrow-leaved Indigo.*
Lin. ſyſt. 678. *Reich.* 3. 519. *mant.* 272.
Leaves pinnate, linear, racemes elongated, ſtem ſhrubby.]

32. Indigofera Anil. *Wild Indigo.*
Lin. ſyſt. 678. *Reich.* 3. 520. *mant.* 272. *Brown. jam.* 302. 3.
I. ſuffruticoſæ. *Mill. dict. n.* 2.
Colutea fruticoſa argentea, &c. *Sloan. jam.* 2. 37. *t.* 176. *f.* 3.
Leaves pinnate, lanceolate, racemes ſhort, ſtem ſuffruticoſe.

33. Indigofera tinctoria. *Dyer's Indigo.*
Lin. ſpec. 1061. *Reich.* 3. 520. *fl. zeyl. n.* 273. *amoen.* 1. 408. *hort. upſ.* 208. *cliff.* 487. *mat. med.* 174. *Thunb. jap.* 290. *Lour. cochinch.* 458. *Brown. jam.* 302. 1. *Mill. fig. t.* 34. *Blackw. t.* 596.
Indicum. *Plin. l.* 35. *c.* 6. *ſ.* 27. *Rumph. amb.* 5. 220. *t.* 80.
Iſatis indica, fol. roſmarini, glaſti affinis. *Bauh. pin.* 113.
Anil. *Garc. arom. l.* 2. *c.* 26. *p.* 239.—ſ. Nil. inodorum color. *Bauh. hiſt.* 2. 945.—ſ. Indigo americana. *March. act. par.* 1718.
Nil ſ. Anil, Glaſtum indicum. *Park. theat.* 600. *Raii hiſt.* 926.
Ameri. *Rheed. mal.* 1. 101. *t.* 54.
Colutea indica humilis, ex qua Indigo, fol. viridi. *Burm. zeyl.* 69.
Coluteæ affinis fruticoſa, &c. *Sloan. jam.* 2. 34. *t.* 179. *f.* 2.
Leaves pinnate, obovate, racemes ſhort, ſtem ſuffruticoſe.

[34. Indigofera diſperma.
Lin. ſyſt. 678. *Reich.* 3. 520. *Trew. Ehret.* 24. *t.* 55.
Leaves pinnate, oval, racemes elongated, legumes two-ſeeded.

35. Indigofera argentea. *Silvery-leaved Indigo.*
Lin. ſyſt. 678. *Reich.* 3. 521. *mant.* 273. *L'Herit. ſtirp. nov.* 6. *p.* 165. *t.* 79. *Vahl. ſymb.* 1. 56.
I. articulata. *Gouan. illuſtr.* 49. *Zan. hiſt. t.* 12. *p.* 18.
I. tinctoria. *Forſk. deſcr.* 138.
Leaves ternate and pinnate, obovate, ſilky, legumes toruloſe, pendulous.

DESCRIPTIONS, *&c.*

At the end of the laſt century it was not known in Europe with certainty what plant produced the dye which was known to the Romans by the name of *Indicum*, and was ſo much uſed as a dye, &c. under the name of Indigo. It was cultivated, however, by Mr. Miller ſo early as the year 1731. Only five ſpecies were imperfectly known to Linneus in 1763: and Mr. Miller has only the ſame number in the laſt edition of his Dictionary. Twenty-three ſpecies are enumerated in the fourteenth edition of the Syſtema Vegetabilium by Chevalier Murray: and our catalogue contains thirty-five ſpecies.

The Indigos are ſhrubs, underſhrubs or herbs. The leaves are in ſome few caſes ſimple, in more ternate, in moſt unequally pinnate, the leaflets in ſome jointed and awned at the baſe, as in *Phaſeolus*. Stipules diſtinct from the petiole. Peduncles axillary, one or two-flowered, but more frequently many-flowered, in ſpikes or racemes. Legume ovate, ſhort, (two-ſeeded in I. enneaphylla.) The herb in moſt of the ſpecies yields a blue dye[a]: which, however, is not peculiar to this genus; for many plants of this natural claſs abound with the ſame blue-colouring matter.

1. Stems determinately branched or proliferous, filiform, rugged with ſcars, with leafy branchlets. Leaves cluſtered, ſhort, acute, pubeſcent; varying, with the edge naked and coloured. Spike terminating, ovate, villoſe, with bractes the length of the calyxes between the flowers. Keel of the corolla ſhorter than the other petals, dark purple, with a long claw, and on each ſide a ſpur. Native of the Cape of Good Hope[b].

2. This is a ſhrub, with tomentoſe-ſilky branches. Leaves ſubſeſſile, remote. Rudiments of branchlets in the axils. Stipules minute, briſtle-ſhaped. Racemes three times as long as the leaf. Flowers numerous. Calyx ſilky-tomentoſe. Standard of the corolla very finely villoſe[c].

3. Stem ſhort, upright. Branches elongated, ſlender, rod-like, decumbent, angular, finely villoſe. Leaves alternate, blunt, with a ſhort point, quite entire, keeled, on ſhort petioles, clothed with ſhort white hairs preſſed cloſe to them. Flowers three or four, on ſhort pedicels in the axils of the leaves, red. Calyx five-cleft; ſegments acute, ciliate, ſpreading. Standard of the corolla cordate, acute, flat, bent back at an acute angle: wings bent down, flat, ovate, blunt, longitudinally incumbent on the keel, with their upper margins: keel the ſame length with the ſtandard, boat-ſhaped, compreſſed, green on the outſide and hairy, putting forth a ſharp elongated tooth at the middle of each ſide. Fruit globular, crowned with the ſtyle, ſnow-white, one-ſeeded[d].

Native of the Eaſt Indies, where it was obſerved by Koenig, who ſent it to Europe together with the ſeeds under this name, though it is deſcribed as a Hedyſarum by the younger Linneus in his Supplement. It has, however, the ſpur on each ſide of the keel, which determines it to be an Indigofera, nor has it the habit of the Hedyſarums; according to the remark of Vahl, who cultivated it at Copenhagen.

4. This was found at the Cape of Good Hope by Thunberg[e].

5. This is a ſhrub with an aſh-coloured bark, and very much branched. Branches attenuated, cut off at top, leafleſs, very thorny; ſpineſcent from the permanent peduncles: branchlets leafy, ſcattered on the older branches, ſhort. Leaves on very ſhort petioles; leaflets ſeſſile, hoary, equal, minute. Stipules aceroſe, minute. Peduncles from almoſt all the axils, permanent and becoming thorns, double the length of the leaf, bearing two or three flowers. Calyx villoſe, five-cleft. Standard of the corolla aſh-coloured on the outſide. Legumes ſomewhat columnar, villoſe. Native of the Eaſt Indies and Arabia[f].

6. Legumes linear, reflex, four-cornered with two oppoſite ſides broader than the two others[g]. Native of the Eaſt Indies.

7. Stem perennial, angular, with three ribs occaſioned by the petioles running down it, and ſomewhat rugged. Peduncle angular, longer than the leaves in a many-flowered raceme; pedicels very ſhort. Bractes caducous. The upper teeth of the calyx more divaricate than in the others. Corollas red: wings horizontal, converging with their upper margins; the keel has an awl-ſhaped, concave reflex tooth in the middle on each ſide. Germ channelled: ſtyle purple: ſtigma blunt. Seeds many[h].

Native of the Cape of Good Hope. Cultivated by Mr. Miller in 1758. It flowers from july to ſeptember[i].

Perhaps this may be the glabra of Miller; which, as far as we can judge, is not the glabra of Linneus.

In the Amoenitates Academicæ it is deſcribed under the name of *Cytiſus pſoraloides*, as a ſhrub a foot high, with awl-ſhaped ſtipules; the leaves petioled, the leaflets all ſeſſile, lanceolate, almoſt naked; the ſpikes peduncled, upright, the calyxes pubeſcent, the flowers cloſely reflex.

8. This ſpecies is diſtinguiſhed by the whiteneſs of the ſtem and the under-ſide of the leaves. The flowers are red, not many (five to eight or nine) in a ſpike[k]. Native of the Cape of Good Hope, whence it was introduced by Mr. Fr. Maſſon in 1774. It flowers from july to ſeptember[l]: but its principal time of flowering, according to Mr. Curtis, is from the beginning of may to the middle of june.

9. This alſo is a native of the Cape, and was introduced by the ſame perſon at the ſame time. It flowers in march and april[m].

10. Stems a foot long, ſomewhat angular, almoſt naked. Leaves alternate, petioled, remote: leaflets equal, ſubmucronate, ſcarcely pubeſcent on the upper ſide, but more pubeſcent underneath, and paler: petiole ſpreading, the length of the leaflets. Stipules awl-ſhaped, patulous, ſhorter than the petioles. Spike axillary, lateral, oblong, without bractes. Peduncle many times longer than the leaves. Flowers dark purple. Native of the Cape of Good Hope[n].

11. This was found at the Cape by Thunberg, and alſo by Maſſon, who introduced it at Kew in 1786. It flowers in june[o].

12. This alſo was found at the Cape by Thunberg.

13. This is a ſhrub, with rufeſcent, pubeſcent branches. Leaves remote, petioled: leaflets ovate, naked, almoſt equal, ſubſeſſile. Stipules ovate, minute. Panicle terminating, compoſed of eight or nine peduncled ſpikes. Found in New Granada by Mutis[p].

14. Stem upright, green, having the appearance of I. Anil, branched at bottom. Leaves petioled. Racemes lateral, ſhorter than the leaves, upright, red, like thoſe of I. Anil. Native of the Eaſt Indies[q].

15. Stem ſhrubby, manifold, almoſt upright, branched. Leaves blunt, pubeſcent, ſmall. Calyx five-cleft, with the upper edge cut off, gaping. Corolla ſcarlet, with two long reflex ſpurs to the keel. Legume long, ſlender. Native of China about Canton.

16. Stem herbaceous, filiform, hairy. Leaves ſharpiſh at the tip. Stipules awl-ſhaped. Corollas yellow, with two long, awl-ſhaped, curved ſpurs to the keel. Legume oblong, flat, acuminate, ſmooth, two-ſeeded. It is allied to I. procumbens (n. 10.) Native of China about Canton.

17. Stem ſuffruticoſe, round, long, ſmooth. Flowers in both axillary and terminating racemes, on a long common peduncle. Calyx two-lipped, five-cleft, ſpreading. Corolla white-purple, with the keel repelling the ſtandard by two callous teeth put forth above the baſe. Legume long, ſtraight, ſomewhat compreſſed. Seeds ovate. Native of Cochinchina[r].

18. Found at the Cape of Good Hope by Thunberg[s].

19. In Linneus's ſpecies plantarum this plant is deſcribed under the name of *Lotus mauritanicus*, as a ſmall ſhrub, with filiform rigid branches. Leaves petioled, with white hairs ſcattered over both ſides. Stipules the ſize of the leaves, lanceolate-ovate. Peduncles axillary, long, racemed. Legumes half as long again as the leaves. In the Mantiſſa, it was removed to the genus *Ononis*, and now in the Catalogue of the Royal Garden at Kew into this genus.

Native of the Cape of Good Hope. Introduced in 1774, by Mr. Francis Maſſon. It flowers in july and auguſt[t].

20, 21, 22. Theſe were found at the Cape of Good Hope by Thunberg[u].

23. This is thus deſcribed, as a ſpecies of Pſoralea, by Linneus, in his Species Plantarum. Shrubby, with angular branches. Lower leaves ternate, upper quinate-pinnate: leaflets oblong, hoary, mucronate, almoſt equal. Stipules awl-ſhaped; with two little briſtles at the baſe of the leaflets. Racemes longer than the leaves, with ovate, mucronate, deciduous bractes. Calyx a little ſhorter than the corolla. Standard of the

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[a] Juſſieu.
[b] Linn. mant.
[c] Vahl.
[d] Retzius.
[e] Linn. ſuppl.
[f] Vahl.
[g] Linn. ſyſt.
[h] Ibid.
[i] Hort. kew.

[k] Curtis.
[l] Hort. kew.
[m] Ibid.
[n] Linn. mant.
[o] Linn. ſuppl. and Hort. kew.
[p] Linn. ſuppl.
[q] Ibid.
[r] Loureiro.
[s] Linn. ſuppl.
[t] Hort. kew.
[u] Linn. ſuppl.

corolla upright. Legume ſubcylindric, with iſthmuſes ſeparating the ſeeds.

Native of the Cape of Good Hope. Introduced in 1774 by Mr. Francis Maſſon. It flowers in july.

24. Stems round, ſomewhat hairy. Leaflets hairy on both ſides, the end one obovate and larger than the others. Stipules lanceolate, acute, rough-haired. Peduncles longer than the leaf, axillary, bearing from three to five flowers. Calyxes white with hairs. Corollas red. Legumes linear, ſquare. Found in the Eaſt Indies by Koenig[x].

25. Plant depreſſed to the ground. Stems ſeveral, round, even, a palm in length, with the lower branches depreſſed. Leaves alſo depreſſed, ſpreading; leaflets ſeven, (ſometimes five or nine) alternate, bluntiſh, channelled; even, (frequently retuſe, ſmooth above, but have imbricate, tomentoſe, or aſh-coloured hairs underneath. Stipules membranaceous, patulous, bifid: *mant.* 1. 102.). Spikes axillary, ſeſſile, roundiſh. Calyx almoſt five-parted; the parts lanceolate-awl-ſhaped. Corolla dark purple, with the back of the ſtandard paler, and recurved little horns to the keel[y]. Legumes ovate-cylindric, even, equal, mucronate with the ſtraight piſtil. Seeds two[z]. Native of the Eaſt Indies.

It is twice deſcribed in the Mantiſſas under this name and that of Hedyſarum proſtratum[a].

26. This is a ſmall ſhrub, with round, ſimple branches, villoſe-hoary, as is the whole plant. Leaflets ſeſſile, mucronate; the end one larger. Stipules linear. Spikes axillary, longer than the leaves. Flowers ſomewhat remote, commonly from eleven to thirteen. Legumes oblong, ſmall, two-ſeeded. It reſembles the twenty-fifth and twenty-ſeventh in many circumſtances, but is ſufficiently diſtinct from both. Native of the Eaſt Indies and Arabia[b].

27. Herb depreſſed, extremely divaricate. Flowers red. It reſembles *I. enneaphylla* very much, but the peduncles are two-flowered, and the plant is double the ſize. Its native place is not mentioned[c].

28. This is an annual plant, with ſmooth leaflets, the end one larger[d]: generally five, ſeldom three. The ſtem alſo is ſmooth. Peduncles axillary, having frequently three alternate flowers. Legumes bent back at a right angle, with the peduncle horizotnal[e]. Native of the Eaſt Indies.

29. Stem lofty, hairy. Leaflets ſeven, obovate, remote, the end one larger. Stipules briſtle-ſhaped, an inch long. Spikes upright, longer than the leaves, axillary, very hirſute. Calyxes and legumes woolly, pendulous. Petals caducous[f]. Native of the Eaſt Indies.

30. Stem herbaceous, villoſe. Leaflets nine, ſubpetioled, villoſe, the end one larger. Stipules lanceolate-awl-ſhaped, dry. Spikes longer than the leaves, thrice the ſize when in fruit. Legumes villoſe. The preceding differs from this, in having an upright ſhrubby ſtem, briſtle-ſhaped ſtipules, and extremely hirſute four-cornered legumes. Native of Arabia[g].

31. Stem ſuffruteſcent, ſomewhat even; branches alternate, the length of the ſtem. Leaves alternate, ſubſeſſile; leaflets nine or eleven, equal, acute, ſubpubeſcent, rolled back at the edge. Stipules aceroſe, minute. Racemes axillary, lateral, much longer than the leaves. Calyxes alternate, hoary. Corolla aſh-coloured purple on the outſide: keel with ſpurs[h].

Native of the Cape of Good Hope. Introduced in 1774, by Mr. Francis Maſſon. It flowers from june to october[i].

32. This has the habit and appearance of the next ſpecies. Leaflets oblong, bluntiſh, (the younger ones ſharpiſh) naked above, hoary underneath, all equal. Racemes lateral, ſubſpiked, ſhorter than the leaves. Legumes declining, recurved, inclined to columnar, many-ſeeded, more gibbous at each ſuture (opening by the receding of the upper ſuture) mucronate[k].]

Mr. Miller ſays, it grows to the height of five or ſix feet (if this be his *ſuffruticoſa*); and that being a much larger plant, it will afford a greater quantity of Indigo from the ſame compaſs of ground than any of the other ſpecies, eſpecially if cut before the ſtalks grow woody; it will alſo grow on poorer land.

[Native of the Eaſt Indies; and very common in Jamaica, growing wild in all the Savannahs, where doubtleſs it had been cultivated in former times: for there, we often meet with ſome of thoſe Indigo-works, which were then built, and remain very perfect to this day. It is hardier than any of the other ſorts, and grows very luxuriantly even in the dryeſt Savanna lands; but it does not yield ſo much pulp; the dye, however, that is extracted from it, is generally the beſt, of a fine copperiſh caſt, and a cloſe grain[l].

33. This differs from the preceding, in the leaflets being obovate, blunt, naked on both ſides; the legumes columnar, ſtraight, but more gibboſe at the ſuture, as in that, and ſubtoruloſe, in looſe minute racemes[m].

Thunberg deſcribes it thus. Stem filiform, ſubflexuoſe, angular, ſmooth, upright, a foot and half high, a little branched at top. Branches like the ſtem, alternate, upright. Leaflets in four pairs or more, very blunt with a point, ſmooth, very finely villoſe underneath, almoſt equal. Racemes from the axils of the leaves, when they begin to flower much ſhorter than the leaf, but becoming longer as they advance. Legumes drooping, ſubcolumnar, ſharp, ſtraight, very finely villoſe.

Specimens of this plant from different parts of India, Madagaſcar, Java, Ceylon, &c. vary very much, if they are all really the ſame ſpecies. The ſtem is higher or ſhorter, more or leſs hairy or ſmooth; the leaves have from four or five to eight pairs of leaflets, larger or ſmaller, more or leſs villoſe; the legumes are ſtraight or bowed, villoſe or ſmooth[n].

Linneus, in his flora zeylanica ſays, that the leaves have nine or eleven pairs of leaflets, which are green; and that it is almoſt an exotic in Ceylon, but frequent in Paliacotta and Coromandel.

According to Loureiro it is ſpontaneous in China and Cochinchina, and is cultivated all over thoſe vaſt Empires.—He thus deſcribes it. Stem upright, ſimple, three feet high, ſtraight, columnar, ſmooth, branched. Leaves compoſed of about ſeven pairs of leaflets, which are ovate, quite entire, ſmooth, glaucous, on ſhort petioles. Racemes axillary, ſimple, upright. Calyx flattiſh, ſlightly five-cleft. Standard of the corolla oblong-ovate, aſcending, yellow; wings and keel red, the latter having a tooth on each ſide at the baſe. Legume long, ſlender, round, ſlightly bowed and toruloſe, ſmooth, pendulous, containing ſeveral cylindrical ſeeds.

Dr. Patrick Browne, beſides the Wild Indigo already mentioned, has two others which he calls the Indigo, and the Guatimala Indigo. The former ſeldom above two feet and a half in height, and ſeeming to divide rather than to branch in its growth: the latter commonly three or four feet high, throwing out many ſuberect branches as it riſes. This is much hardier, and affords a finer pulp, but it does not yield ſo great a quantity, and is only cultivated where the ſeaſons are not ſo certain, or in mixt fields. The former yielding more of the dye than either of the others, is generally preferred, though ſubject to many more miſchances.

Mr. Miller cultivated the Dyer's Indigo ſo long ago as the year 1731[o].] He calls it Guatimala Indigo, and ſays it is an annual plant with us. [He has five ſorts in all, but not having deſcribed them, we are in ſome degree uncertain what ſpecies he intended. His ſuffruticoſa (n. 2.) is probably our thirty-ſecond ſpecies, *I. Anil.* His indica (n. 4.) is ſuppoſed to be our twenty-ninth ſpecies, or *I. hirſuta.* His glabra (n. 5.) may poſſibly be the ſame with the *glabra* of Linneus; but as he only ſays it has ſmooth taper pods, and trifoliate leaves, we cannot determine it with any certainty. His I. caroliniana (n. 3.) cannot be the I. tinctoria or true Dyer's Indigo, if the leaves have five leaflets only, and the flowers are in very long, looſe ſpikes; but it is probably the ſame with one of the ſorts commonly cultivated in the Weſt Indies, which are not originally natives there, but tranſported from the Eaſt Indies.

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[x] Retzius.

[y] Linn. mant. 2. 272.

[z] Mant. 1. 102.

[a] Retzius.

[b] Vahl.

[c] Linn. ſyſt.

[d] Ibid.

[e] Linn. zeyl.

[f] Linn. ſyſt. & zeyl.

[g] Vahl.

[h] Linn. mant.

[i] Hort. kew.

[k] Linn. mant.

[l] Browne.

[m] Linn.

[n] Thunb. jap.

[o] Hort. kew.

The ancients were acquainted with the dye which we call Indigo, under the name of *Indicum*. Pliny knew that it was a preparation of a vegetable ſubſtance, though he was ill informed both concerning the plant itſelf, and the proceſs by which it was fitted for uſe. From its colour, and the country from which it was imported, it is denominated by ſome authors *Atramentum Indicum*, and *Indicum nigrum* [p].

Even at the cloſe of the ſixteenth century it was not known in England what plant produced Indigo. For in the Remembrances for maſter S. by Richard Hakluyt in 1582, he was inſtructed "to know if "*Anile*, that coloureth blew, be a natural commodity "of thoſe parts (Turkey), and if it be compounded "of an herbe—to ſend the ſeed or root, with the "order of ſowing, &c.—that it may become a na"tural commodity in the realme, as *Woad* is, that "the high price of foreign Woad, may be brought "down [q]."

Gerarde, in 1597, is wholly ſilent about it, and ſo is Johnſon in 1632. Parkinſon however, in 1640, treats largely of it. He calls it *Indico* or *Indian Woade*, and gives a figure of the leaf from De Laet. He then deſcribes it, firſt from Francis Ximenes in De Laet's deſcription of America: and ſecondly, from Mr. William Finch, a London Merchant, in Purchas's Pilgrims. (B. 4. C. 4. p. 429.)

Even in 1688, Mr. Ray ſays, it was not agreed among botaniſts, what plant it is from which Indigo is made; but that the moſt probable opinion was, that it is a leguminoſe ſhrub, allied to Colutea. He deſcribes it from Hernandez and Marcgraaf; and ſubjoins that of the *Ameri* from the Hortus Malabaricus. *Nil* or *Anil* is the American name. It is *Nile* alſo in Arabic. The Portugueze have adopted their *Anil* or *Anileira* from the American. The other European nations generally call it *Indigo*. In Chineſe it is *Tien Laam*, which ſignifies Sky Blue.

Method of manufacturing Indigo in the Weſt Indies.

The works for ſteeping and fermenting the Indigo conſiſt of three or five ſquare ciſterns or vats, well cemented, terraſſed and ſeaſoned. They are made gradually ſmaller, and ſo ſituated as to have the top of the ſecond and third on a line with the bottom of the firſt, or a little lower; and the top of the fourth and fifth on a line with, or lower than, the bottom of the ſecond and third. The firſt is called the *Steeper*, and is generally made about eight or ten feet ſquare, by four deep, and opens into the ſecond and third by round holes, made cloſe to the bottom, ſo as to diſcharge all the tincture readily. The ſecond, or ſecond and third vats are called the *Beaters*. If there be only one, and the liquor is to be worked up with hand buckets, it ſhould be eight or ten feet ſquare, and ſix feet deep: but if there be two, and the tincture is to be beaten with an engine, they ſhould be ſo deep as to hold all the liquor a good way below the main or horizontal axis into which the buckets are fixed; and the walls ſhould be nearly as high over the rollers, as the ciſtern is deep below them, to prevent the tincture from being waſted. After the liquor is well beat, it is left to ſettle; and when the pulp is depoſited, the clear fluid is drawn off by a vent placed ſome inches above the bottom of each ciſtern: and the remainder is diſcharged into the fourth and fifth ciſterns, by convenient outlets, placed cloſe to the bottom. Theſe laſt ciſterns are ſmall; they are however generally made ſquare, and proportioned to the quantity of pulp ſuch works commonly produce at a time.

Theſe works being in good order, and the plants cut and carried to them, they are laid in the ſteeper, and when that is pretty full, boards are laid over them, ſupported by props, from the beams that overlay the ciſtern: theſe being well ſettled, they put in as much water as will cover the weed, and leave it to digeſt and ferment, until the greateſt part of the pulp is extracted; without letting the tender tops run to putrefaction. In the management of this point the judgment of the planter chiefly conſiſts; for if he draws off the water but two hours too ſoon, he loſes the greateſt part of the pulp; and if the fermentation runs but two hours too long, the whole is ſpoiled. They frequently therefore draw out a handful of the weed, and when they find the tops grow very tender and pale, and obſerve the ſtronger leaves to change their colour to a leſs lively pale, they draw off the liquor without delay. They ſoon learn to know this critical point, by the height of the fermentation, and grain of the tincture; of which they frequently beat a little in a ſilver cup, for that purpoſe.

The pulp being thus extracted, the tincture is diſcharged into the beaters, and there worked up by two or three negroes, each with a bucket, (or by an engine.) They agitate it, until the dye begins to granulate, or float in little floculæ in the water; which ſeparation is greatly forwarded by a gradual addition of clear lime water. The different ſtages of this operation are diſtinguiſhed, by examining a ſmall quantity of the liquor in a ſilver cup, from time to time; and a little experience ſoon learns them to know when to ſtop by a ſingle drop upon the nail at any degree of height, as they would have their Indigo of a deep copperiſh blue, or of a paler colour.

The liquor is now left undiſturbed, until the floculæ ſettle; then the water is diſcharged, and the magma or mud is let out by a lower vent into its proper receptacles. This is again, by ſome, put into a cauldron, and heated over a gentle fire, but not ſo as to boil, and then emptied into little bags to drain: by others it is not heated, but immediately put into the bags: by all, it is afterwards put into ſquare boxes, with the ſides not above four inches deep, that it may dry the ſooner, and without crumbling, which it is otherwiſe apt to do [r].

34. This reſembles the preceding, but the racemes are longer than the compound leaves, and the legumes are two-ſeeded [s]. The ſtem is weak, the leaflets oblong, pale green and ſmooth, the peduncles very long, and the flowers looſely diſpoſed; the legumes compreſſed, ſhort and roughiſh [t].

Native of the Eaſt Indies.

35. The whole plant is ſilky and glaucous. Stem ſuffruticoſe, upright, branched, round, from half a yard to three quarters of a yard in height, and gray. Branches alternate, ſtiff, round, finely ſilky and hoary. Leaves alternate, petioled, two-paired (ſeldom ternate), ſpreading, three inches long: leaflets oppoſite, ſubſeſſile, (the end one larger and petioled); quite entire, bluntiſh, the older ones ſubemarginate, the midrib raiſed only underneath; finely ſilky, glaucous, ſpreading, flat, from twelve to fifteen lines in length, and from ſix to eight lines in breadth. Petioles round on one ſide, grooved on the other. Racemes axillary, ſolitary, upright, ſhorter than the leaves, an inch and half long. Flowers on ſhort, alternate, reflex pedicels, drooping. Calyx wheel-ſhaped, five-cleft, acute, pubeſcent, the two upper teeth more remote. Corolla blood-red-purple: petals nearly equal, larger than the calyx: ſtandard roundiſh, reflex, concave, pubeſcent on the outſide, ſeſſile; wings oblong, blunt, on ſhort claws, looſe; keel two-petalled, clawed, ovate, compreſſed, ſcarcely ſhorter than the wings, with a proceſs at the baſe on each ſide filling up the cavity left by the wings, pubeſcent on the outſide. Filaments connected very high up, ſcarcely longer and ſhorter alternately, and very little ſhorter than the keel: anthers roundiſh, acuminate, two-celled, larger on the longer filaments. Legume columnar, jointed in a manner, like a necklace, tomentoſe, hoary, ſix lines in length. Seeds few (three or four), ſeparated by membranes, roundiſh, bay-coloured [u].

Gouan deſcribes the ſtem as three feet high and angular, ſtrigoſe with crowded hairs preſſed to it, and rugged when handled from above downwards. The branches alſo are angular. The lower ſtem-leaves and the inner branch-leaves are ſimple, obovate and aſh-coloured, rugged with hairs preſſed cloſe, on petioles equal to the leaf: the other leaves to the middle of the ſtem and branches are ternate, with ovate leaflets, acuminate both ways, the outmoſt larger than the two others: thoſe which terminate the ſtem and branches are like the others, but quinate. Petioles equal to the leaflets, three-ſided at the baſe, their edges and midrib running down the ſtem and branches, ſo that the branches ſeem to be three-ſided a little below the baſe of the petioles. Racemes an inch long, from the axils of the ternate and quinate leaves. Flowers in each raceme from nine to twelve, purple, very ſmall as in *I. tinctoria*. Legume cylindric, jointed or knobbed at the ſeeds; joints globular, the outmoſt mucronate. Seeds one, two or three, ſubglobular, not cylindric, flat at top and bottom, as in *I. tinctoria*. Linneus ſays, that the legumes have uſually three ſeeds in them. According to him it is a native of the Eaſt Indies. Monſ. L'Heritier ſays, it is a native of Egypt, and that he had the ſeeds from Alexandria by Jean Baptiſte Mure, Conſul-general in Egypt, in the year 1783: and that he had ſince been informed by Profeſſor Louiche Desfontaines that it is cultivated abundantly in the kingdom of Tunis for dyeing, but is not indigenous there. The Arabs call it *Hab-nil.*

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[p] Robertſon's India, p. 353.

[q] Voyages 2. 161 edit. 1599.

[r] Browne.

[s] Linn.

[t] Trew Ehret.

[u] L'Heritier.

Whether the plant deſcribed by Monſ. L'Heritier and Monſ. Gouan be the ſame is not quite certain. The former refers to Linneus's mantiſſa; and Vahl, who refers to Gouan, refers alſo to the ſame work of Linneus's. Linneus himſelf refers to the *ſuffruticoſa* of Miller, *n.* 2. and Sloan's Jamaica, *t.* 176. *f.* 3. for which ſee *n.* 32.

In the Kew catalogue, *I. argentea* is ſaid to be a native of the Weſt Indies, and to have been introduced in 1776, by Mr. Gilbert Alexander.

General Remarks.

There is much confuſion in the ſpecies yet to be cleared up: and we are yet uncertain whether the plants cultivated in different countries for dyeing, be really diſtinct ſpecies or only varieties. Gærtner has a ſpecies which he received from our Hudſon, and calls *Ind. ſumatrana,* but he gives no ſpecific difference.

An attention to the following circumſtances, will aſſiſt in diſcriminating the ſpecies already known.

Shrubby. 1, 2. 5. 7. 8, 9. 12, 13. 15. 19 to 23. 29.
Suffruticoſe or Underſhrubby. 17. 26. 31 to 35.
Herbaceous. 3. 4. 10, 11. 16. 25 to 28. 30.
Moſt of theſe are perennial, but 3 *and* 28 *are annual.*
Leaves ſimple in 1. 2. 3. 4.
ternate in 5 to 17.
pinnate in the reſt.
Of theſe laſt, ſome are quinate, or have only two pairs of leaflets, beſides the odd one: as 18, 19. 24. 26, 27.
In 23. 28 *and* 35. *ſome of the leaves are quinate and others ternate.*
The twentieth ſpecies has digitate leaves.
Stipules minute, briſtle-ſhaped, in 2 and 29.
minute, aceroſe, in 5 and 31.
minute, ovate, in 13.
lanceolate-ovate, in 19.
lanceolate-acute, in 24.
lanceolate-awl-ſhaped, in 30.
awl-ſhaped, in 7. 10. 16. 23.
linear, in 26.
bifid, in 25.
Infloreſcence generally in a ſpike or raceme.
Spike. 1. 8 to 10. 18. 25, 26. 29, 30.
Raceme. 2. 7. 12. 14. 16, 17. 19 to 23. 28. 31 to 35.
Panicle. 13.
On axillary peduncles:
Two-flowered. 27.
Two or three-flowered. 5. 11.
Three or four-flowered. 3.
Many-flowered. 15.
Axillary ſeſſile. 6.
Bractes in moſt of the ſpecies: except 10.
Caducous, in 7.
Deciduous, ovate-mucronate, in 23.
Length of the calyx, in 1.
Colour of the corolla, moſtly red or purple:
Red. 3. 5. 7, 8. 14. 24. 27. 33.
Red purple. 35.
Dark purple. 1. 10. 25.
Very pale purple. 17. 33.
Aſh-coloured purple. 31.
Scarlet. 9. 15.
Yellow. 16.

The plants are unarmed, or without thorns and prickles, except in n. 5. which is thorny.

PROPAGATION AND CULTURE.

The ſpecies firſt known in Europe are natives of the Eaſt Indies, and may be propagated by ſeeds.] The ſeeds muſt be ſown in a hot-bed, early in the ſpring, and when the plants come up two inches high, they ſhould be tranſplanted into ſmall pots filled with good freſh earth, and the pots muſt be plunged into a hot-bed of tanner's bark: when the plants have obtained ſome ſtrength, the glaſſes muſt be raiſed in the day time. [The perennial ſorts may alſo be increaſed by cuttings.

The ſpecies natives of the Eaſt Indies are, 3. 5, 6. 14. 24, 25, 26. 28, 29. 32, 33, 34.

Moſt of the new ſpecies are from the Cape of Good Hope. (1. 4. 7 to 12. 18 to 23. and 31.) Theſe require only the protection of a dry ſtove or glaſs caſe, and may be propagated by cuttings, though ſome of them do not ſtrike very readily. Several of them ripen their ſeeds in Europe, and therefore may be alſo propagated that way.

Several ſpecies are natives of Egypt or Arabia, as 2. 5. 26. 30. 35. Two are natives of China, 15 and 16. One of Cochinchina, n. 17. And n. 13. of New Granada in Spaniſh America. All therefore are the growth of hot climates; and not one of Europe.

Culture of Indigo (*n.* 33.) *in the Weſt Indies.*

Indigo ſeems to thrive beſt in a free rich ſoil, and a warm ſituation; but to anſwer the planter's toil to his ſatisfaction, it ſhould be cultivated where it may be frequently refreſhed with moiſture.

Having firſt choſen a proper piece of ground, and cleared it, hoe it into little trenches, not above two inches, or two inches and a half in depth, nor more than fourteen or fifteen inches aſunder. In the bottom of theſe, at any ſeaſon of the year, ſtrew the ſeeds pretty thick, and immediately cover them. As the plants ſhoot, they ſhould be frequently weeded, and kept conſtantly clean, until they ſpread ſufficiently to cover the ground.

Thoſe who cultivate great quantities, only ſtrew the ſeeds pretty thick in little ſhallow pits, hoed up irregularly, but generally within four, five or ſix inches of one another, and covered as before. Plants raiſed in this manner are obſerved to anſwer as well, or rather better than the others, but they require more care in the weeding. They grow to full perfection in two or three months, and are obſerved to anſwer beſt when cut in full bloſſom. The plants are cut with rape-hooks, a few inches above the root, tied in loads, carried to the works, and laid by ſtrata in the ſteeper.

The culture of Indigo has been greatly neglected among the Engliſh coloniſts, though no part of the world affords a better ſoil, or more commodious ſituations for that purpoſe than Jamaica. They have begun however to plant there of late years.

Seventeen negroes are ſufficient to manage twenty acres of Indigo: and one acre of rich land, well planted, will, with good ſeaſons and proper management, yield five hundred pounds of Indigo in twelve months: for the plant ratoons and gives four or five crops a year: but muſt be replanted afterwards[x].]

Mr. Miller is of opinion that the planters of Indigo ſow their ſeeds too thick, whereby the plants are drawn up with ſlender ſtems, not ſufficiently furniſhed with leaves, and thoſe leaves not ſo large and ſucculent, as if the plants were allowed a greater ſhare of room. It is a common obſervation of the cultivators of Woad, that when the plants ſpire, and have narrow thin leaves, they produce little dye; they not only therefore make choice of rich ſtrong land, but are careful to thin the plants, that they may have room to ſpread, and produce large ſucculent leaves. If the planters of Indigo in America would imitate the cultivators of Woad in this particular, they would certainly find their advantage in ſo doing.

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[x] Browne.

Another point in which they err is, letting the plant ſtand too long before they cut it; for the older it is, the drier and firmer are the ſtalks, and the leſs will be diſſolved by fermentation; nor will the fæces of old plants be near ſo beautiful. It is to be wiſhed therefore that the planters would try ſome experiments in the culture and management of Indigo, by ſowing thin, keeping the plants perfectly clean, and cutting them whilſt young and full of juice. But labour being dear in the Weſt Indies, the planters may object to the expenſe of cultivating Indigo in this manner. To avoid this, the ſeeds might be ſown with the drill plough; and by the uſe of the hoe plough, ten acres may be kept clean from weeds with as ſmall expenſe as one with the hand hoe; and by ſtirring the ground often, and earthing up the plants, they would grow much ſtronger, be leſs liable to be deſtroyed by inſects, and have larger and more ſucculent ſtalks and leaves.

Though all ſeaſons be good for ſowing Indigo, yet care muſt be taken not to do it in a dry time, becauſe it may be eaten by vermin, carried away by the wind, or choked by weeds: the planters therefore uſually chooſe a ſeaſon which promiſes rain, and then they are ſure of ſeeing the plant ſpring up in three or four days.

Indigofera. See *Sophora.*

Inga. See *Mimoſa.*

[Inhame. See *Dioſcorea.*

Innominata. See *Conocarpus.*

INOCARPUS. (*From* Iς, ινος, *a fibre, and* καρπος *a fruit; the drupe being fibroſe.*)

Forſt. gen. t. 33. *Lin. gen. Schreb. n.* 754. *ſuppl.* 35. *Thunb. nov. gen.* 45. *Juſſ.* 152.

Claſſ. 10. 1. Decandria Monogynia.

Nat. order of *Dumoſæ.—Sapotæ,* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, (bell-ſhaped, *Thunb.*) bifid; *diviſions* roundiſh, nearly equal.

Cor. one-petalled, tubular. *Tube* cylindric, the length of the calyx, (ſhorter, *Thunb.*) *Border* five-parted, (or ſix-parted, *F.*) longer than the tube: *diviſions* linear, acute, undulated, often reflex.

Stam. *Filaments* ten, (or twelve, *F.*) very ſhort, inſerted into the tube; (in a double row, *F.*) the alternate ones inferior. *Anthers* ovate, twin, upright.

Pist. *Germ* oblong, villoſe, ſuperior. *Style* none. *Stigma* an excavated point.

Per. *Drupe* (kidney-form, or *F.*) ovate, incurved, compreſſed, large, one-ſeeded.

Seed. A *nut,* interwoven with woody fibres: *kernel* compreſſed, oval.

ESSENTIAL CHARACTER.

Cal. bifid. *Cor.* funnel-form. *Stam.* in a double row. *Drupe* one-ſeeded.

SPECIES.

1. Inocarpus edulis.

Lin. ſyſt. 408. *ſuppl.* 239. *Forſt. flor. auſtr. n.* 197. *eſcul.* 50. *n.* 18. *Thunb. diſt.* 46. *Rumph. amb.* 1. 170. *t.* 65.

DESCRIPTION, *&c.*

This is a tree, with alternate leaves, a long ſpan in length, oblong, ſubcordate, on very ſhort petioles, quite entire, ſmooth, veined. Spikes (Racemes) axillary, ſolitary, ſmall, hirſute. Flowers ſmall, alternate, with ſmall bractes[a].

Native of the Society, Friendly and New Hebrides Iſles, &c. in the South Seas[b]; alſo in Amboina.

Forſter deſcribes it as a lofty tree, the thickneſs of a man's body, with a brown chinky bark: the branches woody, round, ſpreading, variouſly divided, brown, chinky. Leaves ſubdiſtich, ovate-oblong, ſcarcely cordate, blunt and retuſe, ſeldom acute, ſpreading, netted with abundance of veins, a ſpan long, and on young trees a foot. Petioles roundiſh, ſpreading, ſmooth and even, tranſverſely ſtriated, half an inch long. General peduncles axillary, ſubſolitary, round, ſpreading, covered with a black pubeſcence, a hand in length. Raceme filiform, quite ſimple. Pedicels very ſhort, ſcattered, cluſtered. Flowers duſky white, ſcarcely half an inch in length.

In Otaheite this tree is called *Hi,* and the fruit *Ratta.* In Mallicollo the name of the tree is *Nias,* and in Tanna, *Emmer.* In Cook's laſt voyage (1. 393.) the nuts are called *E-iſi.* The kernel of theſe, which is kidney-ſhaped, and about an inch in diameter, is eaten roaſted by the inhabitants of the Society and Friendly iſles, the New Hebrides, New Guinea, the Molucca iſles, &c. It is ſweetiſh, but leſs pleaſant than the Cheſtnut, harder and leſs farinaceous. The bark is aſtringent, and is uſed in the dyſentery. In New Guinea, they ſmear the heads of their arrows with the expreſſed reſinous juice[c].]

INOCULATING, or Budding. This is commonly practiſed upon all ſorts of ſtone fruit, in particular Peaches, Nectarines, Cherries, Plums, &c. as alſo Oranges and Jaſmines, and is preferable to any ſort of grafting for moſt ſorts of fruit. The method of performing it is as follows: you muſt be provided with a ſharp penknife, having a flat haft (the uſe of which is to raiſe the bark of the ſtock, to admit the bud) and ſome ſound baſs mat, which ſhould be ſoaked in water to increaſe its ſtrength, and make it more pliable; then having taken off the cuttings from the trees you would propagate, you ſhould chooſe a ſmooth part of the ſtock about five or ſix inches above the ſurface of the ground, if deſigned for dwarfs, and for half ſtandards at three feet; but for ſtandards, they ſhould be budded ſix or more feet above ground; then with your knife make an horizontal cut acroſs the rind of the ſtock, and from the middle of that cut make a ſlit downwards about two inches in length, ſo that it may be in the form of a T; but you muſt be careful not to cut too deep, leſt you wound the ſtock: then having cut off the leaf from the bud, leaving the foot-ſtalk remaining, you ſhould make a croſs cut about half an inch below the eye, and with your knife ſlit off the bud, with part of the wood to it, in form of an eſcutcheon: this done, you muſt with your knife pull off that part of the wood which was taken with the bud, obſerving whether the eye of the bud be left to it, or not, for all thoſe buds which loſe their eyes in ſtripping, ſhould be thrown away, being good for nothing; then having gently raiſed the bark of the ſtock where the croſs inciſion was made, with the flat haft of your penknife clear to the wood, you ſhould thruſt the bud therein, obſerving to place it ſmooth between the rind and the wood of the ſtock, cutting off any part of the rind belonging to the bud, which may be too long for the ſlit made in the ſtock; and ſo having exactly fitted the bud to the ſtock, you muſt tie them cloſely round with baſs mat, beginning at the under part of the ſlit, and ſo proceed to the top, taking care that you do not bind round the eye of the bud, which ſhould be left open.

When your buds have been inoculated three weeks or a month, you will ſee which of them have taken; thoſe of them which appear ſhrivelled and black, being dead, but thoſe which remain freſh and plump, you may depend are joined; and at this time you ſhould looſen the bandage, which, if not done in time, will pinch the ſtock, and greatly injure, if not deſtroy, the bud.

The march following you muſt cut off the ſtock about three inches above the bud, ſloping it that the wet may paſs off, and not enter the ſtock; to this part of the ſtock left above the bud, it is very proper to faſten the ſhoot which proceeds from the bud, and would be in danger of being blown out, if not prevented; but this muſt continue no longer than one year, after which it muſt be cut off cloſe above the bud, that the ſtock may be covered thereby.

The time for Inoculating is, from the middle of June until the middle of auguſt, according to the forwardneſs of the ſeaſon, and the particular ſorts of trees to be propagated; but the time may be eaſily known, by trying the buds, whether they will come off well from the wood. However, the moſt general rule is, when you obſerve the buds formed at the extremity of the ſame year's ſhoots, which is a ſign of their having finiſhed their ſpring growth.

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[a] Linn. ſuppl.

[b] Forſt. flor.

[c] Forſt. eſcul.

The firſt tree commonly inoculated is the Apricot, and the laſt the Orange-tree, which ſhould never be done until the middle of auguſt; and in doing this work, you ſhould always make choice of cloudy weather; for if it be done in the middle of the day, in very hot weather, the ſhoots will perſpire ſo faſt, as to leave the buds deſtitute of moiſture; nor ſhould you take off the cuttings from the trees long before they are uſed; for if you are obliged to fetch your cuttings from ſome diſtance, as it often happens, you ſhould then be provided with a tin box or caſe, having a ſocket about ten inches long, and a cover to the top, which muſt have five or ſix holes; in this ſocket you ſhould put as much water as will fill it about two or three inches high, and place your cuttings therein in an upright poſition, ſo that that part which was cut from the tree may be ſet in the water, and ſo faſten down the cover to keep out the air; and the holes in the cover will be ſufficient to let the perſpiration of theſe branches paſs off, which, if pent in, would be very hurtful to them; you muſt alſo be careful to carry it upright, that the water may not reach to the buds; for it is a very wrong practice in thoſe who throw their cuttings all over in water, which ſo ſaturates the buds with moiſture, that they have no attractive force left to imbibe the ſap of the ſtock, whereby they very often miſcarry.

But before I leave this head, I beg leave to obſerve, that though it is the ordinary practice to diveſt the bud of that part of the wood which was taken from the ſhoot with it; yet, in many ſorts of tender trees, it is beſt to preſerve a little wood to the bud, without which they often miſcarry. The not obſerving this, has occaſioned ſome people to imagine, that ſome ſorts of trees are not to be propagated by Inoculation; whereas, if they had performed it in this method, they might have ſucceeded, as I have ſeveral times experienced.

[Inophyllum. See *Calophyllum.*

Inschi. See *Amomum.*

Intsia. See *Mimoſa.*

Intybum and] Intybus, See *Cichorium* and *Hieracium.*

INŬLA, (*of Pliny. Contracted or corrupted from Helenium. Dict.* Ελενιον; *fabled to have ſprung from the tears of Helen.*)

Lin. gen. n. 956. *Reich.* 1037. *Schreb.* 1295. *Gærtn. t.* 170. *Juſſ.* 181. Enula. *Cæſalp. & Magnol* Helenium. *Vaill. mem. acad. par.* 1720. *Moriſ. Ray, Herm. Rivin.*

Claſſ. 19. 2. Syngeneſia Polygamia Superflua.

Nat. order of *Compoſitæ Diſcoideæ.—Corymbiferæ,* Juſſ.

GENERIC CHARACTER.

Cal. *Common* imbricated: *leaflets* lax, ſpreading: the exterior ones larger, of equal length.

Cor. *Compound* radiated, broad. *Corollules* hermaphrodite, equal, very numerous in the diſk. *Females* ſtrap-ſhaped, numerous, crouded, in the ray.

Proper of the hermaphrodite, funnel-form; *border* five-cleft, rather upright.

Female ſtrap-ſhaped, linear, perfectly entire.

Stam. in the hermaphrodite, *Filaments* five, filiform, ſhort. *Anther* cylindric, compoſed of five ſmaller linear conjoined ones: each ending below in two ſtraight *briſtles* of the length of the filaments.

Pist. In the hermaphrodite, *Germ* oblong. *Style* filiform, length of the ſtamens. *Stigma* bifid, rather upright. In the females, *Germ* long. *Style* filiform, half bifid. *Stigmas* erect.

Per. none. *Calyx* unchanged.

Seeds. In the hermaphrodites ſolitary, linear, four-cornered, *pappus* capillary, length of the ſeeds. In the females, like the hermaphrodites.

Rec. naked, flat.

Obs. *This genus therefore differs not only from* Aſter, *but from moſt others, in having the anthers terminated below by ten briſtles.—But this character is not to be found in all the ſpecies.*

ESSENTIAL CHARACTER.

Recept. naked. *Down* ſimple. *Anthers* ending in two briſtles at the baſe.

SPECIES.

1. Inula Helenium. *Common Inula,* or *Elecampane.*

Lin. ſpec. 1236. *ſyſt.* 766. *Reich.* 3. 823. *amoen.* 1. 410. *mat. med.* 186. *Woodv. mat. med.* 297. *t.* 108. *Gærtn. fruct.* 2. 449. *Hudſ. angl.* 368. *Wither. arr.* 922. *ed.* 3. 730. *Lightf. ſcot.* 484. *Relh. cant. n.* 618. *Neck. gallob.* 357. *Leers herborn. n.* 652. *Fl. dan. t.* 728. *Villars dauph.* 3. 213. *Krock. ſileſ. n.* 1410. *Thunb. jap.* 317.

Aſter. *Lin. hort. cliff.* 407. *fl. ſuec. n.* 755. *Hall. helv. n.* 72.

A. Helenium. *Scop. carn. n.* 1078.

A. officinalis. *Allion. pedem.* 705.

Helenium. *Camer. epit.* 35. *Fuchſ. hiſt.* 242. *Trag.* 170. *Matth.* 71. *Dod. pempt.* 344. *Tabern.* 562. *Lob. obſ.* 309. 1. *ic.* 1. 574. 2. *Bauh. hiſt.* 2. 108. *Raii hiſt.* 273. *ſyn.* 176. *Ger.* 649. *emac.* 793. *Park. theat.* 654. *Mor. hiſt. ſ.* 7. *t.* 24. *row.* 3. *fig. laſt. Petiv. brit. t.* 16. *f.* 1. *Blackw. herb. t.* 473.

H. vulgare. *Bauh. pin.* 276.

Leaves ſtem-claſping ovate wrinkled tomentoſe underneath, ſcales of the calyxes ovate.

2. Inula odora. *Sweet-rooted Inula.*

Lin. ſpec. 1236. *ſyſt.* 766. *Reich.* 3. 824. *Forſk. ægypt.* 150. *Pallas. itin.* 1. 154.

Aſter luteus, radice odora. *Bauh. pin.* 266.

Aſteris altera ſpecies apula. *Col. ecphr.* 1. 251. *t.* 253. *Raii hiſt.* 264. 13.

Conyza altera apula. *Mor. hiſt.* 3. 113. *ſ.* 7. *t.* 21. *f.* 6.

Leaves ſtem-claſping toothed extremely hirſute, root-leaves ovate, ſtem-leaves lanceolate, ſtem few-flowered.

[3. Inula ſuaveolens. *Woolly-leaved Inula.*

Lin. ſyſt. 766. *Jacqu. hort.* 3. *t.* 51. *Ait. hort. kew.* 3. 224.

Leaves elliptic attenuated at the baſe ſubpetioled hairy, lower toothed, ſtem many-flowered.]

4. Inula Oculus Chriſti. *Hoary Inula.*

Lin. ſpec. 1237. *ſyſt.* 766. *Reich.* 3. 824. *Jacqu. auſtr.* 3. *t.* 223. *Villars dauph.* 3. 213. *Ger. prov.* 199. *Gouan bot.* 364. *hort.* 444. *Krock. ſileſ. n.* 1411.

Aſter. *Lin. hort. cliff.* 407.

Conyza pannonica lanuginoſa. *Bauh. pin.* 265. *Mor. hiſt.* 3. 113. *ſ.* 7. *t.* 19. *f.* 1. *Raii hiſt.* 262.

C. tertia auſtriaca. *Cluſ. hiſt.* 2. 20. *Ger. emac.* 484. *f.* 7.

Aſter montanus flore luteo magno hirſutus, quibuſdam Oculus Chriſti. *Bauh. hiſt.* 3. 1046.

Leaves ſtem-claſping oblong entire hirſute, ſtem hairy corymbed.

5. Inula Britannica. *Creeping-rooted Inula.*

Lin. ſpec. 1237. *ſyſt.* 766. *Reich.* 3. 824. *fl. ſuec. n.* 756. *Fl. dan. t.* 413. *Pallas. it.* 1. 370. *Villars dauph.* 3. 214. *Krock. ſileſ. n.* 1412.

A. britannicus. *Allion. pedem. n.* 712.

α. Conyzis affinis. *Bauh. pin.* 265.

Conyza paluſtris repens Britannica dicta. *Mor. hiſt.* 3. 113. *ſ.* 7. *t.* 19. *f.* 8.

β. C. aquatica, Aſteris flore aureo. *Bauh. pin.* 266. *prodr.* 124.

Leaves ſtem-claſping lanceolate ſerrate diſtinct villoſe underneath, ſtem branched upright villoſe.

[6. Inula dyſenterica. *Meadow Inula, common* or *middle Fleabane.*

Lin. ſpec. 1237. *ſyſt.* 766. *Reich.* 3. 825. *amoen.* 1. 410. *mat. med.* 187. *Hudſ. angl.* 368. *Wither. arr.* 923. *ed.* 3. 731. *Curt. lond.* 3. 56. 164. *Relh. cant. n.* 619. *Sauv. monſp.* 85. *Neck. gallob.* 356. *Pollich pal. n.* 803. *Fl. dan. t.* 410. *Forſk. ægypt.* 150. *Villars dauph.* 3. 216. *Krock. ſileſ. n.* 1413.

Aſter. *Lin. fl. ſuec. n.* 757. *Hall. helv. n.* 79.

A. dyſentericus. *Scop. carn. n.* 1079.

Conyza media. *Ger. emac.* 482. 3. *Raii hiſt.* 262. *ſyn.* 174. *Petiv. brit. t.* 16. *f.* 2.—Aſteris flore luteo, ſ. tertia Dioſcoridis. *Bauh. pin.* 265. *Mor. hiſt. ſ.* 7. *t.* 19. *f.* 7.—Matthioli, flore magno luteo. *Bauh. hiſt.* 2. 1050. 1.

Conyza prima. *Tabern. hiſt.* 1243.

Herba dyſenterica. *Cat. Altdorf.*

Calaminthæ tertium genus. *Fuchſ. hiſt.* 436.

Leaves ſtem-claſping cordate-oblong, ſtem villoſe panicled, calycine ſcales briſtle-ſhaped.

7. Inula viſcoſa. *Clammy Inula.*

Ait. hort. kew. 3. 223.

Erigeron viſcoſum. *Lin. ſpec.* 1209.

Leaves lanceolate toothletted ſeſſile reflex at the baſe, peduncles lateral one-flowered leafy.

8. Inula undulata. *Wave-leaved Inula.*

Lin. ſyſt. 766. *Reich.* 3. 825. *mant.* 115.

Helenium ægyptiacum tomentoſum & incanum, &c. *Vaill. act. par.* 575.

Leaves ſtem-claſping cordate-lanceolate waved.

9. Inula indica. *Indian Inula.*

Lin. ſpec. 1237. *ſyſt.* 766. *Reich.* 3. 826. *Burm. zeyl. t.* 55. *f.* 2. (Jacobæa).

Leaves ſtem-claſping cordate-lanceolate ſerrate, peduncles one-flowered filiform, flowers globular.

10. Inula Pulicaria. *Trailing Inula* or *Fleabane.*

Lin. ſpec. 1238. *ſyſt.* 766. *Reich.* 3. 826.

Erigeron. *Lin. ſuec. n.* 758.

Conyza. *Lin. hort. cliff.* 405.

C. major flore globoſo. *Bauh. pin.* 266.

β. Helenium paluſtre annuum, hyſſopi fol. criſpis. *Vaill. act. par.* 575. *Barr. ic.* 369. (Aſter).

Conyza minor exotica. *Bauh. pin.* 265.—hiſpanica. *Pluk. mant. t.* 384. *f.* 2.—media criſpa lacuſtris, flore nullatenus radiato. *Raii ſuppl.* 152.

Leaves ſtem-claſping waved, ſtem proſtrate, flowers ſubglobular with a very ſhort ray.

11. Inula uliginoſa. *Small, Dwarf* or *Marſh Inula* or *Fleabane.*

Sibth. oxon. n. 711.

I. cylindrica. *Wither. arr. ed.* 3. 731.

I. Pulicaria. *Hudſ. angl.* 369. *Wither. arr.* 924. *Curt. lond.* 3. 57. 156. *Relh. cant. n.* 620. *Neck. gallob.* 356. *Leers herborn. n.* 653. *Pollich pal. n.* 804. *Fl. dan. t.* 613. *Krock. ſileſ. n.* 1414. *Blackw. t.* 103.

Aſter. *Hall. helv. n.* 80.—pulicarius. *Scop. carn. n.* 1080.

Conyza minor. *Matth.* 2. 223. *Trag.* 166. *Raii hiſt.* 262. *ſyn.* 174. *Petiv. brit. t.* 16. *f.* 3.

C. minima. *Dod. pempt.* 52. 3. *Lob. obſ.* 187. 2. *ic.* 1. 345. 1. *Ger.* 390. 2. *emac.* 482. 4.

C. minor flore globoſo. *Bauh. pin.* 266.

C. mediæ minor ſpecies, fl. vix radiato. *Bauh. hiſt.* 2. 1050.

Chryſanthemum conyzoides paluſtre. *Mor. hiſt. ſ.* 7. *t.* 20. *f.* 30.

Upper leaves ſtem-claſping lanceolate waved, blunt, ſtem upright, woolly towards the top, calyxes cylindrical.

12. Inula arabica. *Arabian Inula.*

Lin. ſyſt. 766. *Reich.* 3. 827. *mant.* 114. *Pluk. phyt. t.* 149. *f.* 4.

Helenium ramoſum, caul. ſparſis, calthæ arv. folio. *Vaill. act. par.* 575.

Leaves oblong ſeſſile, peduncles filiform, calyxes cylindrical.

13. Inula ſpiræifolia. *Spiræa-leaved Inula.*

Lin. ſpec. 1238. *Reich.* 3. 827.

Conyza media monſpelienſi affinis multiflora. *Bauh. hiſt.* 2. 1049.

Leaves ſubſeſſile ovate-oblong naked netted cluſtered ſerrulate, flowers terminating ſubſeſſile.]

14. Inula ſquarroſa. *Net-leaved Inula.*

Lin. ſpec. 1240. *ſyſt.* 766. *Reich.* 3. 827. *Gouan illuſtr.* 68.

Aſter ſquarroſus. *Allion. pedem. n.* 708.

Aſter conyzoides odoratus luteus. *Tournef. inſt.* 483. *Segu. ver.* 2. 211.—lut. latifolius glaber, &c. *Pluk. phyt. t.* 16. *f.* 1.

Leaves ſeſſile oval even netted-veined ſubcrenate, calyx ſquarroſe.

[15. Inula Bubonium.

Lin. ſyſt. 767. *Jacqu. auſtr.* 5. *app. t.* 19.

Leaves lanceolate ſomewhat rigid toothletted ſubvilloſe ſeſſile, ſtem and branches ſubbiflorous, calyx ſquarroſe.]

16. Inula ſalicina. *Willow-leaved Inula.*

Lin. ſpec. 1238. *ſyſt.* 767. *Reich.* 3. 828. *amoen.* 1. 410. *Sauv. monſp.* 86. *Pollich pal. n.* 805. *Krock. ſileſ. n.* 1415. *Villars dauph.* 3. 217. *Ger. prov.* 200. *Fl. dan. t.* 786.

Aſter. *Lin. ſuec. n.* 759. *Gmel. ſib.* 2. 177. *t.* 77. *Hall. helv. n.* 76.

A. ſalicinus. *Scop. carn. n.* 1081.

A. montanus luteus, ſalicis glabro folio. *Bauh. pin.* 266. *Raii hiſt.* 266.—fol. ſalicis. *Ger. emac.* 588. *f.* 8.

Conyza media monſpelienſis, &c. *Bauh. hiſt.* 2. 1049.

Bubonium luteum 1. *Tabern. hiſt.* 716.

Leaves lanceolate recurved ſerrate-ſcabrous, branches angular, lower flowers higheſt.

17. Inula hirta. *Hairy Inula.*

Lin. ſpec. 1239. *ſyſt.* 767. *Reich.* 3. 828. *Pollich pal. n.* 806. *Jacqu. auſtr.* 4. 30. *t.* 358. *Pallas it.* 1. 154. *Villars dauph.* 3. 218. *Krock. ſileſ. n.* 1416. *Hall. helv. n.* 75. (Aſter).

Aſter luteus, hirſuto ſalicis folio. *Bauh. pin.* 266.

A. tertius pannonicus, Cluſii luteus, fol. hirſ. ſalicis. *Bauh. hiſt.* 2. 1047.

A lanuginoſo fol. ſ. 5 Cluſ. luteus. *Park. theat.* 130. *f.* 5. *Raii hiſt.* 266..

A. auſiriacus 5 Cluſ. *Ger. emac.* 488. *f.* 9.

Leaves ſeſſile lanceolate recurved ſubſerrate-ſcabrous, ſtem roundiſh ſomewhat hairy, lower flowers higheſt.

18. Inula mariana. *American Inula.*

Lin. ſpec. 1240. *Reich.* 3. 829. *Mill. fig.* 38. *t.* 57. *f.* 1. *Pluk. mant. t.* 340. *f.* 1. (Aſter).

Leaves ſeſſile lanceolate ſubſerrate hairy, peduncles ſubuniflorous ſomewhat clammy, leaflets linear.

19. Inula germanica. *German Inula.*

Lin. ſpec. 1239. *ſyſt.* 767. *Reich.* 3. 829. *Pollich pal. n.* 807. *Jacqu. auſtr.* 2. *t.* 134. *Villars dauph* 3. 219. *Gmel. ſib.* 2. 181. *t.* 78. *f.* 1. (Aſter).

Aſter Bubonium. *Scop. carn. n.* 1083. *t.* 58. *Villars.*

Conyzæ affinis germanica. *Bauh. pin.* 266. *Mor. hiſt.* 3. *ſ.* 7. *t.* 19. *f.* 26.

Leaves ſeſſile lanceolate recurved ſcabrous, flowers ſomewhat ſickle-ſhaped.

[20. Inula japonica. *Japoneſe Inula.*

Lin. ſyſt. 769. *Thunb. jap.* 318. *Kæmpf. amoen.* 5. 877.

Leaves ſeſſile lanceolate toothletted, peduncles rod-like one-flowered.

21. Inula dubia. *Doubtful Inula.*

Lin. ſyſt. 767. *Thunb. jap.* 318.

Leaves ſeſſile oblong ciliate, ſtem one-flowered.

22. Inula enſifolia. *Sword-leaved Inula.*

Lin. ſpec. 1240. *ſyſt.* 767. *Reich.* 3. 830. *Jacqu. auſtr.* 2. *t.* 162.

Aſter enſifolius. *Scop. carn. n.* 1084. *Hall. helv. n.* 77 ?

A. montanus, &c. *Bocc. muſ.* 1. 31. *t.* 18.

A. luteus, linariæ rigido glabro folio. *Bauh. pin.* 267.

A. anguſtifolius, &c. *Cluſ. hiſt.* 15. *Ger. emac.* 487. 10. *f.* 489. 10. *Raii hiſt.* 266.

A. luteus anguſt. *Bauh. hiſt. Park. theat.* 130. *f.* 6.

Leaves ſeſſile linear acuminate nerved ſmooth ſcattered, ſtem one or two-flowered.]

23. Inula crithmoides. *Trifid Inula* or *Golden Sampire.*

Lin. ſpec. 1240. *Reich.* 3. 830. *Hudſ. angl.* 369. *Wither. arr.* 924. *ed.* 3. 732. *Engl. bot. t.* 68. *Vahl ſymb.* 1. 73.

Aſter. *Lin. hort. cliff.* 409.—maritimus flavus, Crithmum Chryſanthemum dictus. *Raii ſyn.* 174. *hiſt.* 268.

Senecio crithmifolius. *Scop. carn. n.* 1066.

S. ſucculentus. *Forſk. deſcr.* 149.

Crithmum maritimum, flore aſteris attici. *Bauh. pin.* 288.

C. chryſanthemum. *Dod. pempt.* 706. 1. *Lob. obſ.* 215. 1. *ic.* 1. 395. 2. *Ger.* 427. 3. *emac.* 533. 3. *Park. theat.* 1287. *Petiv. brit. t.* 17. *f.* 9. *Mor. hiſt. ſ.* 7. *t.* 31. *f.* 16.

C. marinum tertium Matthiolo, flore luteo Buphthalmi. *Bauh. hiſt.* 2. 106. 3.
Leaves linear fleſhy three-cuſped.

[24. Inula provincialis. *Oval-leaved Inula.*
Lin. ſpec. 1241. *Reich.* 3. 830. *Gouan illuſtr.* 68. *Hall. helv. n.* 70. (Solidago). *Reich.*
Jacobæa rotundifolia incana. *Bauh. pin.* 131. *prodr.* 69.
Leaves ſubſerrate tomentoſe underneath, root-leaves petioled ovate, ſtem upright one-flowered.]

25. Inula montana. *Mountain Inula.*
Lin. ſpec. 1241. *Reich.* 3. 831. *Gouan hort.* 445. *Pollich pal. n.* 808. *Villars dauph.* 3. 219. *Hall. helv. n.* 81. (Aſter).
Aſter montanus. *Allion. pedem. n.* 706.
Aſter atticus luteus montanus villoſus, magno flore. *Bauh. pin.* 267. *phytop.* 519. 11. *Tournef. inſt.* 482. *Garid. aix.* 47. *t.* 10.
A. anguſtifolius luteus. *Bauh. hiſt.* 3. 1046. *v. n.* 22.
A. montanus hirſutus. *Lob. ic.* 350. *Raii hiſt.* 267. 7.
A. mont. lut. mas & femina. 3, 4. *Tabern. hiſt.*
Leaves lanceolate hirſute quite entire, ſtem one-flowered, calyx ſhort imbricate.

[26. Inula æſtuans.
Lin. ſpec. 1236. *Reich.* 3. 831. *Plum. ſpec.* 10. *ic.* 41. *f.* 2. (Aſter).
Helenium virgæ paſtoris folio ſubtus incano & tomentoſo. *Vaill. act. par.* 1720. *p.* 302.
Leaves ſpatulate tomentoſe underneath.]

27. Inula bifrons.
Lin. ſpec. 1236. *Reich.* 3. 831.
Conyza pyrenaica, fol. primulæ veris. *Herm. parad.* 127.
C. latifolia viſcoſa, fl. aureo. *Garid. aix.* 125. *t.* 23.
C. præalta, caule alato, odorata. *Bocc. muſ.* 1. 168. *t.* 121. *Raii ſuppl.* 153.
Leaves decurrent oblong toothletted, flowers heaped terminating ſubſeſſile.

[28. Inula cærulea. *Blue-flowered Inula.*
Lin. ſyſt. 767. *Reich.* 3. 832. *mant.* 471.
I. cernua. *Berg. cap.* 288.
Aſter polifolius. *Lin. ſpec.* 1224. *Raii ſuppl.* 160. *n.* 29. *Vaill. act. par.* 585. (Aſteropterus).
Leaves decurrent obovate ſubſerrate, ſtem ſuffruticoſe, flowers ſeſſile terminating.

29. Inula aromatica. *Aromatic Inula.*
Lin. ſpec. 1241. *Reich.* 3. 832. *amoen.* 6. *afr.* 71. *Pluk. phyt. t.* 326. *f.* 2.
Leaves linear quite entire tomentoſe ſcattered, ſtem ſhrubby.

30. Inula pinifolia. *Pine-leaved Inula.*
Lin. ſpec. 1241. *Reich.* 3. 832. *mant.* 472. *amoen.* 6. *afr.* 70.
Jacobæa æthiopica, laricis folio. *Breyn. cent.* 136. *t.* 64. *Mor. hiſt.* 3. *f.* 7. *t.* 18. *f.* 31.
Leaves ſubulate-linear three-ſided cluſtered very much, ſtem ſhrubby.

31. Inula foetida. *Stinking Inula.*
Lin. ſpec. 1241. *ſyſt.* 768. *Reich.* 3. 832. *Pallas. it.* 1. 40.
Solidago. *Lin. hort. cliff.* 410.
Conyza melitenſis, retuſis foliis. *Bocc. ſic. t.* 27. *Raii hiſt.* 264.
Leaves lanceolate-linear quite entire, corymbs branched, rays of the flowers very ſhort.]

32. Inula canarienſis. *Canary Inula.*
Mill. dict. n. 12.
Aſter canar. fruteſcens, folio tridentato craſſo. *Hort. chelſ.* 26.
Leaves linear fleſhy three-cuſped, ſtem ſhrubby.

33. Inula ſatureioides. *Savory-leaved Inula.*
Mill. dict. n. 13.
Aſter ſatureiæ foliis conjugatis & piloſis, flore luteo. *Houſt. Mſs.*
Leaves linear hirſute oppoſite, peduncles naked one-flowered.

34. Inula fruticoſa. *Shrubby Inula.*
Mill. dict. n. 15.
Leaves lanceolate acute three-nerved underneath, calycine ſcales acute, ſtem ſhrubby.

DESCRIPTIONS, *&c.*

[The Inulas are in general herbaceous plants, with exception to the 28th, 29th, 30th, 32d and 34th ſpecies, which are ſhrubby. The 8th, 9th, 10th, 11th and 12th are annual. Leaves ſimple, alternate. Flowers yellow (except n. 28), axillary or terminating, frequently in corymbs. They agree in ſo many circumſtances with the Aſters, that Tournefort, Haller, Scopoli and others do not ſeparate them. The florets in the ray are more numerous in this genus, and of a yellow colour. Linneus's eſſential character, of two briſtles at the baſe of the anthers, ſo far from being common to all the ſpecies, is not found even in the majority, according to Gærtner; they are however ſo ſmall in ſome ſpecies as to eſcape common obſervation[a].

1. Elecampane has a perennial, thick, fuſiform, brown, branching, aromatic root. According to ſome it is biennial. It is one of the largeſt of our herbaceous plants, being from three to five or ſix feet high, with the ſtem ſtriated and downy, branched towards the top. Lower leaves on footſtalks, lanceolate,] a foot long, and four inches broad in the middle: [upper embracing, ovate-lanceolate, wrinkled, ſerrated or toothed, deep green and ſlightly hairy above, whitiſh green and thickly downy beneath. Flowering heads very large, ſingle, terminating the ſtem and branches. Outer ſcales of the calyx ovate-lanceolate, like the leaves; inner bluntly ovate, tomentoſe. Florets all yellow, thoſe of the ray narrow, linear, from an inch to an inch and half in length, with three ſharp teeth at the end[b]. Seeds columnar, four-cornered, obſcurely ſtriated, ſmooth, cinnamon-bay-coloured, with the rim of the umbilicus cartilaginous and white. Pappus, egret or down white, twice as long as the ſeed, appearing to be capillary[c]; but when viewed with a glaſs, finely toothed on one ſide, ſhorter than the florets, ſeſſile[d]. Receptacle wide, ſmooth, hollow-dotted, or with very ſmall angular holes ſcarce ſenſibly toothletted at the edge[e].

Native of Japan, Denmark, Germany, Flanders, Switzerland, Auſtria, France, Piedmont, Spain, and Britain. With us in Eſſex frequent, in Norfolk not uncommon, Mettingham in Suffolk, near Madingley in Cambridgeſhire, Ripton and Warboys in Huntingdonſhire, Dunſtable and Pertenhall in Bedfordſhire, ſide of Bredon-hill in Worceſterſhire, about St. Ives in Cornwall, &c. In Scotland it is a doubtful native.] It flowers in june and july, and the ſeeds ripen at the end of auguſt.

[The root is eſteemed a good pectoral, and a conſerve of it is recommended in diſorders of the breaſt and lungs, as good to promote expectoration. An infuſion of it freſh, ſweetened with honey is ſaid to be an excellent medicine in the hooping cough. A decoction of it, applied outwardly, is ſaid to cure the itch. Bruiſed and macerated in urine, with balls of aſhes and whortle berries, it dyes a blue colour. A decoction of it cures ſheep that have the ſcab[f]; hence it is called in ſome counties *Scab-wort:* in others it has the name of *Horſe-heale*[g], doubtleſs from its reputed virtues in curing the cutaneous diſeaſes of horſes. The officinal name is *Enula campana*, whence evidently our Engliſh *Elecampane* is derived. In German it is *Alant, Aland, Alantwurz, Olant, Oltwurz, Helenenkraut, Glockenwurz, der groſſe Heinrich.* In Dutch, *Gewoon Alant, Alantſwortel.* In Daniſh, *Aland, Alandſroed, St. Ellens roed.* In Swediſh, *Alandſrot.* In French, *L'Inule aunée, l'aunée, l'Enule-campane, l'herbe contre la gale.* In Italian, *Enula, Enula campana, Ella, Elenio.* In Spaniſh and Portugueze, *Enula campana, Ala.* In Ruſſian, *Dewjatſchik, Deweſil, Oman, Krun.*

2. Stem ſimple, hairy. Leaves ſoft; root-leaves large; ſtem-leaves embracing; all very hairy above, beneath whitiſh. Flowers one or two, peduncled[h]. The root is perennial, with an aromatic ſmell and taſte; whence the trivial name.]

The ſtems are about two feet high, divided into ſeveral branches, with a few ſcattering yellow flowers, which appear in july, but are rarely followed here by ſeeds.

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[a] Juſſieu and Gærtner. [b] Woodw. Mſs. [c] Gærtner.
[d] Woodw. Mſs. [e] Gærtner. [f] Withering and Lightfoot.
[g] Gerarde. [h] Lin. ſpec. ſyſt. & mant.

[Native of the South of Europe, as Provence, Narbonne, Italy and Sicily. Ray obſerved it about Meſſina.—Mr. Miller cultivated it in 1759[i].

3. This has been confounded with the preceding, from which however it differs conſiderably. The root has no ſmell, but is acrid, and conſiſts of a bundle of round dirty white fibres, iſſuing from a thicker head. Stem uſually ſingle, upright, round, purpliſh, villoſe, leafy, a foot and half high, branching only at top into few-flowered peduncles. Leaves oblong-lanceolate, acute, obſcurely ſerrate, wrinkled, deep green with very ſhort hairs above, paler and veined with longer hairs beneath, the lower ones attenuated into the petiole, the upper ones ſeſſile with ſome ſmell. Flowers ſweet-ſmelling. Inner ſcales of the calyx erect and purpliſh, outer green ſhort and reflex. Radial corollets ſhorter than the calyx and three-toothed. Anthers briſtly. Seeds black with white cilias[k].

Native of the South of Europe, flowering from june to auguſt. Cultivated by Mr. Miller in 1758[l].

4. Root perennial. The whole is hirſute. Stem a foot or eighteen inches high, upright, hard, ſtiff, hairy, dividing into two or three branches. Leaves narrow, three-nerved, very obſcurely, if at all, ſerrate; the lower ſubpetioled, alternate, lanuginoſe. Flowers in a corymb, of a fine yellow or golden colour, large but ſmaller than in the firſt ſort. Corollets of the ray, three-toothed or ſometimes quite entire[m].] Mr. Miller ſays, the flowers are ſmall, and are in cloſe cluſters; theſe appear in july, but ſeldom perfect ſeeds in England.

[Native of Auſtria, the South of France and Sileſia. Cultivated by Mr. Miller in 1759.]

5. Root perennial. Stem near two feet high, dividing in the upper part into two or three upright branches, or peduncles, each ſuſtaining one pretty large flower, of a deep yellow colour. Theſe are in beauty in july, but ſeldom ripen ſeeds here.

[It has the habit of *I. dyſenterica*, but the ſtem is loftier and more upright; the leaves narrower, and finely ſerrate. The variety β differs only in having the ſtem and under ſurface of the leaves more villoſe. The petals of the ray are very narrow[n].

It differs from the next following ſpecies, according to Krocker, in having a creeping root, the ſtem eighteen inches high, more diffuſed, round, jointed; the leaves four inches long, half an inch or even an inch in breadth, hiſpid about the edges; the flowers have the form of the Aſter, are ſolitary, terminating, broader; the diſk wider, the ray ſhorter, both of a golden colour.

Native of Germany, Scania, Siberia, Piedmont.—Cultivated by Mr. Miller in 1759[o].

6. Root perennial, creeping, whitiſh, the thickneſs of a gooſe quill, with largiſh fibres. Stem from one to two feet high, upright, round, firm, ſolid, ſtriated, downy, branched more or leſs towards the top. Leaves alternate, ſet thickly together, ſpreading, oblong or lanceolate, obſcurely toothed, embracing the ſtem with their arrowhead-ſhaped baſe, underneath tomentoſe or downy, above ſomewhat hirſute, of a dull green colour. Branches like the ſtem, upright, the lateſt growing to the greateſt height. Flowers an inch or more in diameter, terminating, ſingle or two together, forming all together a ſort of corymb. Scales of the calyx numerous, awl-ſhaped, downy, frequently curved back at the end and coloured at the edge. Florets all yellow, exceedingly numerous in the diſk, numerous alſo, cloſe, linear, three-toothed in the ray. Briſtles at the baſe of the anthers very minute. Seeds rough with ſhort briſtles, crowned with a ſeſſile egret, of few ſimple rays, as long as the tube of the corollet. Receptacle rough with ſhort ſtiff projecting lanceolate points[p].

Native of moſt parts of Europe, in moiſt meadows, watery places, by the ſides of ditches, brooks and rivers; flowering from july to october, and frequently over-running large tracts of land, generally left untouched by all ſorts of cattle.

Ray obſerves, that the leaves when bruiſed ſmell like ſoap. Rutty informs us that the juice is ſaltiſh and warms the mouth a little, that the decoction is ſomewhat acrid in the throat, at the ſame time aſtringent and turning green with vitriol of iron; that the infuſion is ſomewhat aſtringent, very bitter in the throat, and turning black with vitriol of iron.

Linneus in his Flora Suecica mentions his having been informed by General Keit, that the Ruſſian ſoldiers, in their expedition againſt Perſia, were cured of the bloody flux by the uſe of this plant, whence Linneus gave it the name of *dyſenterica*[q]. It is called by our old authors Middle Fleabane, and was ſuppoſed by its ſmoke in burning to chaſe away fleas and other inſects. Forſkal ſays it is named in Arabic *Rara ejub* or Job's-tears, from a notion that Job uſed a decoction of this herb to cure his ulcers; and it was formerly recommended in the itch and other cutaneous diſorders.

7. This has been already deſcribed under Linneus's name of Erigeron viſcoſum. It is a native of the South of Europe, and was cultivated here in 1633, as appears from Johnſon's edition of Gerarde's Herbal[r].

8. Stem a foot high, round, upright, ſubtomentoſe: branches five, alternate, very ſtiff and ſtraight, rodlike, ſubdivided at the top. Leaves alternate, ſeſſile, embracing, with the lobes of the baſe adnate downwards, waved without any apparent ſerratures, hoary beneath. Peduncles terminating, one-flowered, with a few leaflets ſcattered on them. Calycine leaflets awl-ſhaped, curved in at the tip. Ray of the corolla ſhorter, with numerous, linear petals, three-toothed or five-toothed; diſk very convex. Flowers the ſame ſize with thoſe of Matricaria.—Native of Egypt[s]. Introduced in 1777, by Monſ. Thouin. It flowers in july[t].

9. This is an annual plant, reſembling the next ſort, but larger and ſtiffer. Leaves ſomewhat rugged, ſharp, naked above, ſubtomentoſe beneath. Peduncles many times as long as the flower, ſometimes having a ſingle leaf on them. Flowers like thoſe of I. Pulicaria, but with a longer ray, and the calyx leſs hirſute.—Native of the Eaſt Indies[u].

10. This is an annual plant, with a very trailing ſtem, not at all hairy, and a globular calyx. What has been taken for the Pulicaria of Linneus by botaniſts of England and other countries is different, and now therefore made a diſtinct ſpecies. See the next following.

The variety is larger and more rigid, but ſtill much ſmaller than ours[x].

Native of Scania, where water ſtagnates in winter, and even in the ſtreets of Lund[y].

11. Root annual, fibrous, whitiſh, jointed, generally crooked. Stem from a ſpan to a foot in height, upright not proſtrate, ſtriated, crooked, often tinged with purple, much branched; branches alternate, like the ſtem. Leaves alternate; lower ſeſſile, upper embracing, lanceolate, waved at the edges, ſlightly hairy and downy. Flowers terminating, numerous, broad, ſhort, cylindrical, on ſingle or branched leafy peduncles, the laſt blown ſtanding conſiderably above the others. Scales of the calyx numerous, awl-ſhaped, downy, the lower ones ſpreading. Florets of the ray very ſhort, three-toothed, often wanting. Briſtles on the anthers very minute and much ſhorter than the filaments. Seeds almoſt linear, brown, ſmooth; crowned with a ſeſſile egret of very few (about ſix, ſoon falling, *L.*) ſimple rays, ſhorter than the floret or ſeed[z].

Native of many parts of Europe, where water has ſtagnated during the winter, by road ſides, on the borders of ponds, &c. particularly in a ſtiffiſh ſoil. It flowers from auguſt to october.

Our plant always grows upright, and the upper part of the ſtem, the peduncles and leaves are woolly. The calyx is cylindrical, not globular[a].

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[i] Hort. kew.
[k] Jacquin.
[l] Hort. kew.
[m] Krocker and Villars.
[n] Linn. ſpec.
[o] Hort. kew.
[p] Curtis, Woodw. Mſs. Withering.

[q] Curtis and Withering.
[r] Hort, kew.
[s] Linn. mant.
[t] Hort. kew.
[u] Linn. ſpec. & ſyſt.
[x] Withering.
[y] Linn. ſuec.
[z] Woodw. Mſs. Curtis, Withering, Pollich.
[a] Withering.

The I. Pulicaria of other European botaniſts ſeems to be the ſame with ours, and not Linneus's. The deſcriptions of Haller, Scopoli, Pollich, and Krocker agree very well with our plant; that of the laſt author particularly is excellent.

This alſo is ſaid to drive away fleas and gnats, and is given by ſome to horſes for the botts[b].

12. This reſembles I. Pulicaria ſo much, that it ſhould be diſtinguiſhed from it with caution. The leaves are ſubſpatulate, by no means embracing or waved. Calyxes cylindrical not globular, with approximating not ſquarroſe ſcales. Peduncles longer, often in pairs. Ray of the corolla longer, diſk narrower.—Native of the Eaſt Indies and Arabia[c].

13. The flowers of this are ſcarcely peduncled. It is a native of Italy[d].

14. Stem pubeſcent, ſtriated, often one-flowered. Leaves ſomewhat rugged, naked, ſubſerrate, more rugged about the edge. Flower large, terminating, ſeſſile. Calycine ſcales lanceolate, the outer larger[e].

It is thus deſcribed by Gouan. — Root perennial. Stems ſeveral, a foot or eighteen inches high, (Miller ſays two feet, which may be true of garden plants) angular, ſtriated, ſtiff, quite ſimple, rugged, tinged with red. Leaves rigid, ſcattered, hard, ſerrulate and rugged at the edge. Peduncles terminating, in corymbs, one-flowered or two-flowered, leafy, rigid, ſwelling below the calyx. Calyxes very ſmooth, hard and ſquarroſe: ſcales ovate, ſhort, patulous with the tip curved back, ſerrulate-ciliate, bluntiſh; the inner ſharpiſh.] The flowers are pretty large, of a pale yellow colour, and appear in july, but are not followed by ſeeds in this country.

[In the autumn this plant puts on a different appearance: the ſtalk dies, and ſeveral young ones ſpring from the root, as in the ſeventh ſort, weak, red, clammy-haired: leaves ſoft, ovate-lanceolate, clammy-pubeſcent, ſeſſile, with a ſmell like Elder. The ſtem and leaves retain their pubeſcence through the winter; but in the ſpring they become bald, the lower leaves periſh, and the ſtems are leafy only at top.

On account of this variety in the habit, it was long miſtaken for I. ſalicina[f]; which it reſembles indeed, but has a ſtem rather round though ſtriated, whereas in I. ſalicina it is angular: the leaves are ſmaller, firmer, ſhorter, with the end not ſharp, as in the other; the notches unequal and a little leſs: the calyx has five rows of ſcales in that, but it has only two or three at moſt in this, ending ſharply; in I. ſalicina, they are blunt, but awned: the radical florets are narrower and longer alſo in that than in this[g].

Native of Italy and the South of France. Cultivated in 1768, by Mr. Miller[h].

15. This whole plant has ſome ſmell and a bitter unpleaſant taſte. Root perennial, conſiſting of numerous long and thick fibres. Stems ſeveral, upright, a foot and half high, roundiſh, leafy, ſometimes quite ſimple and terminated by a few peduncled flowers, ſometimes putting forth from ſeveral leaves ſimple axillary branchlets. Leaves acute, alternate, the uppermoſt quite entire. The ſtem branches and leaves have villoſe hairs more or leſs conſpicuous, but eſpecially along the edges and midrib of the leaves. Calyx ſmooth, ſcales ſubovate, the loweſt leafy, all except the inmoſt ſpreading ſquarroſely at the tip. Radial corollets ſharply and minutely three-toothed. Anthers briſtly. Seeds linear, brown, ſtriated, crowned with a hairy, ſeſſile down, appearing villoſe to the magnifier.

Native of Auſtria; flowering in auguſt and ſeptember[i].

16. Root perennial, aromatic, ſubaſtringent, ſmelling like cinnamon. Stem from a foot to two and even three feet in height, upright, ſmooth, hard, firm, tinged with red, grooved or angular towards the top, where it is uſually branched. Leaves alternate, ſeſſile or half-embracing, ſtiff, ſmooth, of a dark ſhining green, very ſlightly cut and ſomewhat rugged about the edge. Flowers terminating, on alternate, one-flowered, grooved, reddiſh peduncles, forming all together a corymb. Calycine ſcales in two rows, ſmooth, brown, lanceolate, curved back a little at the end. Flower an inch in diameter. Radial florets three-toothed. Down of the ſeed white ſeſſile[k].

It differs from the next ſpecies in having the ſtem ſmooth, grooved or angular at top; and the leaves ſmooth except that the edge is rugged[l].

Native of Germany, Switzerland, Auſtria, and the South of France.—Cultivated in 1683 by Mr. James Sutherland[m].

17. This has the habit of the preceding, but the leaves are broader, blunter, ſcarce apparently ſerrate, veined, rugged eſpecially on the edge and along the keel, and rough on both ſides with a ſubrufous woollineſs. The ſtem has leaves and ſtiffiſh hairs ſcattered over it, and is entirely round, not grooved and angular. The calyx is alſo as it were leafy.

Linneus ſuſpects that Seguier's plant (*ver.* 2. 211.) referred to here under *I. ſquarroſa*, may be the ſame with this, on account of the ſimilitude in the calyxes[n].

Villars ſays, that none of Linneus's ſynonyms accord with this ſpecies, he thinks however that the *hirta* of that author is the ſame with his plant, becauſe they both reſemble *I. ſalicina*, and the leaves are rugged and almoſt entire. He thus deſcribes it.—Stem ſimple, round, ſlightly villoſe, a foot high, terminated by two or three flowers, each on a ſeparate peduncle. Leaves a little reſembling thoſe of *I. ſalicina*, but wider, whitiſh, villoſe and more rugged on the edge. Calycine ſcales a little villoſe, rugged, curved outwards, in about two rows. Ray of the flower ſhorter and narrower than in *I. ſalicina*, and of a paler colour.

Pollich deſcribes the root as thick and fibrous. Stem upright, a foot or eighteen inches high, round, angular, ſubpubeſcent, branched. Leaves alternate, embracing, entire but commonly crenate, four inches long and half an inch wide, ſoft, pubeſcent, pale geeen, hanging down. Branches or peduncles three or four, ſhort, one-flowered, terminating. Calycine ſegments linear, narrow, turned back a little from the middle to the top, four lines long and a quarter of a line wide, pubeſcent and ſoft. Flowers handſome, an inch and half in diameter.

According to Krocker, it differs from the preceding, in having longer, broader, blunter leaves, ſcarce apparently ſerrate, hirſute, rugged eſpecially at the edge and along the keel. Stem wholly round with ſtiffiſh leaves and hairs, and higher. Calycine ſcales wider, the outer ones leafy, lanceolate, green. It differs from *I. dyſenterica* in having a higher ſtem, the lower flowers ſtanding above the upper ones, the calycine ſcales as above deſcribed, and the whole habit leſs tomentoſe and leſs white.

Native of France, Germany, Switzerland, Auſtria, Siberia.—Cultivated in 1759, by Mr. Miller; and flowering here from june to ſeptember[o].

18. The whole plant has ſoft white hairs thinly ſcattered over it, eſpecially the lower ſurface of the leaves. The flowers terminate the ſtem in a ſort of corymb, but the peduncles or branches are commonly one-flowered, with pedicelled glands ſcattered over them[p].]

It riſes with a ſtrong ſtalk about a foot and half high, pretty cloſely ſet with prickly hairs. Leaves about three inches long, and near one inch broad in the middle. Towards the upper part of the ſtalk there are ſingle flowers coming out from the axils at each joint, and the ſtalk is terminated by a cluſter of ſmall yellow flowers. It flowers in auguſt, but has not perfected ſeeds in England.

Native of Maryland and Carolina. The ſeeds were ſent to Mr. Miller from South Carolina (in the Dictionary he ſays Maryland) in the year 1742, by his late friend Dr. Thomas Dale, which ſucceeded in the Chelſea garden, where the plants flowered the following year; but the ſeaſon proving too cold to ripen the ſeeds, and the plants being biennial, they periſhed in winter.

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[b] Krocker.
[c] Linn. mant.
[d] Linn. ſpec.
[e] Linn. ſyſt.
[f] Gouan. illuſtr.
[g] Allioni.
[h] Hort. kew.
[i] Jacquin.
[k] Krocker, Pollich, Villars.
[l] Linn. ſpec.
[m] Hort. kew.
[n] Linn. ſpec. & ſyſt.
[o] Hort. kew.
[p] Linn. ſpec.

19. This bears much reſemblance to *I. ſalicina*, particularly in the leaves, which however are ſhorter; the peduncles are more numerous and lengthened. The flowers are cylindrical, and cluſtered at the top of the ſtalk into a corymb. But the principal difference, according to Monſ. Villars, is in the calyx; which is almoſt oval, lengthened, and compoſed of three rows of ſcales curved outwards at their upper extremity [q].

Pollich deſcribes the ſtem as upright, a foot or eighteen inches high, round, pubeſcent, ſomewhat rugged, a little branched at top and curved towards the bottom. Leaves alternate, half embracing, ovate-lanceolate, ſharpiſh, quite entire, pubeſcent, rugged all over but eſpecially at the edge, veined. Flowers ſmall, terminating in a ſort of cloſe umbel. Calyx cylindrical, the lower ſcales lanceolate, ſpreading, the reſt turned back a little at the top only.

Native of the South of France, Germany, Auſtria, Siberia.]

Mr. Miller ſays it grows between three and four feet in height: that the leaves are turned backward, are indented on their edges, and rough on their upper ſide; that it flowers in june, and the ſeeds ripen in autumn.

[20. Stem herbaceous, round, ſtriated, villoſe, upright, a foot high and more. Leaves elliptic, with minute remote toothlets, villoſe, pale beneath, netted, the lower ones longer, two inches in length. Peduncles filiform, alternate from the upper part of the ſtem, upright, tomentoſe. Calyxes ovate, villoſe, linear-awl-ſhaped, patulous.

Native of Japan.

21. Stem herbaceous, ſimple, ſtriated, villoſe as is the whole plant, flexuoſe-erect, a foot high, leafleſs at top. Root-leaves ſeveral, ſubpetioled or attenuated into broad petioles: ſtem-leaves ſeſſile, alternate; all oblong, villoſe, ciliate; the upper ones ſmall. Flower terminating, ſolitary. Calyx very hirſute, equal [r].

Thunberg having only once had ſpecimens of this, and theſe not very good ones, the genus yet remains doubtful; but it ſeems to approach neareſt to the Inulas.

Native of Japan.

22. Root perennial. Stems annual, from ſix inches to a foot in height, ſome one-flowered, others branched and few-flowered from the upper axils, almoſt ſmooth, when cultivated ſomewhat lanuginoſe at bottom. Leaves enſiform, ſometimes approaching to narrow-lanceolate, rigid, flat, ſhining, very finely ſerrulate. The flowers have a little ſmell. Scales of the calyx ſomewhat villoſe, ending in a narrow-lanceolate ſharp and very ſpreading leaflet, which is longer in the outer ones; the inmoſt ſcales have it not, and are pale green with brown tips and upright. Radial florets three-toothed. Anthers two-briſtled. Seeds brown, with a down five times its length, toothletted with the magnifier.

Native of Auſtria, on rocks among buſhes, flowering in auguſt [s].

23. Root perennial. Stems firm, ſmooth, ſtriated, much branched; branches cloathed with linear leaves, either three-toothed or entire at the extremity; they are crowded at the ends of the branches. (According to Withering, the lower leaves have teeth at the end, and ſometimes a few at the ſides; the upper ones are entire.) Flowers ſolitary, on thick peduncles, at the ſummit of the upper branches. Calycine ſcales numerous, yellow-greeniſh, fleſhy, awl-ſhaped. Seeds villoſe, crowned with a ſeſſile egret ſhorter than the florets, compoſed of few rays, when viewed with a glaſs finely toothed on one ſide [t].

Native of England, France, Spain, Portugal, the coaſts of the Mediterranean Sea, Barbary, &c. and Arabia: in ſalt-marſhes, in a muddy ſoil.] Mr. Miller ſays, he has obſerved it plentifully near Sheerneſs, in the iſle of Shepey, in Kent: [where Gerarde, Ray and other had ſeen it before. Ray remarked it in a marſh near Hurſt-Caſtle over againſt the Iſle of Wight, and on the rocks at Llandwyn in Angleſea. Mr. Newton found it on the bank of the river juſt above Fulbridge at Malden in Eſſex.]

According to Mr. Miller, it riſes with an upright ſtalk a foot and half high. Leaves ſucculent, fleſhy, an inch and quarter long and one-eighth of an inch broad, ending in three points, and coming out in cluſters. It flowers in july, and the ſeeds ripen in autumn.

The younger branches are frequently ſold in the London markets for Sampire; but this is a great abuſe, becauſe this plant has none of the warm aromatic taſte of true Sampire (Crithmum maritimum.)

Vahl affirms, that the Senecio ſucculentus of Forſkahl agrees in all reſpects with the ſpecimens of Inula crithmoides collected on the coaſts of the Mediterranean, and that in Barbary the ſtems are conſtantly perennial. He deſcribes the ſtem as ſhrubby (fruticuloſus), round, procumbent at the baſe, branched at bottom; the branches ſcattered and ſpreading. Leaves ſmooth, broader towards the top, the upper ones quite entire, the lower with a tooth on each ſide at the tip. Peduncle at the end of the branches, one-flowered, elongated, with minute linear ſcattered ſcales. Anthers two-briſtled. Egret ferruginous-purpliſh.

24. This plant has ſtrong fibres to the root. Stem a foot high, quite ſimple, villoſe. Root-leaves bluntly ſerrate, villoſe underneath, bluntiſh; ſtem-leaves few, lanceolate, ſeſſile, leſs ſerrate, villoſe underneath; the upper ones linear. Flowers rather large [u].

According to Gouan it is not unlike Senecio incanus, being hoary all over. Root-leaves petioled, from half an inch to an inch in lengh, blunt, ovate, quite entire; others crenate, and others again pinnatifid, with three or four pinnules on each ſide. Stem an inch, two inches, or a hand high. Stem-leaves alternate, one to four, linear, hoary, quite entire or pinnatifid. Flower large. Calyx tomentoſe-hoary. Peduncle ſwelling below the flower.

Haller ſays it is a handſome plant, with a woody root having abundance of fine fibres. Root-leaves thick, ſolid, white-tomentoſe on both ſides, ſome ovate, round, toothed, others twice, thrice or four times gaſhed, or pinnatifid; the pinnules roundiſh. Stem-leaves pinnatifid and ſimple. Stem not branched, naked, half a foot high, one-flowered. Flower an inch in diameter, ſpreading. Calyx tomentoſe, leaflets ſtraight, lanceolate, in three rows. Radial florets about fourteen, three-toothed.

Haller refers the ſynonym of Bauhin, here given, to Senecio Doronicum.

Native of the South of France, where it was found about Narbonne by Pech on the Corbieres a part of the Pyrenees. Alſo in the Uppet Valais, and in the mountains of Piedmont by Allione.—It was introduced here in 1778, by Monſ. Thouin, and flowers in july and auguſt [x].

25. Root hard, fibrous. Stem a long ſpan or a foot high, round, firm, upright. Leaves thickiſh, green above, ſubhirſute and wrinkled, beneath ſilky-tomentoſe, root-leaves petioled, elliptic, ſtem-leaves few, lanceolate, acute. Flower large. Calycine ſcales broad, tomentoſe, lanceolate, with the tips bent back. Florets of the diſk very numerous, of the ray as far as thirty, broad, three-toothed [y].

The ſtem is a foot or eighteen inches in height, according to Pollich, hairy, rugged, grooved or ſubangular, commonly not branched, but the branches, when there are any, alternate. Leaves alternate, ſeſſile, from upright ſpreading, ſuboblique, bluntiſh, pale green, rugged. Flower ſubſeſſile, handſome, an inch and more in diameter. Calycine leaflets looſe, lanceolate, ciliate, hairy, rugged, from upright ſpreading.

Villars ſays, it is lower than the preceding ſorts. The ſtem half a foot long, inclined at the baſe. Lower leaves oblong, blunt, ruſſet, villoſe; ſtem-leaves linear.

It varies with ſubſerrate leaves, and ſmall flowers: and when cultivated long in a garden, the leaves become wide, like thoſe of Verbaſcum, and the ſtem higher, ſtraighter, terminated by four or five flowers.

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[q] Linn. ſpec. & Villars dauph.

[r] Thunberg.

[s] Jacquin.

[t] Woodw. Mſs.

[u] Linn. ſpec.

[x] Hort. kew.

[y] Haller.

Allione remarks, that the leaves are not quite entire, but ſomewhat toothletted; and that the ſtem is not always one-flowered, but has ſometimes two and three flowers.

Linneus obſerves, that the calyx and ſtructure of the plant makes it very nearly allied to the Aſter; and that it is covered with a ſnowy white pubeſcence.

Native of Spain and the country about Montpellier and Vienna. In all the ſouthern part of Dauphiné. Near Turin, and in other parts of the King of Sardinia's dominions. In the vineyards of the Palatinate. In Switzerland and the Valais.—Cultivated in 1759, by Mr. Miller. It flowers in july and auguſt [x];] but rarely ripens ſeeds here.

[26. Native of South America.

27. Stem a foot high, ſomewhat rigid, corymbed, with a ſtrong ſmell like Tanſy. Flowers yellow, with a ſhort ray. Biennial. Compare *Conyza bifrons*, which botaniſts determine to be the ſame plant without any ray to the flower [a].]

Mr. Miller deſcribes it as a foot high, dividing into many branches. Leaves oval, hairy, half-embracing. Each branch is terminated by one large yellow flower, with the ſcales of the calyx oval. It flowers in july and auguſt, but never perfects ſeeds in this country.

[Native of Italy, Provence, and the Pyrenees. Cultivated by Mr. Miller in 1768.

28. Though this has a blue ray to the flower, in which it differs from all the Inulas, yet its appearance or habit is quite foreign to that of the Aſters. The branches are one-flowered. The anthers are tailed, as in moſt of the Inulas. The receptacle is honeycombed [b].

Native of the Cape of Good Hope.

29. Branches alternate, crowded, ſimple. Leaves alternate, crowded, curved back at the edge. Flowers ſolitary, terminating, ſeſſile. Calyxes oblong, imbricated. Ray of the flower pale whitiſh fleſh-colour.

30. This is a rugged ſhrub, having the appearance of a Larch, with rod-like branches. Leaves mucronate, ſmooth. Flowers ſubſolitary, ſeſſile, terminating. Egret ſimple [c].

Stem half a foot high, very rugged with the fallen leaves, like the Fir, with the branches in whorls. Leaves ſcattered, green. Scales of the calyx linear [d].—Both natives of the Cape.

31. This is allied to *Senecio foetidus*, with the habit of *Cineraria* [e]. In Linneus's ſpecies it is ſaid very much to reſemble *Erigeron foetidum*, except that it has radiate flowers. In the Mantiſſa it is ſaid to bear a great affinity to the genus *Cynara*.

Boccone, who firſt diſcovered this plant among the rocks of the iſland of Malta, thus deſcribes it.—Stems ſeveral, a foot high, ſtraight, branched, rough with harſh hairs. Leaves alſo hirſute, alternate, oblong, undivided, not unlike thoſe of Hyſſop or the Olive, blunt at the end. Flowers golden-coloured.]

32. This riſes with ſeveral ſhrubby ſtalks near four feet high, which divide into ſmaller branches. Leaves in cluſters, narrow, fleſhy, divided into three ſegments at their points. The flowers come out on the ſide of the branches at the top of the ſtalks; they are ſmall, and of a pale yellow colour, appearing in auguſt.

Native of the Canary iſlands. Cultivated by Mr. Miller.

33. This riſes with a ſhrubby ſtalk about two feet high, dividing into many ſmaller branches, which are hairy. Leaves narrow, ſtiff, ſeſſile; from the edges of theſe ariſe long hairs, which are ſtiff, and come out by pairs; at the end of the branches ariſe naked peduncles, four or five inches long, ſuſtaining one ſmall, yellow, radiated flower. It was diſcovered by Dr. Houſtoun at La Vera Cruz; and was cultivated by Mr. Miller before 1733.

34. Stem ten or twelve feet high, divided into ſeveral woody branches Leaves five inches long, and one inch and a half broad in the middle, ſmooth on the upper ſide, but on their under having three longitudinal veins. The flowers are produced at the end of the branches, having very large ſcaly calyxes; they are as large as a ſmall Sun-flower, of a pale yellow colour. It was diſcovered by Dr. Houſtoun at Carthagena in New Spain; and was cultivated by Mr. Miller before 1733.

PROPAGATION AND CULTURE.

1. Common Elecampane may be propagated by ſeeds, which ſhould be ſown in autumn ſoon after they are ripe; for if they are kept till the ſpring, they ſeldom grow; but where they are permitted to ſcatter, the plants will come up the following ſpring without any care, and may be either tranſplanted the following autumn; or if they are deſigned to remain, they ſhould be hoed out to the diſtance of ten inches, or a foot each way, and conſtantly kept clean from weeds; theſe roots will be fit for uſe the ſecond year.

But moſt people propagate the plants by offsets, which, if carefully taken from the old roots, with a bud, or eye, to each, will take root very eaſily; the beſt time for this is the autumn, as ſoon as the leaves begin to decay; theſe ſhould be planted in rows about a foot aſunder, and nine or ten inches diſtance in the rows; the ſpring following the ground muſt be kept clean from weeds, and if in autumn it is ſlightly dug, it will promote the growth of the roots; theſe will be fit for uſe after two years growth, but the roots will abide many years, if they are permitted to ſtand; however, the young roots are preferable to thoſe which are old and ſtringy. It loves a gentle loamy ſoil, not too dry.

2 to 5. 16, 17, 18, 19. 22. 24. 25. are abiding plants, which will thrive and flower in the open air in England; they may be all propagated by parting of their roots. The beſt time for doing of this is in autumn, at which time the plants may be removed; theſe may be intermixed with other flowering plants in the borders of large gardens, where they will make an agreeable variety during their continuance in flower. As theſe roots multiply pretty faſt, they ſhould be allowed room to ſpread, therefore ſhould not be planted nearer than two feet from other plants; and if they are removed every third year, it will be often enough, provided the ground between them is dug every winter, and, in ſummer, if they are kept clean from weeds, they will require no other care.

As ſome of theſe ſorts produce good ſeeds in England, they may be propagated by ſowing of the ſeeds in the autumn, on a border of light earth expoſed to the eaſt, where the morning ſun only is admitted; and in the ſpring, when the plants appear, they ſhould be kept clean from weeds till they are fit to remove, when they ſhould be tranſplanted on a ſhady border, ſix inches aſunder, obſerving to ſhade and water them till they have taken new root: and during the ſummer ſeaſon they ſhould be kept clean from weeds, and in autumn they may be tranſplanted into the borders where they are to remain.

[6. 10, 11. 23. Being natives of Europe, and common, are not cultivated in gardens.

7. See Erigeron viſcoſum.

8, 9, 12. Being annual plants, and natives of hot countries, muſt be propagated by ſeeds raiſed in a hotbed, and kept in the bark-ſtove.]

13, 14, 15. 27. are propagated by ſeeds, which ſhould be ſown on a bed of light earth early in the ſpring; in may the plants will appear, which ſhould be kept clean from weeds till they are fit to tranſplant, when they ſhould be planted in an eaſt border, at about ſix inches diſtance each way, watering and ſhading them till they have taken new root; after which they will require no other culture but to keep them clean from weeds till the autumn, when they ſhould be planted where they are deſigned to remain.

The fourteenth ſeldom continues above two or three years, and therefore young plants ſhould be conſtantly raiſed from ſeed to ſucceed the old ones.

[28. 29, 30. Being ſhrubby Cape plants, may be increaſed by cuttings, and muſt be preſerved in the dry ſtove.]

32. The thirty-ſecond ſort will not live abroad in the open air in England, during the winter ſeaſon, ſo muſt be removed into ſhelter in autumn, but ſhould have

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[x] Hort. kew. [a] Linn. ſpec. [b] Berg. & Linn. ſyſt. [c] Linn. amoen. [d] Linn. mant. [e] Linn. ſyſt.

as much free air as poſſible at all times, when the weather is mild, otherwiſe it is apt to draw up weak. In cold weather the plants muſt have very little water, for their ſtalks and leaves being ſucculent, they are very apt to rot with too much wet; in ſummer they ſhould be placed abroad with other hardy exotic plants in a ſheltered ſituation, where they will add to the variety, though they are plants of no great beauty, and ſeldom flower in England, unleſs the ſummer is very warm. This is eaſily propagated by cuttings, any time in ſummer, which, if planted in a ſhady border, will take root in a ſhort time.

33. This is propagated by cuttings during the ſummer ſeaſon, which muſt be planted on a bed of light earth, and ſhaded till they have taken root; after which the plants muſt be treated in the ſame manner as other hardy exotics, ſheltering them from froſt in winter.

34. This being too tender to live in the open air in England, muſt be conſtantly kept in the bark ſtove. It is propagated by ſeeds, which muſt be procured from the country where it naturally grows, for it does not produce any here; theſe muſt be ſown upon a hot-bed, and when the plants are fit to remove, they ſhould be each put into a ſmall pot filled with light earth, and plunged into a freſh hot-bed; treating them in the ſame manner as other tender plants from the ſame country.

[Inula. See *Percidium.*

Inuloides. See *Conyza.*

Job's-tears. See *Coix.*

Johnsonia. See *Callicarpa.*

Jointed Glass-wort. See *Salicornia.*

Iolithus. See *Byſſus.*

JONCQUETIA. (*So named in memory of Denis Joncquet. He publiſhed a catalogue of his own garden, under the title of* Hortus, ſ. Index Plantarum, quas colebat a. 1658 & 1659. 4°.)

Lin. gen. Schreb. n. 785. Tapirira. *Aubl. t.* 188.

Claſſ. 10. 4. Decandria Tetragynia.

GENERIC CHARACTER.

Cal. *Perianth* five-leaved: *leaflets* roundiſh, deciduous.

Cor. *Petals* five, roundiſh, concave, ſpreading, longer than the calyx.

Stam. *Filaments* ten, ſhorter than the corolla, growing to a glandule. *Anthers* roundiſh.

Pist. *Germ* pentagonal, ſurrounded by a glandule. *Styles* none. *Stigmas* five.

Per. *Capſule* nearly globoſe, roundiſh-pentacoccous, one-celled, five-valved.

Seeds five, ovate, arillated, each affixed to the valves.

ESSENTIAL CHARACTER.

Cal. five-leaved. *Pet.* five, ſpreading. *Filam.* growing to a glandule. *Styles* none. *Capſ.* ſubglobular, one-celled, five-valved, five-ſeeded.

SPECIES.

1. Joncquetia guianenſis.
Aubl. guian. 1. 470. *t.* 188. (Tapirira).

DESCRIPTION, *&c.*

This is a very large tree, with a trunk forty or fifty feet high, and two or three feet in diameter, with a ſmooth ruſſet bark, and a white uncompact wood. It has a great number of branching boughs at top, thoſe in the middle erect, the reſt horizontal and ſpreading in all directions. Leaves alternate, unequally pinnate; leaflets in three, four or five pairs, almoſt but not quite oppoſite, ſmooth, thin, entire, oval, acuminate; the largeſt ſix inches in length, and two inches and a half in width, the lower ones of each leaf ſmaller. Petiole almoſt cylindric, eight or nine inches long, thick and fleſhy at the baſe. Flowers ſmall, numerous, white, axillary and terminating, in large wide ſcattered panicles.

Native of Guiana, where it is called Tapiriri. It flowers in november, and bears fruit in april[a].

Iondraba. See *Biſcutella.*]

Jonquill and Jonquilla. See *Narciſſus.*

Ionthlaspi. See *Alyſſum* and *Clypeola.*

[Ipecacuanha. See *Viola.*]

IPOMOEA. (*From* Ιψ, ιπος, *Convolvulus, and* ομοιος, *ſimilitudo: from its ſimilitude to the Convolvulus.*)

Lin. gen. n. 216. *Reich.* 232. *Schreb.* 288. *Gærtn. t.* 134, 178. *Juſſ.* 134. Quamoclit. *Tournef.* 39. Volubilis. *Dill. elth.* 318.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Campanaceæ.—Convolvuli,* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* five-toothed, oblong, very ſmall, permanent.

Cor. one-petalled, funnel-form. *Tube* ſubcylindric, very long; *border* five-cleft, ſpreading; *diviſions* oblong, flat.

Stam. *Filaments* five, awl-ſhaped, almoſt the length of the corolla. *Anthers* roundiſh.

Pist. *Germ* roundiſh. *Style* filiform, length of the corolla. *Stigma* headed-globoſe.

Per. *Capſule* roundiſh, three-celled.

Seeds ſome, ſubovate.

Obs. *This genus is rather too nearly allied to* Convolvulus; *but differs in the lengthened tube of the corolla, and the headed ſtigma.*

ESSENTIAL CHARACTER.

Cor. funnel-form. *Stigma* headed-globoſe. *Capſ.* three-celled.

SPECIES.

* *Flowers diſtinct.*

1. Ipomoea Quamoclit. *Winged-leaved Ipomoea.*
Lin. ſpec. 227. *Reich.* 1. 448. *hort. upſ.* 39. *cliff.* 60. *fl. zeyl. n.* 77. *Lour. cochinch.* 111. *Mill. fig. t.* 214. (Quamoclit). *Curt. magaz. t.* 244. *Brown. jam.* 155. 1. *Sabb. hort.* 1. *t.* 85.
Quamoclit. *Camer. hort.* 135. *Bauh. hiſt.* 2. 177. *Raii hiſt.* 730. *Ger. emac.* 1598.—ſ. Jaſminum americanum. *Cluſ. cur. poſt.* 4. *t.* 5.—fol. tenuiter inciſis & multifidis. *Tourn. inſt.* 116. *Burm. zeyl.* 197.
Convolvulus pennatus exoticus rarior. *Col. aquat.* 73. *t.* 72. *Mor. hiſt.* 2. 18. *ſ.* 1. *t.* 4. *f.* 7.—tenuifolius americanus. *Park. parad.* 358. *n.* 3.
Jaſminum millefolii folio. *Bauh. pin.* 398.
Alterum genus Gelſemini rubri. *Cæſalp.* 134.
Flos Cardinalis. *Rumph. amb.* 5. 421. *t.* 155. *f.* 2.
Tsjuria-cranti. *Rheed. mal.* 11. 123. *t.* 60.
Leaves pinnatifid linear, flowers ſubſolitary.

[2. Ipomoea rubra. *Upright Ipomoea.*
Lin. ſyſt. 204. *Reich.* 1. 448.
Polemonium rubrum. *Lin. ſpec.* 231.
Quamoclit pennatum, &c. *Dill. elth.* 321. *t.* 241. *f.* 312.
Leaves pinnatifid linear, flowers in racemes pendulous.

3. Ipomoea umbellata. *Umbelled Ipomoea.*
Lin. ſpec. 227. *Reich.* 1. 449. *Plum. ſpec.* 3. *ic.* 92, *f.* 2. (Quamoclit).
Leaves digitate in ſevens, peduncles umbelled very ſhort.

4. Ipomoea carolina. *Carolina Ipomoea.*
Lin. ſpec. 227. *Reich.* 1. 449. *Cateſb. car.* 2. *t.* 91. (Convolvulus).
Leaves digitate, leaflets petioled, peduncles one-flowered.]

5. Ipomoea coccinea. *Scarlet-flowered Ipomoea.*
Lin. ſpec. 228. *Reich.* 1. 449. *hort. upſ.* 39. *cliff.* 66. *Swartz obſ.* 65. *Curt. magaz.* 221. *Sauv. meth.* 114. *Brown. jam.* 155. 3.
Quamoclit americana, folio hederæ, flore coccineo. *Comm. rar. t.* 21.
Convolvulus cocc. fol. anguloſo. *Plum. amer.* 89. *t.* 103. *Raii ſuppl.* 380.
Leaves cordate acuminate angular at the baſe, peduncles many-flowered.

[6. Ipomoea lacunoſa. *Starry Ipomoea.*
Lin. ſpec. 228. *ſyſt.* 204. *Reich.* 1. 449.
Convolvulus ſtellatus, periplocæ rotundioris folio. *Dill. elth.* 103. *t.* 87. *f.* 102.
C. carolinianus, flore parvo ſingulari, &c. *Raii ſuppl. app.* 243. *n.* 65.
Scammonia rotundifolia virginiana. *Park. theat.* 164. *n.* 5.
Leaves cordate acuminate ſcrobiculate angular at the baſe, peduncles one or two-flowered ſhorter than the flower.]

7. Ipomoea ſolanifolia. *Nightſhade-leaved Ipomoea.*
Lin. ſpec. 229. *Reich.* 1. 449.

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[a] Aublet.

Quamoclit ſolani folio, flore roſeo. *Plum. ſpec.* 3. *ic.* 94. *f.* 1.

Leaves cordate acute quite entire, flowers ſolitary.

8. Ipomoea tuberoſa. *Tuberous-rooted Ipomoea.*

Lin. ſpec. 227. *ſyſt.* 204. *Reich.* 1. 450. *hort. upſ.* 39. *Jacqu. obſ.* 1. 39. *amer. pict.* 20. *Lour. cochinch.* 112. *Brown. jam.* 155. 6. *Sloan. jam.* 1. 152. *t.* 96. *f.* 2. *Pluk. phyt. t.* 276. *f.* 5. (Convolvulus).

Leaves palmate, lobes in ſevens lanceolate acute quite entire, peduncles three-flowered.

9. Ipomoea digitata. *Hand-leaved Ipomoea.*

Lin. ſpec. 228. *Reich.* 1. 450.

Quamoclit fol. digitatis, flore coccineo. *Plum. ſpec.* 3. *ic.* 92. *f.* 1.

Leaves palmate lobes in ſevens lanceolate blunt, peduncles three-flowered.

[10. Ipomoea bona nox. *Prickly Ipomoea.*

Lin. ſpec. 228. *Reich.* 1. 450. *hort. cliff.* 496. *Gærtn. fruct.* 2. 247. *Brown. jam.* 155. 2. *Sloan. jam.* 1. 151. *t.* 96. *f.* 1. *Pluk. phyt. t.* 276. *f.* 3. (Convolvulus).

Smilax aſpera Indiæ occidentalis. *Bauh. pin.* 296.

Leaves cordate acute quite entire, ſtem prickly, flowers in threes, corollas undivided.

11. Ipomoea campanulata. *Bell-flowered Ipomoea.*

Lin. ſpec. 228. *Reich.* 1. 450. *Rheed. mal.* 11. 175. *t.* 56.

Leaves cordate, peduncles many-flowered, outer perianth orbicular, corollas bell-ſhaped lobed.]

12. Ipomoea violacea. *Purple-flowered Ipomoea.*

Lin. ſpec. 229. *ſyſt.* 205. *Reich.* 1. 451. *Sauv. monſp.* 114. *Sloan. jam.* 1. 154. *t.* 98. *f.* 1. (Convolvulus).

Quamoclit fol. ampliſſimis, cordiformibus. *Plum. ſpec.* 3. *ic.* 93. *f.* 1.

Leaves cordate quite entire, flowers crowded, corollas undivided.

[13. Ipomoea verticillata. *Whorl-flowered Ipomoea.*

Vahl ſymb. 3. 33. *Forſk. deſcr.* 44.

Leaves cordate, peduncles axillary in threes reflex, calyxes hiſpid.

14. Ipomoea carnea. *Fleſh-coloured-flowered Ipomoea.*

Lin. ſpec. 1668. *ſyſt.* 205. *Reich.* 1. 451. *Jacqu. amer.* 26. *t.* 18. *pict.* 19. *t.* 25.

Leaves cordate ſmooth, peduncles many-flowered, corollas margined.

15. Ipomoea repanda. *Repand-leaved Ipomoea.*

Lin. ſpec. 1668. *ſyſt.* 205. *Reich.* 1. 451. *Jacqu. amer.* 28. *t.* 20. *pict.* 20. *t.* 27.

Leaves cordate oblong repand, peduncles branched in cymes.

16. Ipomoea filiformis.

Lin. ſyſt. 205. *Jacqu. amer. pict.* 20. *t.* 26.

Leaves cordate blunt with a point quite entire, peduncles in racemes filiform.

17. Ipomoea haſtata. *Halbert-leaved Ipomoea.*

Lin. ſyſt. 205. *Reich.* 1. 451. *mant.* 204. *Burm. ind.* 150. *t.* 18. *f.* 2.

Leaves ſagittate-haſtate, peduncles two-flowered.

18. Ipomoea ſanguinea. *Bloody-flowered Ipomoea.*

Vahl ſymb. 3. 33.

Leaves cordate three-lobed, ſide-lobes angular and ſub-lobed behind, peduncles three-flowered, calyxes ſmooth.

19. Ipomoea glaucifolia. *Glaucous Ipomoea.*

Lin. ſpec. 229. *Reich.* 1. 451. *hort. cliff.* 67.

Convolvulus ſtellatus arvenſis, folio glauco. *Dill. elth.* 103. *t.* 87. *f.* 101.

Leaves ſagittate truncated behind, peduncles two-flowered.]

20. Ipomoea triloba. *Three-lobed Ipomoea.*

Lin. ſpec. 229. *Reich.* 1. 451. *Thunb. jap.* 86. *Kæmpf. amoen.* 5. 856.

Leaves three-lobed cordate, peduncles three-flowered.

[21. Ipomoea parviflora. *Small-flowered Ipomoea.*

Vahl ſymb. 3. 34. *Sloan. jam.* 1. 153. *t.* 97. *f.* 1.

Leaves cordate five-lobed palmate, umbels axillary peduncled, calyxes and capſules hairy.

22. Ipomoea hederifolia. *Ivy-leaved Ipomoea.*

Lin. ſpec. 229. *Reich.* 1. 452.

Quamoclit hederæ folio trifido. *Plum. ſpec.* 3. *t.* 93. *f.* 2.

Leaves three-lobed cordate, peduncles many-flowered in racemes.]

** *Flowers aggregate.*

23. Ipomoea hepaticifolia. *Hepatica-leaved Ipomoea.*

Lin. ſpec. 230. *ſyſt.* 205. *Reich.* 1. 452. *Fl. zeyl. n.* 79. *Lour. cochinch.* 112. *Burm. ind.* 50. *t.* 20. *f.* 2. *Herm. lugdb.* 182. *prodr.* 327. (Convolvulus).

Leaves three-lobed, flowers aggregate.

[24. Ipomoea tamnifolia. *Black-Bryony-leaved Ipomoea.*

Lin. ſpec. 230. *Reich.* 1. 452. *Dill. elth.* 428. *t.* 318. *f.* 410. (Volubilis).

Leaves cordate acuminate hairy, flowers aggregate.

25. Ipomoea Pes tigridis. *Palmated Ipomoea.*

Lin. ſpec. 230. *Reich.* 1. 452. *Fl. zeyl. n.* 78. *Herm. lugdb.* 184. *t.* 187. *Act. bonon.* 11. *p.* 2. 362. *t.* 23. *f.* 2. (Convolvulus). *Dill. elth.* 429. *t.* 318. *f.* 411. (Volubilis). *Rheed. mal.* 11. 121. *t.* 59.

Leaves palmate, flowers aggregate.

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26. Ipomoea ſimplex. *Entire-leaved Ipomoea.*

Thunb. prodr. cap. 36.

Leaves lanceolate entire, flowers ſolitary.

27. Ipomoea zeylanica. *Ceyloneſe Ipomoea.*

Gærtn. fruct. 2. 482.

Floral leaflets under each calyx one, lanceolate ſeſſile, permanent, three times as long as the calyx.]

DESCRIPTIONS, &c.

1. This is an annual plant, riſing with two oblong pretty broad ſeed-leaves, which remain a conſiderable time before they fall off. Stems ſlender, twining, and riſing by ſupport to the height of ſeven or eight feet; ſending out ſeveral ſide-branches, which twine about each other and the principal ſtem, and about any neighbouring plants. The leaves are compoſed of ſeveral pairs of very fine narrow lobes, not thicker than fine ſowing thread, about an inch long, of a deep green, either oppoſite or alternate. The flowers come out ſingly from the ſide of the ſtalks, on ſlender peduncles about an inch long. The tube of the corolla is about the ſame length, narrow at bottom, but gradually widening to the top; where it ſpreads open flat, with five angles; it is of a moſt beautiful ſcarlet colour, and makes a fine appearance.

[Loureiro affirms that the capſule is uſually four-celled, which perhaps may be owing to his having ſeen it only in a ſtate of luxuriance from cultivation; for he does not ſay that he obſerved it wild in China and Cochinchina.

Browne ſays it is cultivated in many of the gardens of Jamaica, on account of its beautiful flowers, and minutely diſſected thick foliage, that it is a weakly climber, and ſeldom riſes above four feet from the ground. He gives it the name of *American Jeſſamine.*] Mr. Miller ſays it is called in the Weſt Indies *Sweet William*, and by ſome *Indian Pink*. The flowers appear in july and auguſt, and continue in ſucceſſion great part of ſeptember. He ſays it grows naturally in both Indies, and that in the Weſt India iſlands it runs up the hedges to a conſiderable height. [It is certainly a native of the Eaſt Indies, whence it was probably tranſported to the Weſt Indies, of which it does not ſeem to be aboriginal.

Cæſalpinus firſt (1580) gave a ſhort deſcription of this plant, as then newly arrived from India, under the name of *Gelſeminum rubrum alterum*; next to him, Camerarius gave a figure and deſcription of it, by the name of *Quamoclit*; and Columna, following Camerarius, deſcribed and figured it more accurately[a].—Our old authors regarded it as a native of America, and Parkinſon calls it, *The red Bell-flower of America.* He ſays, (1629) "it is a rare plant, that we ſeldom "have, and can hardly keep, that it periſhes every "year, and with us will ſeldom come to flower, be"cauſe our cold nights and froſts come ſo ſoon, before "it can have comfort enough of the ſun to ripen it." Johnſon, in the appendix of his edition of Gerarde's Hiſtorie of Plants calls it *Winged Binde-weed*, and gives a figure from Cluſius's curæ poſteriores, with a deſcription borrowed from Columna. He ſays, "it is ſo tender "a plant, that it will not come to any perfection with

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[a] Ray hiſt. and Ger. emac.

“ us, unleſs in extraordinary hot years, and by artifi-
“ cial helps. By reaſon of the great plenty of leaves
“ and flowering ſtalks or branches winding themſelves
“ about artificial hoops, croſſings, or other faſhioned
“ works of reeds, or the like, ſet for winding herbs
“ to climb upon, it much delights the eye of the be-
“ holder, and is therefore kept in pots, in gardens of
“ pleaſure.”

2. The young plants, the firſt year, produce numerous leaves, ſpreading in a circle, elegantly jagged, ſomewhat like the finer ones of Coronopus, or Buck's-horn Plantain; from the centre of theſe, the ſecond year, ariſes a ſtraight ſtem, ſimple or unbranched below, but having ſeveral branchlets on the upper part; it is the thickneſs of a wheat ſtraw at bottom, and three quarters of a yard or more in height; it is clothed from top to bottom with leaves, reſembling thoſe of Hottonia, and placed alternately; the lower ones broader, longer, and divided into more ſegments; which are fewer and more finely cut the nearer they are to the top. Flowers from the top of the ſtem, and the ends of the ſide branchlets, peduncled, pendulous, uſually ſolitary, but forming all together a thyrſe. (raceme, *Lin.*) Corolla of a bright red colour, darker on the outſide; within paler, and variegated with white ſpots and purple ſtreaks. When the ſtem puſhes up, the root-leaves wither away; and the ſtem itſelf, though rigid, ſoon periſhes after flowering [b].

According to Linneus, who had it from Ellis, it is of a doubtful genus. He firſt ranged it with the Polemoniums, though he allowed the appearance to be different. The ſtem is ſuffruticoſe and ſtraight; the plant is not milky; the calyx is one-leafed, with a ſhort tube, and awl-ſhaped teeth longer than the tube. Stamens inſerted into the middle of the tube of the corolla without valves [c].

Native of Carolina, two hundred and fifty miles above Charles Town, in low ſandy places, where it was found by Cateſby flowering in june. He ſent the ſeeds to Dr. James Sherard, and it was cultivated in the Eltham garden before 1732. It flowered there in october, but the plant periſhed [d].

3. Leaves petioled. Leaflets ſeven, lanceolate, quite entire, acuminate, ſeſſile, almoſt equal. Peduncles axillary: flowers very abundant. Capſules oblong, three-cornered, acuminate, ſmooth [e]. Native of South America.

4. Stem ſlender, trailing. Leaflets ſeven, oblong, broad at the end, and blunt. Outſide of the corolla light green, inſide purple; border ſix-cleft, with the verges bent back. On many of the Bahama iſlands, on rocks [f]. Found there by Mr. Cateſby.

5. Stem herbaceous, twining, quadrangular, ſmooth, flexuoſe. Leaves petioled, pentangular, ſmooth on both ſides. Peduncles very long, axillary, upright, round, two-parted-bifid, on one-flowered pedicels. Flowers long, ſcarlet, larger than thoſe of the firſt ſort. Calyx five-cleft, with lanceolate ſegments. Tube of the corolla narrower at the baſe, long, columnar, curved a little and ſhining: border plaited, blunt; baſe nectareous. Stamens longer than the corolla: anthers whitiſh. Germ ſuperior: ſtigma marked with four lines. Capſule four-celled, four-ſeeded. Seeds ſolitary, roundiſh-angular, wrinkled, black [g].]

It is an annual plant, ſix or eight feet high. The corolla is not ſo deep-coloured as that of the firſt ſort; and there is a variety with orange-coloured flowers.

[Browne obſerves, that it is remarkable for the curved or arched figure of the tube in the corolla.

Native of the Weſt Indies. Cultivated in 1759 by Mr. Miller. It flowers from june to ſeptember [h].

6. Stems from a foot to two feet in height, ſlightly angular, procumbent unleſs ſupported, and then climbing. Leaves having little pits on the ſurface, (whence Linneus's trivial name), on petioles from half an inch to an inch in length; from the axils of theſe, on ſhort peduncles, ſpring the flowers, uſually ſolitary, but ſometimes two on a peduncle, ſmall, white, with the edges ſlightly tinged with purple, and the ſegments ſharp-pointed; the tube is ſhorter than in I. Quamoclit, the ſtamens ſtand out leſs, and are cloſer together. The ſeed-veſſel ordinarily contains in two cells four ſeeds, which are convex on one ſide, and flat on the other; it is ſlightly hairy towards the top, but all the other parts of the plant are free from hairs. The ſeed-leaves are two-lobed, and reſemble the ſeed of the Acer or Maple in form [i].

Linneus ſays that it bears a great reſemblance to I. coccinea, but that the peduncles are one-flowered, or at moſt two-flowered; the tube of the corolla thicker, and the corolla itſelf of a different colour [k].

It is an annual plant, and a native of Virginia and Carolina, whence the ſeeds were ſent to the Eltham garden [l], and there it was cultivated before 1732: but we had it ſooner than this, according to Parkinſon's Theatre of Plants, publiſhed in 1640. It flowers here in july [m].]

7. This reſembles I. coccinea, but the leaves have no angles, and the flowers are of a roſe-colour. [Native of America. Cultivated by Mr. Miller in 1759.

8. Root tuberous. Stems ſeveral, ſhrubby, twining, woody at bottom, and the thickneſs of the human thumb. Leaves ſmooth, on long petioles the ſize of a man's hand. Peduncles many-flowered, axillary. Flowers yellow, (bright yellow, *Miller.* ſulphur-coloured, *Linn.* purple, *Lour.*) handſome, two inches in diameter, ſmelling ſweet. Capſule membranaceous, ſhining, ſubpellucid, ſquare with blunted angles, large, two-celled; in each cell two black, villoſe ſeeds, among the largeſt of the genus.

This plant is wonderfully beautiful when in flower, and the very fragrant odour of the flowers gives it an additional value [n]. It is much uſed in the Weſt Indies for arbours, for which it is very fit, on account of the multitude of its branches and ever-green leaves, which the ſun cannot penetrate. It ſpreads to ſuch an extent, that it may be carried over an arbour of three hundred feet in length, from one root [o]. Every part of the plant is purgative, and abounds with milk; probably Scammony might be made from the milky juice of the root [p]. Loureiro affirms that the tubers are eatable, like Batatas, (Convolvulus) which they reſemble very much in taſte, ſize and ſhape.

Native of the Weſt Indies, where, however, Jacquin informs us that he found it wild only in St. Domingo, on the higher mountains near Cape François. Browne thinks that it was introduced into Jamaica from the Continent. It is called in that iſland *Seven-year Vine* or *Spaniſh Arbour-Vine.* If I. tuberoſa of Loureiro be the ſame with this, which ſeems doubtful, from his account of the colour of the flower and quality of the root [q]; it is found alſo in Cochinchina, but originally from Siam.]

9. This has a ſmooth twining ſtalk, which riſes four or five feet high. Leaves ſeſſile, five-lobed. The flowers come out from the ſide of the ſtalk upon ſhort peduncles, which ſuſtain two or three purple flowers. Seeds brown. Native of the Weſt Indies. [Cultivated by Mr. Miller in 1759.

10. This is an annual plant, growing to a very great length, covering ſometimes many trees, or the banks of rivers for many paces, having a round and reddiſh ſtalk, armed with blunt, herbaceous, ſhort-variouſly ſhaped prickles, winding itſelf about any thing it comes near, or creeping along the ſurface of the ground. At unequal diſtances come out on petioles ſix inches long, ſmooth petioled leaves, four inches long, and as broad from ear to ear at the baſe, there being a ſinus or hollow from the ears to the point. The flowers are axillary, many, on peduncles an inch long; the tube of the corolla is ſeldom leſs than from three to four inches in length; the border is white, five inches in diameter, a little ſinuated, and has five green ſtreaks on the outſide [r].

Browne obſerves that the leaves of this plant, and indeed of all the ſpecies both of Convolvulus and

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[b] Dillenius.
[c] Linn. ſyſt.
[d] Dill. elth.
[e] Plumier.
[f] Cateſby.
[g] Swartz.
[h] Hort. kew.
[i] Dillen. elth.
[k] Linn. ſpec.
[l] Dillen.
[m] Hort. kew.
[n] Jacquin.
[o] Jacqu. Browne, Long, 804.
[p] Long.
[q] See Sloane, 1. 152.
[r] Sloane.

Ipomoea, are very variable, being ſometimes in the form of a heart, and ſometimes lobed, or panduriform: ſometimes alſo the ſtem only is prickly, ſometimes both ſtem and petioles.

Gærtner deſcribes the fruit not as a capſule, but as a juiceleſs berry, globular, one-celled, rufeſcent or black, ſmooth: rind leathery, when ripe ſeparating from the pulp, within covered by a very fine white membrane, and marked with ſix longitudinal ſtreaks: pulp fungoſe, ſnowy-white, thin, perforated by filiform nutritious veſſels, ſo cloſely adhering to the ſeeds, that it may be ſeparated along with them into four parts. Receptacle none, except the conical riſing at the bottom of the berry, to which the ſeeds and nutritive veſſels of the pulp are fixed. Seeds four, ovate, on one ſide convex with a groove, on the other angular, perforated near the baſe with a large umbilical aperture; they are ſmooth, and of a pale teſtaceous colour.

He refers the other ſpecies of Ipomoea (except his zeylanica) to the genus Convolvulus, becauſe they have a genuine capſule, ſeparable into valves.

Native of the Weſt Indies. Introduced in 1773, by John, Earl of Bute. It flowers here in july and auguſt [s].

11. Corolla thicker than in the reſt. Under the five-parted perianth there is another ſmaller orbicular perianth, which is quite entire. Native of the Eaſt Indies [t].

12. The round green ſarments or ſtalks of this plant mount about any tree, ſhrub or hedge, to a great height, (ten or twelve feet, *Miller.*) cloathing them green, with their many branches and leaves; theſe are two inches and a half long, and two inches broad at the round baſe from one ear to the other, ſmooth, yellowiſh green, on petioles an inch and quarter in length. Flowers pale purple, (blue, with their brims not angular, but entire, *Miller.*) very large, bell-ſhaped. Capſule brown, having above five valves, four round protuberances, and in each of them a large triangular ſmooth ſolid whitiſh brown ſeed [u]. Theſe diviſions of the capſule are probably not natural, but the effect of luxuriance. Native of the Weſt Indies. Cultivated by Mr. Miller in 1759.

13. Stem ſeeming to be decumbent, flexuoſe, half a foot high, branched at the baſe, having hairs ſcattered over it, few in number below, but more abundant above. Leaves petioled, an inch long, bluntiſh, with a ſhort dagger point, veined, with a few hairs on the veins underneath, when more advanced ſmoother. Lower petioles twice as long as the leaves, and ſmooth; the upper ones hairy. Peduncles from all the axils from top to bottom, angular, thickening upwards, one-flowered; having a few ſhort linear bractes at the baſe. Leaflets of the calyx ovate, acute, when young covered with long hairs, but when farther advanced ſmoother and ciliate. Capſule the ſize of a pea, and ſmooth. Seeds tomentoſe, and ſomewhat ſilky [x].

14. Stem ſhrubby, in open places almoſt upright, and ſupporting itſelf to the height of a man, but in woods climbing twenty feet high; the whole plant, except the ſeeds, very ſmooth. Bark aſh-coloured. The younger green branches are adorned with leaves, which are roundiſh-cordate, acuminate or blunt, with a ſmall point, quite entire, veined, alternate, ſometimes eight inches in length and breadth, on petioles three inches long. Peduncles ſubracemed and terminating. Flowers elegant, but void of ſmell, three inches in diameter, fleſh-coloured, opening in ſucceſſion. Capſules brown and ſhining, containing blackiſh ſeeds wrapped up in abundance of brown-aſh-coloured wool.

This plant having many things in common with Convolvulus, might not unaptly be referred to that genus; but in truth there are no conſtant limits between them.

Found by Jacquin every where about Carthagena in America, in ſandy coppices near the coaſt; flowering in february and march. It grew from ſeed to a conſiderable height in the ſtove of the Imperial garden at Vienna, but periſhed without bearing ſeed.

15. The plant is very ſmooth all over, and perhaps annual. Stems round, twining. Leaves bluntly acuminate, with a ſmall point, green above, but glaucous with violet-coloured veins on the back, petioled. Common peduncles ſolitary, axillary, thick, almoſt the length of the leaves: partial commonly trichotomous: proper frequently falling along with the flowers; which are elegant, very ſhining, ſcarlet, inodorous, numerous, two inches in diameter, but the ſegments being plaited on the ſides appear at firſt ſight much narrower and lanceolate. Native of Martinico, in coppices on the hills near the town of St. François; flowering in december and january [y].

16. The whole plant is very ſmooth, with round twining ſtems climbing up ſhrubs to the height of ten feet. Leaves extremely blunt, with a ſtipular point, varying much in ſize, and on ſhort petioles. Racemes axillary, very looſe, ſlender and longer than the leaves, ſpreading out ſtiffly. Flowers purple, inodorous, very numerous. Capſules brown, incloſing ſmooth black ſeeds. Native of woods in Martinico, eſpecially on the borders of the ſalt marſhes; flowering from november to january [z].

17. Leaves cordate-haſtate, with two ears on each ſide, on a plant that did not flower. Flowers yellow, according to Burmann [a]. Native of Java.

18. This plant is wholly ſmooth. Stem twining, angular, with decurrent lines. Leaves petioled, an inch and half long and more, five-nerved; lobes attenuated, blunt, mucronate; the middle one lanceolate-oblong; the ſide ones lanceolate, divaricate, broader on the outer ſide, produced at the baſe into an angle, which is commonly ſublobed. Peduncles longer than the leaf, pedicels lateral, two or three-flowered. Calyx ſmooth; leaflets oblong, acuminate, with an awn the length of the leaflet. Corolla of the ſame ſize and form with I. coccinea. Obſerved in the iſland of Santa Cruz by Weſt [b].

19. Root perennial. The whole plant is ſomewhat glaucous and ſmooth. It grows half a yard and upwards in height, with a ſlender twining ſtem. The firſt leaves are oblong-cordate and ſcarcely angular, like thoſe of the ſmaller field Convolvulus, next they become more angular, and finally larger, more concave, and ſtill more angular, ſagittate and even haſtate, ſometimes cut off in a ſtraight line, or truncate at the baſe, but generally irregular at leaſt on one ſide; reſembling thoſe of the great wild Convolvulus or Bindweed. Peduncles axillary, ſolitary, ſlender, from an inch and half to two inches in length, (on older plants ſhorter) uſually two-flowered, but ſometimes one-flowered only. Flowers ſmall, fleſh-coloured or very pale purple, of the figure and ſize of Venus's Looking-glaſs (Convolvulus Speculum); with a ſhort tube concealed within the calyx, and ſhort ſpreading ſegments: they do not expand here till about noon; but appear the greateſt part of the ſummer. Capſules three-celled or four-celled, with one ſeed in each cell. Native of Mexico [c]. Cultivated in the Eltham garden about 1732; but ſince loſt to the European ſtoves.

20. Root annual. Stem twining, angular,] ten or twelve feet high. [Leaves three-lobed, or rather deeply trifid; the ſegments quite entire, ſmooth, and almoſt equal; the middle one ovate, the ſide ones ſemicordate. Corollas cylindric, violet-coloured. Stigmas two, globular. Capſules hairy [d].

It is allied to Convolvulus edulis; but that has the firſt leaves undivided, the next trifid, then quinquifid, and ſometimes even ſeptemfid or ſeven-cleft, but with the ſide-lobes very ſmall. It varies with one, two and three flowers on a peduncle; with violet, red and white corollas, and with black and white tubers to the root [e].

Native of the Weſt Indies and Japan; where it flowers from auguſt to october. Here it flowers in june and july. Cultivated by Mr. Miller in 1759 [f].

21. Stem twining, ſmooth, triangular with decurrent lines, even. Leaves an inch and half in length, ſmooth,

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[s] Hort. kew.

[t] Linn. ſpec.

[u] Sloane.

[x] Vahl.

[y] Jacquin.

[z] Ibid.

[a] Linn. mant.

[b] Vahl.

[c] Dillenius.

[d] Linn. ſpec. and Thunb.

[e] Thunberg.

[f] Hort. kew.

paler beneath: lobes lanceolate, blunt, mucronate; the ſide ones ſhorter, the outmoſt gibboſe at the baſe on the outſide, the two middle ones narrower. Petioles filiform, longer than the leaf. Peduncles three times as thick as the petiole, longer than the leaf, triangular: pedicels in threes or ſixes, angular, muricated, one-flowered, jointed at the baſe. Calycine leaflets ovate, mucronate, the length of the capſule. Corolla ſmall.—It is allied to I. triloba, but ſeems to differ in having a ſmooth even ſtem, whereas in that it is hirſute and rugged; five-lobed leaves, and peduncles commonly ſix-flowered[g].

According to Sloane, it has a ſmall ſtringy root, a round purple ſtalk, two feet high, purpliſh green leaves, divided almoſt to the petiole, and ſomewhat like thoſe of the Papaw; the flowers are purple.

Native of Jamaica and Santa Cruz.

22. The corolla in this is four times as long as in I. triloba, and the peduncles bear many flowers in racemes[h].

It is an annual plant, a native of South America, and was introduced here in 1773, by Joſeph Nicholas de Jacquin, M.D.[i]]

23. This riſes with a twining hairy ſtalk four or five feet high. Leaves palmate, five-lobed, ſeſſile. Flowers axillary, on ſhort peduncles, two or three together, purple. Capſules round, three-celled, with one brown ſeed in each cell.

[Stem annual, ſimple, ſlender. Leaves cordate, three-lobed, ſomewhat ſharp, hairy, on long petioles. Flowers axillary, blue, on one-flowered, heaped peduncles, not properly aggregate. Tube of the corolla long, thickiſh, border five-cleft. Capſule three-celled[k].

Native of Ceylon and Cochinchina. Cultivated by Mr. Miller in 1759.

24. Flowers cloſely heaped together in heads, and ſurrounded with many hairy leaves. Capſules depreſſed, rounded-four-cornered, two-celled, containing two ſeeds in each cell: but the principal diſtinction conſiſts in the leafy heads and aggregate flowers. Calyxes divided to the bottom into five narrow hairy ſegments, and on the peduncles one or two oblong narrow hairy leaves, ſo that the whole head has a hirſute appearance; but the leaflets are larger towards the outſide of the head, till they become at length like the leaves on the ſtem, only ſmaller. Flowers very ſmall, ſhort, divided into five roundiſh ſegments, commonly plaited and converging, and ſeldom expanding till about noon, when the ſun ſhines hot: they are of a blue colour, but ſoon wither and become brown or black. Capſules membranaceous, depreſſed, roundiſh four-cornered, two-celled, with two ſeeds in each; theſe are ſmall, with a ſmooth even ſurface, ſwelling on the back, but the two other ſides flat. The membranous partition of the capſule not being faſtened to the ſides, but looſe in the middle, ſtrictly ſpeaking the capſule is rather one-celled than two-celled. The ſtems are long and thick, and yield a milky juice on being cut or broken. It is an annual plant, flowering in ſummer, (july) and is a native of the farther Carolina[l].

It was cultivated in 1732, by James Sherard, M.D.[m]

25. Flowers as in the preceding ſpecies, ſmall and converging, but white; and beſides theſe, others larger and more bell-ſhaped, the latter from bell-ſhaped end in a funnel-ſhaped form, are divided at the edge into five bifid ſegments, and are whitiſh, or of a very pale purple colour. Calyx divided to the baſe into five broadiſh hairy ſegments, and each calyx having a ſmall leaf, the heads of flowers are leafy; theſe leaflets are narrower within, wider without, and are larger than in the preceding ſpecies. Five or ſeven flowers come out alternately in each head. The heads are very hairy at the baſe, and ſo are the ſtems, and the leaves on both ſides, but the hairs on the edges of theſe are leſs conſpicuous. Capſules as in the preceding, with the ſame number of ſeeds, which are villoſe, mouſe-coloured, bluntly three-ſided, rounded on the back, angular on the ſides[n].

Native of the Eaſt Indies. Cultivated in 1732, by James Sherard, M.D. It flowers in auguſt[o].

Theſe two ſpecies with aggregate flowers, differing ſo much from the others, are placed in a diſtinct genus by Dillenius, under the name of *Volubilis*.

Some of the ſpecies of Ipomoea indeed differ more from others than they do from ſome ſpecies of Convolvulus, from which genus this can ſcarcely be ſeparated; that, however, is too unwieldy already to admit of unneceſſary enlargement, and the Ipomoeas are, to a botanical eye, ſufficiently diſtinct in their habit to be kept together, and ſeparate from Convolvulus.

26. Native of the Cape of Good Hope.

27. The fruit of this is properly a Berry, globular, fleſhy, mucronate at top, either quite round or obſcurely four-cornered, pale green, ſmooth: rind of a moderate thickneſs, fleſhy, eaſily ſeparable from the pulp, which is ſpongy, four-celled, or by abortion two-celled; the cells cloathed with their proper membrane, but not cohering with the ſeeds. Theſe are ſolitary, in the two-celled berries two, plano-convex; in the four-celled four, convex on one ſide, angular on the other, cinereous brown: outer covering leathery, thick, ſmooth. It differs from the other Ipomoeas, except n. 10. in the ſtructure of the pericarp, above deſcribed, and alſo in the circumſtance given in the ſpecific difference.

Native of Ceylon, where it is named *Kiritiella*[p].]

PROPAGATION AND CULTURE.

1. This is a tender plant, and will not thrive in the open air in England; it is propagated by ſeeds, which ſhould be ſown on a hot-bed in the ſpring; and as the plants will ſoon appear, they ſhould be each tranſplanted into a ſmall pot filled with light earth, before they twine about each other, for then it will be difficult to diſengage them without breaking their tops. When they are potted, they ſhould be plunged into a new hot-bed, and ſticks placed down by each plant for their ſtalks to twine about; after they have taken new root, they ſhould have a good ſhare of air in warm weather to prevent their drawing up weak; and when they are advanced too high to remain under the frame, they ſhould be removed into the tan-bed in the ſtove, where they ſhould have ſupport, for their branches will extend to a conſiderable height. They will begin to flower in june, and there will be a ſucceſſion of flowers till the end of ſeptember, and the ſeeds will ripen well in this ſituation every autumn.

5, 7. If the ſeeds of theſe ſorts are ſown on a hot-bed in the ſpring, and when the plants come up, if they are gradually hardened, and afterward tranſplanted into a warm border, in favourable ſeaſons they will flower and produce good ſeeds; but moſt people raiſe the plants on a very gentle hot-bed, and tranſplant them afterwards into another; by which method they are brought forward, and will perfect their ſeeds earlier.

8. This is a perennial plant, but too tender to thrive in the open air in England; the ſeeds of this muſt be ſown upon a hot-bed in the ſpring, and when the plants come up, they muſt be tranſplanted into ſeparate pots, and plunged into a freſh hot-bed; but as they will ſoon grow too tall to ſtand under a frame, they ſhould be removed into the bark-ſtove, where they muſt be ſupported, otherwiſe they will twine about all the neighbouring plants. As theſe plants extend their ſhoots to a very great length, they require a tall ſtove, where they may have room to grow, without which they will never produce any flowers. I have had theſe plants ſeveral years, but have only ſeen one flower produced from them; for they grow ſo very large before they begin to have flowers, as that few of the ſtoves in England have height enough for their growth.

9, 20, 23. Theſe are alſo tender, ſo the plants muſt be raiſed on a hot-bed in the ſpring, and afterwards planted in ſeparate pots, plunging them into another hot-bed; where they may remain till they reach the glaſſes, when they ſhould be removed into a glaſs caſe where they may have room, and be ſcreened from the cold, but ſhould have a large ſhare of free air admitted to them in warm weather; with this treatment the plants will flower and produce ripe ſeeds.

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[g] Vahl. [h] Linn. ſpec. [i] Hort. kew. [k] Loureiro.
[l] Dillenius. [m] Hort. kew. [n] Dillenius.

[o] Hort. kew. [p] Gærtner.

Ipomoea. See *Convolvulus.*

Ira ceu Balari. See *Cyperus.*

IRESINE. (*From* Ειρος, *Wooll.* Ειρεσιωνη *is an olive-branch with wooll wrapped round it, which the Greeks hung up before their houſes to avert famine.*)

Brown. jam. 358. *Lin. gen. n.* 1113. *Reich.* 1217. *Schreb.* 1519. *Juſſ.* 88.

Claſſ. 22. 5. Dioecia Pentandria.

Nat. order of *Holoraceæ.—Amaranthi,* Juſſ.

GENERIC CHARACTER.

* *Male.*

Cal. *Perianth* two-leaved, very ſmall, acute, gloſſy.

Cor. *Petals* five, ſeſſile, lanceolate, erect.

Nectary of five ſcales, the ſtamens being interpoſed.

Stam. *Filaments* five, upright. *Anthers* roundiſh.

* *Female.*

Cal. as in male.

Cor. as in male.

Pist. *Germ* ovate. *Style* none. *Stigmas* two, roundiſh.

Per. *Capſule* oblong-ovate.

Seeds ſome, downy.

ESSENTIAL CHARACTER.

Cal. two-leaved. *Cor.* five-petalled.

Male. *Nect.* ſeven.

Fem. *Stigmas* two, ſeſſile. *Capſ.* with tomentoſe ſeeds.

SPECIES.

1. Ireſine Celoſia.

Lin. ſyſt. 885.

I. celoſioides. *Lin. ſpec.* 1456. *Reich.* 4. 249. *Brown. jam.* 358. *Sloan. jam.* 1. 142. *t.* 90. *Pluk. phyt. t.* 261. *f.* 1. (Amaranthus).

Celoſia fol. lanceolato-ovatis, panicula diffuſa filiformi. *Gron. virg.* 144. 35.

DESCRIPTION, *&c.*

Perennial. Stems weak, requiring ſupport, riſing ten or twelve feet high, (Sloane and Browne ſay two or three) having large knots at each joint, with oval-lanceolate (or oval, entire,) ſmooth leaves. Stems very diffuſed, branching out on every ſide. Flowers terminating, in ſlender looſe panicles, covered with a ſilky down, and of a pale yellow colour; theſe appear in july and auguſt, and in warm ſeaſons the ſeeds will ripen in autumn.

[According to Sloane, the ſtems are cornered, yellowiſh green, hollow, ſmooth, needing ſupport, but not twining, as big as a gooſe quill, having few joints, and at them leaves, which are oppoſite, an inch and half long, and half as broad near the round baſe, ending in a point, and of a yellowiſh green colour.

Browne deſcribes it with male and female flowers ſeparate. Swartz on the contrary never found it but with hermaphrodite flowers. He thinks it very nearly allied to Celoſia, if not a ſpecies of that genus. He thus deſcribes it.—Root annual. Stem upright, from a foot to a fathom in height, divided at top, round, ſtriated, ſmooth, looſe, jointed at the inſertion of the branches, joints ſwelling: branches oppoſite, ſpreading a little. Leaves oppoſite, petioled, lanceolate or ovate-lanceolate, acuminate, ſmooth. Panicles terminating, branched; branches diffuſed, alternate, ſpreading: flowers in a ſort of ſpike, on ſhort peduncles, ſmall, ovate, whitiſh; at the baſe of the flowers are extremely minute, ſhining, yellowiſh, imbricate ſcalelets. Calyx or corolla five-cleft, with acute upright ſegments. Filaments ſhorter than the corolla. Germ roundiſh. Style very ſhort, trifid. Stigmas reflex. The calyx inſtead of a capſule incloſes a black ſhining ſeed. A white wooll burſts out from among the ſcales after the flowering is paſt.] Native of Jamaica, and moſt of the other iſlands in the Weſt Indies, [among ſhrubs, chiefly in a cretaceous ſoil. It was cultivated by Mr. Miller before 1768.

Iresine. See *Celoſia* & *Illecebrum.*

Iria. See *Cyperus.*

Irio. See *Eryſimum.*

Irion. See *Roridula.*

Iripa. See *Cynometra.*

IRIS. (Ιρις *of Theophraſtus and Dioſcorides,* Iris *of Pliny; ſo named from the variety of colours in the flowers.*)

Lin. gen. n. 59. *Reich.* 69. *Schreb.* 79. *Tournef.* 186, 187, 188. *Juſſ.* 57. *Thunb. diſſ.* 2. *Gærtn. t.* 13.

Xiphion. *Tournef.* 198. *Mill. dict.* Siſyrinchium & Hermodactylus. *Tournef.*

Claſſ. 3. 1. Triandria Monogynia.

Nat. order of *Enſatæ.—Irides,* Juſſ. *Hexapetalæ Tricapſulares. Moris. Raii, &c. Liliaceæ,* Tournef.

GENERIC CHARACTER.

Cal. *Spathes* bivalve, ſeparating the flowers, permanent.

Cor. ſix-parted. *Petals* oblong, obtuſe: the *three exterior* ones reflex; the *three interior* upright and ſharper: all connected at the claws into a tube of different lengths in the different ſpecies.

Stam. *Filaments* three, awl-ſhaped, incumbent on the reflex petals. *Anthers* oblong, ſtraight, depreſſed.

Pist. *Germ* inferior, oblong. *Style* ſimple, very ſhort. *Stigmas* three, petal-form, oblong, carinated within, furrowed without, incumbent on the ſtamens, two-lipped. *Outer lip* ſmaller, emarginate; *inner* larger, bifid, ſubinflected.

Per. *Capſule* oblong, cornered, three-celled, three-valved.

Seeds ſeveral, large.

Obs. *The Nectary in ſome* (1—9) *is a longitudinal villoſe line, engraven on the baſe of the reflex petals; but in others it conſiſts of three melliferous pores at the baſe of the flower. The capſule in ſome is trigonal, in others hexagonal.*

Xiphium T. *has a bulbous root and awl-ſhaped leaves.*

Siſyrinchium T. *has a double bulbous root, one placed on the other.*

Hermodactylus T. *has a tuberous root, and tetragonal leaves.*

Iris T. *has a fleſhy oblong creeping root, and ſword-ſhaped leaves.*

ESSENTIAL CHARACTER.

Cor. ſix-petalled, unequal, petals alternate, jointed and ſpreading. *Stigmas* petal-form, cowled-two-lipped.

SPECIES.

* *Bearded* (having the ſpreading petals furniſhed with hairs.)

Leaves enſiform.

[1. Iris ciliata. *Ciliate-leaved Iris.*

Lin. ſyſt. 88. *ſuppl.* 98. *Thunb. diſſ.* 4. *prodr. cap.* 11.

Bearded, leaves enſiform, ciliate.

2. Iris minuta. *Minute Iris.*

Lin. ſyſt. 88. *ſuppl.* 98. *Thunb. diſſ.* 4. *prodr. cap.* 11.

Bearded, leaves enſiform, ſmooth, ſcape one-flowered, petals oblong, acute.]

3. Iris pumila. *Dwarf Iris.*

Lin. ſyſt. 88. *ſpec.* 56. *Reich.* 1. 106. *hort. cliff.* 19. *n.* 5. *Thunb. diſſ.* 4. *Jacqu. auſtr.* 1. 5. *t.* 1. *Gmel. ſib.* 1. 32. *n.* 32. *Pallas. it.* 1. 148. *Curt. magaz. t.* 9. *Villars dauph.* 2. 224. *Beſl. eyſt. vern.* 8. *t.* 1, 2.

Chamæiris minor flore purpureo. *Bauh. pin.* 33. *Mor. hiſt.* 2. 355. *ſ.* 4. *t.* 6. *f.* 15.

C. latifolia minor 1, 2. *Cluſ. hiſt.* 1. 225. *Raii hiſt.* 1187.—flore rubello. *Ger. emac.* 57. *f.* 9.—latif. min. purpurea. *Park. parad.* 186.

β. C. minor, flore purpuro-cæruleo. *Bauh. pin.* 33.

γ. C. min. flore rubello. *Bauh. pin.* 33.

δ. C. flore pallido & albo. *Bauh. pin.* 33.

C. ſaxatilis gallica. *Bauh. pin.* 34. *Raii hiſt.* 1187.

ε. C. min. flore variegato. *Bauh. pin.* 34.

Iris anguſtifolia maritima minor. *Bauh. pin.* 33.

ζ. C. flore luteo & pallide luteo. *Bauh. pin.* 34.

Bearded, leaves enſiform, ſmooth, ſcape one-flowered, petals oblong, blunt.

4. Iris ſuſiana. *Chalcedonian Iris.*

Lin. ſpec. 55. *ſyſt.* 88. *Reich.* 1. 104. *hort. cliff.* 18. 1. *Curt. magaz. t.* 91. *Thunb. diſſ.* 4.

I. ſuſiana, flore maximo ex albo nigricante. *Bauh. pin.* 31. *theat.* 579. *Mor. hiſt.* 2. 351. *ſ.* 4. *t.* 6. *f.* 6.

I. latifolia major. *Cluſ. hiſt.* 1. 217.—ſuſ. vel calcedonica; flore majore variegato. *Bauh. hiſt.* 2. 721.

I. calced. latif. *Beſl. eyſt. vern.* 8. 4. *f.* 1.

I. calced. *Ger.* 51. *f.* 2. *emac.* 55. *f.* 2.—ſ. Suſiana major. *Park. parad.* 179. *t.* 183. *f.* 1.

Bearded, leaves enſiform, ſmooth, ſcape one-flowered; petals rounded.

5. Iris florentina. *Florentine Iris.*

Lin. ſpec. 55. *ſyſt.* 88. *Reich.* 1. 105. *mat. med.* 44. *Woodv. med. bot.* 112. *t.* 39. *Plenck. ic.* 35. *Zorn. ic.* 186. *Blackw. t.* 414. *Beſl. eyſt. vern.* 8. 4. *f.* 2. *Thunb. diſſ.* 4.

I. alba florentina. *Bauh. pin.* 31. *Ger.* 47. *f.* 1, 2. *emac.* 52. *f.* 1, 2. *Park. parad.* 180. *t.* 183. *f.* 2.

β. I. alba germanica. *Bauh. pin.* 31.

I. flore albo. *Bauh. hiſt.* 2. 719. *Raii hiſt.* 1180.

Bearded, leaves enſiform, ſmooth, ſhorter than the ſubbiflorous ſcape.

6. Iris biflora. *Twice-flowering Iris.*

Lin. ſpec. 56. *ſyſt.* 88. *Reich.* 1. 106. *hort. upſ.* 17. *cliff.* 19. 4. *Pallas it.* 1. 171. *Thunb. diſſ.* 4. *Ger.* 49. *f.* 5. *emac.* 53. *f.* 5.

Chamæiris latifolia biflora. *Beſl. eyſt. vern.* 8. *t.* 1. *f.* 4.

C. major ſaturate purpurea biflora. *Bauh. pin.* 33.

I. biflora luſitanica flore violaceo. *Cluſ.* 22. *Bauh. hiſt.* 2. 722. *Raii hiſt.* 1185.

Bearded, leaves enſiform, ſmooth, ſhorter than the ſubtriflorous ſcape.

7. Iris aphylla. *Leafleſs Iris.*

Lin. ſpec. 56. *ſyſt.* 89. *Reich.* 1. 105. *Thunb. diſſ.* 4.

I. latifolia caule aphyllo. *Bauh. pin.* 32. *Raii hiſt.* 1185.

Bearded, leaves enſiform, ſmooth, equalling the many-flowered almoſt naked ſcape.

8. Iris variegata. *Variegated Iris.*

Lin. ſpec. 56. *ſyſt.* 89. *Reich.* 1. 106. *hort. upſ.* 16. *cliff.* 19. 3. *Jacqu. auſtr.* 1. 7. *t.* 5? *Curt. magaz. t.* 16. *Thunb. diſſ.* 4.

I. latifolia pannonica, colore multiplici. *Bauh. pin.* 31. *Raii hiſt.* 1184.

I. lutea variegata. *Lob. hiſt.* 34. *Ehret. pict. t.* 10. *f.* 3. *Ger.* 51. 1. *emac.* 55. 1. *Camer. hort.* 80. *Park. parad.* 182. *t.* 183. *f.* 3.

I. lutea, foliis florum repandis variegatis. *Bauh. hiſt.* 2. 271.

Bearded, leaves enſiform, ſmooth, equalling the many-flowered ſcape.

9. Iris germanica. *German Iris.*

Lin. ſpec. 55. *ſyſt.* 89. *Reich.* 1. 105. *hort. cliff.* 18. 2. *upſ.* 16. *mat. med.* 4. *Thunb. diſſ.* 4. *Hall. helv. n.* 1258. *Scop. carn. n.* 51. *Pollich. pal. n.* 34. *Jacqu. vind.* 18. *Villars dauph.* 2. 224. *Krock. ſileſ. n.* 56. *Fuchſ.* 317. *Blackw. t.* 69. *Plenck. ic.* 34.

I. vulgaris germ. ſ. ſylveſtris. *Bauh. pin.* 30.

I. vulg. *Ger.* 46. *f.* 1. *emac.* 50. *f.* 1. *Raii hiſt.* 1180.

I. latifolia vulg. cærulea. *Beſl. eyſt. vern.* 8. 5. *f.* 2.

I. purpurea ſ. vulg. *Park. parad.* 181.

I. ſylveſtris. *Matth.* 1611.—major. *Camer. epit.* 2.

Bearded, leaves enſiform, ſmooth, ſickle-ſhaped, ſhorter than the many-flowered ſcape.

[10. Iris lurida. *Dingy Iris.*

Ait. hort. kew. 1. 68.

Bearded, ſtem higher than the leaves and many-flowered, outer petals revolute, inner from erect bent in, ſomewhat waved, and ſlightly emarginate.]

11. Iris ſambucina. *Elder-ſcented Iris.*

Lin. ſpec. 55. *ſyſt.* 89. *Reich.* 1. 105. *Thunb. diſſ.* 5. *Jacqu. hort.* 1. 1. *t.* 2. *Curt. magaz.* 187. *Krock. ſileſ. n.* 57.

I. latifolia germanica ſambuci odore. *Bauh. pin.* 31. *Raii hiſt.* 1183.

I. major. latif. 8. *Cluſ. hiſt.* 1. 219.

Bearded, leaves enſiform, ſmooth, erect, ſhorter than the many-flowered ſcape, petals bent down, flat.

12. Iris ſqualens. *Brown-flowered Iris.*

Lin. ſpec. 56. *ſyſt.* 89. *Reich.* 1. 106. *Krock. ſileſ. n.* 58. *Thunb. diſſ.* 5.

I. variegata. *Jacqu. auſtr.* 1. 7. *t.* 5.

Bearded, leaves enſiform, ſmooth, erect, ſhorter than the many-flowered ſcape, petals bent down and folded back.

[13. Iris compreſſa. *Flat-ſtalked Iris.*

Lin. ſyſt. 89. *ſuppl.* 98. *Thunb. diſſ.* 5. *prodr. cap.* 11.

Bearded, leaves enſiform, ſmooth, ſcape panicled, compreſſed.

14. Iris criſtata. *Creſted Iris.*

Smith. ſpicil. t. 13. *Ait. hort. kew.* 1. 70.

Bearded, beard creſted, ſtem moſtly one-flowered, the length of the leaves; germs three-cornered, petals almoſt equal.

15. Iris dichotoma. *Forked Iris.*

Lin. ſyſt. 89. *ſuppl.* 97. *Thunb. diſſ.* 5. *Pallas it.* 3. 714. *t.* A. *f.* 2.

Bearded, leaves enſiform, ſmooth, ſtem panicled, round.

Leaves linear.

16. Iris tripetala. *Three-petalled Iris.*

Lin. ſyſt. 89. *ſuppl.* 97. *Thunb. diſſ.* 5. *prodr. cap.* 11.

Bearded, leaf linear, longer than the one-flowered ſcape, petals alternate, awl-ſhaped.

17. Iris tricuſpis. *Trifid-petalled Iris.*

Lin. ſyſt. 89. *ſuppl.* 98. *Thunb. diſſ.* 5. *prodr. cap.* 11.

Bearded, leaf linear, longer than the ſubbiflorous ſcape, alternate petals trifid.

18. Iris plumaria. *Feathered Iris.*

Lin. ſyſt. 89. *Thunb. diſſ.* 5. *prodr. cap.* 11.

Moræa juncea. *Lin. ſpec.* 59. *Reich.* 1. 111. *Gærtn. fruct.* 39. *t.* 13.

M. iriopetala. *Linn. ſuppl.* 100.

Bearded, leaves linear, ſcape many-flowered, ſtigmas ſetaceous-multifid.

* *Beardleſs.*

Leaves enſiform.

19. Iris Xiphium. *Bulboſe-rooted Iris.*

Lin. ſpec. 58. *ſyſt.* 90. *Reich.* 1. 110. *hort. upſ.* 17. *cliff.* 20. 12. *Thunb. diſſ.* 5. *Wither. arr. ed.* 3. 69.]

α. Xiphium latifolium. *Mill. dict. n.* 3. *Tourn. inſt.* 363.

I. bulboſa latifolia, caule donata. *Bauh. pin.* 38.

Great Bulboſe-rooted Iris.

β. Xiphium vulgare. *Mill. dict. n.* 2.

X. anguſtifolium. *Tournef. inſt.* 364. *Boerh. lugdb.* 2. 126. 2—11.

Iris bulboſa cæruleo-violacea. *Bauh. pin.* 40.—fl. luteo. *Ger.* 93. 3, 4. *emac.* 101. 5.

Small bulboſe-rooted Iris.

Beardleſs, leaves enſiform, channelled, awl-ſhaped, ſhorter than the two-flowered ſcape.

20. Iris Pſeudacorus. *Common yellow* or *water Iris.*

Lin. ſpec. 56. *ſyſt.* 90. *Reich.* 1. 107. *Fl. lapp. n.* 16. *ſuec. n.* 37. *hort. cliff.* 19. 6. *mat. med.* 44. *Woodv. med. bot.* 114. *t.* 40. *Thunb. diſſ.* 5. *Hudſ. angl.* 14. *Wither. arr.* 39. *ed.* 3. 69. *Curt. lond.* 3. 4. 197. *Relh. cant. n.* 28. *Hall. helv. n.* 1260. *Scop. carn. n.* 49. *Pollich. pal. n.* 35. *Gmel. ſib.* 1. 31. *Neck. gallob.* 20. *Villars dauph.* 2. 224. *Krock. ſileſ. n.* 29. *Fl. dan. t.* 494. *Zorn. ic.* 187. *Plenck, ic. t.* 36.

I. paluſtris lutea. *Ger.* 46. 2. *emac.* 50. 2. *Raii hiſt.* 1186. *ſyn.* 374.—ſ. Acorus adulterinus. *Bauh. hiſt.* 2. 732. 1. *Mor. hiſt. ſ.* 4. *t.* 6. *f.* 11.

Acorus adulterinus. *Bauh. pin.* 34. *theat.* 633. *Blackw. t.* 261.—paluſtris, ſ. Pſeudo-iris & I. lut. pal. *Park. theat.* 1219.

Acorum falſum. *Camer. epit.* 6.

Pſeudo-iris. *Dod. pempt.* 248. 1. *Lob. obſ.* 31. 1.—paluſtris. *Beſl. eyſt. vern.* 8. 7. *f.* 3.

Beardleſs, leaves enſiform, alternate petals ſmaller than the ſtigma.

21. Iris foetidiſſima. *Stinking Iris.*

Lin. ſpec. 57. *Reich.* 1. 107. *hort. cliff.* 19. 7. *Murr. prodr.* 137. *Hudſ. angl.* 14. *Wither. arr.* 40. *Relh. cant. n.* 29. *Sauv. monſp.* 41. *Villars dauph.* 2. 225. *Berg. phyt.* 2. 185. *Plenck, ic.* 37.

I. foetida. *Lin. ſyſt.* 90. *Thunb. diſſ.* 5. *Wither. arr. ed.* 3. 70.

Xyris. *Camer. epit.* 733. *Lob. obſ.* 37. 1. *Ger.* 53. 1. *emac.* 60. *Raii hiſt.* 1190.

X. vel Iris maxima foetida. *Mor. hiſt. ſ. 4. t. 5. f. 2.*
X. ſ. Spatula foetida. *Park. theat.* 256. 5.
Spatula foetida, Xyris. *Bauh. hiſt.* 2. 731. 2. *Fuchſ. hiſt.* 794. *Dod. pempt.* 247. 2. *Blackw. t.* 158. *Beſl. eyſt. vern.* 8. 8. *f.* 1.
Gladiolus foetidus. *Bauh. pin.* 30. *theat.* 560. *Raii ſyn.* 375.
Beardleſs, leaves enſiform, ſcape one-angled.

[22. Iris virginica. *Virginian Iris.*
Lin. ſpec. 58. *ſyſt.* 90. *Reich.* 1. 108. *Thunb. diſſ.* 5. *Gron. virg.* 7. *ult.* *Jacqu. collect.* 2. 322.
Beardleſs, leaves enſiform, ſcape ancipital.

23. Iris verſicolor. *Various-coloured Iris.*
Lin. ſpec. 57. *ſyſt.* 90. *Reich.* 1. 108. *Curt. magaz. t.* 21. *Thunb. diſſ.* 5. *jap.* 34.]
I. picta. *Mill. dict. n.* 16.
[I. americana verſicolor, ſtylo crenato & non crenato. *Dill. elth..* 187, 188. *t.* 155. *f.* 187, 188.
Beardleſs, leaves enſiform, ſcape round, flexuoſe, germs ſubtrigonal.

24. Iris ochroleuca. *Pale-yellow Iris.*
Lin. ſyſt. 90. *Reich.* 1. 109. *mant.* 175. *Thunb. diſſ.* 6. *Trew. Ehret.* 56. *t.* 100. *Curt. magaz.* 61.]
I. orientalis. *Mill. dict. n.* 9. *fig. t.* 154.
[*Beardleſs, leaves enſiform, ſcape ſubcylindric, germs hexagonal.*

25. Iris halophila. *Long-leaved Iris.*
Ait. hort. kew. 1. 72. *Pallas it.* 2. 733. *vol.* 3. *p.* 713. *t.* B. *f.* 2.
Beardleſs, leaves enſiform, thoſe next the root very long, ſtem round, germs hexagonal.

26. Iris ſpathacea. *Long-ſpathed Iris.*
Lin. ſyſt. 90. *Thunb. diſſ.* 6.
I. ſpathulata. *Lin. ſuppl.* 99.
Beardleſs, leaves enſiform, rigid, ſcape round, two-flowered, ſpathes very long.

27. Iris ramoſa. *Branching Iris.*
Lin. ſyſt. 90. *Thunb. diſſ.* 6. *prodr. cap.* 12.
I. ramoſiſſima. *Lin. ſuppl.* 99.
Beardleſs, leaves enſiform, ſtem panicled, many-flowered.

With linear leaves.

28. Iris Siſyrinchium. *Crocus-rooted Iris.*
Lin. ſpec. 59. *ſyſt.* 91. *Reich.* 1. 110. *Thunb. diſſ.* 6.
Siſyrinchium.—*Ger.* 94. *f.* 1. *Park. parad.* 170. *t.* 169. *f.* 6.—majus. *Bauh. pin.* 40. *Cluſ. hiſt.* 1. 216. *Ger. emac.* 103. *f.* 1. *Raii hiſt.* 1166.
β. S. medium. *Bauh. pin.* 41.
S. minus. *Cluſ. hiſt.* 1. 216. *Ger. emac.* 103. *f.* 2. *Raii hiſt.* 1166.
Beardleſs, leaves linear, waved, reflex, ſcape one-flowered.]

29. Iris verna. *Spring Iris.*
Lin. ſpec. 58. *ſyſt.* 91. *Reich.* 1. 109. *Thunb. diſſ.* 6. *Gron. virg.* 10. 7. *Pluk. phyt. t.* 196. *f.* 6.
Beardleſs, leaves linear, flat, ſcape one-flowered, ſhorter than the leaves, root fibroſe; (*alternate petals equalling the others.*)

[30. Iris perſica. *Perſian Iris.*
Lin. ſpec. 59. *ſyſt.* 91. *Reich.* 1. 110. *Thunb. diſſ.* 6. *Gærtn. fruct.* 1. 39. *Curt. magaz. t.* 1.
Iris bulboſa perſica. *Park. parad.* 172. *Raii hiſt.* 1128.—variegata præcox. *Ferrar. heſp.* *Dodart. mem.* 83. *Rob. ic.* 186.
I. perſ. martia. *Rudb. elyſ.* 2. 10. *f.* 9.
I. bulb. præcox minus odora perſ. variegata. *Mor. hiſt.* 2. 357. *ſ.* 4. *t.* 7. *f.* 2.]
Xiphium perſicum. *Mill. dict. n.* 1.—præcox flore variegato. *Tournef. inſt.* 363.
Beardleſs, leaves linear, flat, ſcape one-flowered, alternate petals ſhorter: (*inner petals very ſhort and ſpreading.*)

[31. Iris anguſta. *Narrow-leaved Iris.*
Lin. ſyſt. 91. *Thunb. diſſ.* 6. *prodr. cap.* 12.
Beardleſs, leaf filiform-linear, upright, ſmooth, ſcape ſmooth, one or two-flowered, ſpathes blunt.

32. Iris ſetacea. *Briſtle-leaved Iris.*
Lin. ſyſt. 91. *Thunb. diſſ.* 6. *prodr. cap.* 12.
I. ſetifolia. *Lin. ſuppl.* 99.
Beardleſs, leaf filiform-linear, upright, ſmooth, ſcape ſmooth, one-flowered, ſpathes acute, membranaceous.

33. Iris tenuifolia. *Slender-leaved Iris.*
Lin. ſyſt. 91. *ſuppl.* 97. *Thunb. diſſ.* 6. *Pallas itin.* 3. 714. *t.* C. *f.* 2.
Beardleſs, leaves filiform-linear, ſcape two-flowered.]

34. Iris graminea. *Graſs-leaved Iris.*
Lin. ſpec. 58. *ſyſt.* 91. *Reich.* 1. 109. *hort. cliff.* 19. 10. *upſ.* 17. *Thunb. diſſ.* 6. *Scop. carn. n.* 50. *Jacqu. auſtr.* 1. 5. *t.* 2. *vind.* 8. *Bauh. hiſt.* 2. 727. *Raii hiſt.* 1189. 6. *Krock. ſileſ. n.* 61.
I. anguſtifolia prunum redolens minor. *Bauh. pin.* 33.
I. anguſt. 3. *Cluſ. hiſt.* 1. 230. (6. *Ray* & *Lin. cliff.*)
I. perpuſilla ſylveſtris anguſt. *Lob. hiſt.* 34.
I. ſylveſtris. *Matth. Dioſc.* 18.
Chamæiris. *Dod. pempt.* 247.—tenuifolia. *Ger.* 52. *f.* 5. *emac.* 56. *f.* 6.
Beardleſs, leaves linear, ſcape ſubbiflorous, ancipital, germs hexagonal.

35. Iris ſpuria. *Spurious Iris.*
Lin. ſpec. 58. *ſyſt.* 91. *Reich.* 1. 108. *hort. cliff.* 19. 9. *upſ.* 17. *Thunb. diſſ.* 6. *Jacqu. auſtr.* 1. 6. *t.* 4. *Pallas. it.* 2. 456. *Fl. dan. t.* 734. *Curt. magaz. t.* 58. *Gouan. illuſtr.* 2.
I. pratenſis anguſtifolia folio foetido. *Bauh. pin.* 32. *Raii hiſt.* 1188.
I. anguſt. 1. *Cluſ. hiſt.* 1. 228.
I. tenuifolia michelfeldenſis ſpontanea. *Bauh. hiſt.* 2. 725.
Beardleſs, leaves linear, ſcape round, ſubtriflorous, germs three-cornered.

36. Iris ſibirica. *Siberian Iris.*
Lin. ſpec. 57. *ſyſt.* 91. *Reich.* 1. 108. *hort. cliff.* 19. 8. *upſ.* 17. *Gærtn. fruct.* 1. 38. *Thunb. diſſ.* 6. *in Lin. tranſ.* 2. 328. *Hall. helv. n.* 1259. *Gmel. ſib.* 1. 28. *Jacqu. auſtr.* 1. 6. *t.* 3. *Pollich. pal. n.* 36. *Krock. ſileſ. n.* 60. *Curt. magaz. t.* 50.
I. pratenſis anguſtifolia non foetida altior. *Bauh. pin.* 32. *theat.* 597. *Raii hiſt.* 1189.
I. anguſt. 2. *Cluſ. hiſt.* 229.
I. tenuifolia major, flore cæruleo & ſtriato. *Bauh. hiſt.* 2. 728.
I. anguſt. minor, pannonica ſ. verſicolor. *Park. parad.* 184. *t.* 185. *f.* 3.
I. ſylveſtris byzantina. *Ger.* 52. *f.* 3. *emac.* 56. *f.* 4.
Beardleſs, leaves linear, ſcape round, ſubtriflorous, germs three-cornered.

[37. Iris flexuoſa. *Wave-leaved Iris.*
Lin. ſyſt. 92. *Murr. in comm. gott.* 1776. *p.* 30. *t.* 4.
Beardleſs, leaves linear, flexuoſe, ſtem three-flowered, round, thick, germs three-cornered.

38. Iris martinicenſis. *Martinico Iris.*
Lin. ſpec. 58. *ſyſt.* 92. *Reich.* 1. 108. *Thunb. diſſ.* 6. *Jacqu. amer.* 7. *t.* 7. *pict.* 10. *t.* 10. *Plum. ſpec.* 8. *ic.* 260. *t.* 261. *f.* 2.
Beardleſs, leaves linear, petals with little glandular pits at the baſe, germs three-cornered.

39. Iris pavonia. *Peacock Iris.*
Lin. ſyſt. 92. *ſuppl.* 98. *Thunb. diſſ.* 7. *t.* 1. *prodr. cap.* 12.
Beardleſs, leaf linear, ſmooth, ſcape one or two-flowered.

40. Iris criſpa. *Curl-leaved Iris.*
Lin. ſyſt. 92. *ſuppl.* 98. *Thunb. diſſ.* 7. *t.* 1. *prodr. cap.* 12.
Beardleſs, leaves linear, curled.

41. Iris papilionacea.
Lin. ſyſt. 92. *ſuppl.* 98. *Thunb. diſſ.* 7. *t.* 2. *prodr. cap.* 12.
Beardleſs, leaves linear, reflex, rough-haired.

42. Iris edulis.
Lin. ſyſt. 92. *ſuppl.* 98. *Thunb. diſſ.* 7. *prodr. cap.* 12.
Moræa fugax. *Jacqu.*
Beardleſs, leaf linear, pendulous, ſmooth, ſcape ſmooth, many-flowered.

43. Iris triſtis.
Lin. ſyſt. 92. *ſuppl.* 97. *Thunb. diſſ.* 7. *prodr. cap.* 12.
Beardleſs, leaves linear, ſmooth, ſcape rough-haired, branched.

44. Iris polyſtachya.
Lin. ſyſt. 92. *Thunb. diſſ.* 7. *prodr. cap.* 12.
Beardleſs, leaves linear, flat, ſcape ſmooth, branched.

45. Iris viſcaria.
Lin. ſyſt. 92. *ſuppl.* 98. *Thunb. diſſ.* 7. *prodr. cap.* 12.
Beardleſs, leaves linear, flat, ſcape viſcid.

46. Iris bituminoſa.
Lin. ſyſt. 92. *ſuppl.* 98. *Thunb. diſſ.* 7. *t.* 2. *prodr. cap.* 12.
Beardleſs, leaves linear, ſpiral, ſcape viſcid.]
Leaves four-cornered.

47. Iris tuberoſa. *Snake's-head Iris.*
Lin. ſpec. 58. *ſyſt.* 92. *Reich.* 1. 110. *vir. cliff.* 6. *hort. cliff.* 20. 11. *mat. med.* 44. *Thunb. diſſ.* 7. *Plenck, ic. t.* 38. *Lob. hiſt.* 51. *Ger.* 94. 2. *emac.* 103. 3. *Raii hiſt.* 1190.
I. tuberoſa folio anguloſo. *Bauh. pin.* 40. *Mor. hiſt.* 2. 348. *ſ.* 4. *t.* 5. *f.* 1.
I. tub. belgarum. *Bauh. hiſt.* 2. 730.
Hermodactylus. *Mill. dict.*—folio quadrangulo. *Tourn. cor.* 50.
Beardleſs, leaves quadrangular.

[48. Iris japonica.
Thunb. in Lin. tranſ. 2. 327.
I. ſqualens. *Thunb. jap.* 33.
Bearded, leaves enſiform, falcated, ſhorter, ſmooth, ſcape compreſſed, many-flowered.

49. Iris orientalis.
Thunb. in Lin. tranſ. 2. 328.
I. ſibirica. *Thunb. jap.* 33.
Beardleſs, leaves linear, ſcape ſubbiflorous, round, jointed, germs three-cornered, corollas netted.

50. Iris enſata.
Thunb. in Lin. tranſ. 2. 328.
I. graminea. *Thunb. jap.* 34.
Beardleſs, leaves linear, ſcape ſubbiflorous, round, germs hexagonal.

DESCRIPTIONS, &c.

Root bulbous or fleſhy, in a few ſpecies tuberous and fibrous. Scape round, angular or compreſſed; ſimple or divided, few-flowered or many-flowered, ſhorter than, equal to, or longer than the leaves. Leaves ſheathing, equitant, naked (or very ſeldom rough-haired); entire, ſometimes waved, curled or ſpiral; enſiform, linear-enſiform, linear, or linear-filiform; in one inſtance quadrangular; longer than the ſtem or ſcape, equal to it, or ſhorter. Flowers one, two, three or more, but the number inconſtant, flowering one after another, of a great variety of colours, white, yellow, blue, purple, or variegated. The corolla is uſually ſix-petalled, with the petals divided to the very baſe; ſometimes, however, they cohere ſo ſlightly at bottom, that they have been reputed by ſome botaniſts (Knauth, Ruppius, &c.) as monopetalous; but they do not cohere by their entire claws as in monopetalous flowers properly ſo called. The filaments often cohere more or leſs (as in monadelphous flowers), eſpecially in the african ſorts; but in other ſpecies they are perfectly free and diſtinct. The capſules in moſt of the ſpecies are trigonal, but in ſome are hexagonal.

The Iris is an inhabitant of every quarter of the world; America, however, produces very few; ſeveral are found natives of the colder regions of Aſia; more ſtill of Europe; and moſt of the Cape of Good Hope.

1. Bulb ovate, fibrous, netted, the ſize of a hazle nut. Scapes ſeveral, moſt of them concealed by the ſheaths of the leaves, and a ſingle one only flowering: this is wholly ſheathed by leaves, ſimple, compreſſed, weak, white, ſmooth, upright, one-flowered, a palm in height. Leaves radical, about ſix, convoluted at the baſe, alternately ſheathing the ſcape to the very top, acuminate, from upright, ſpreading, or curved back, nerved, ſmooth, entire, nearly equal to the ſcape, the inner ones gradually ſhorter, and more convoluted. Corolla yellow; the ſmaller petals obovate: the inner lip of the ſtigma bifid, the ſegments briſtle-ſhaped, the length of the ſtigma. Capſule three-cornered, three-grooved. Native of the Cape of Good Hope, on the hills near Cape Town.

2. Bulb ovate, netted, the ſize of a large pea. Scape ſimple, ſheathed with leaves, upright, a palm in height. Leaves about four, alternately ſheathing, ſubfalcate-reflex, entire, ſmooth, equalling the ſcape, the upper ones gradually ſhorter. Corolla yellow, the ſmaller petals lanceolate. Native alſo of the Cape, on Leuweſtart mountain near Cape Town. Theſe were both firſt obſerved by Chevalier Thunberg [a].

3. Root browniſh on the outſide, white within, knobbed, with pale fibrils. Leaves acute, ſometimes ſhorter, ſometimes longer than the flower. Stem or ſcape very ſhort, often ſcarcely an inch in length. Germ oblong, bluntly and obſcurely three-cornered, an inch long, incloſed within two ſpathes, ending in the tube of the corolla, which is ſlender, and from two to three inches in length. All the petals are almoſt entire, blue or purple, varying much in colour, inſomuch that the ſame flower changes, and from blue becomes more and more red. Outer beards blue, inner white, with yellow tips. Anthers blue. Stigmas deeply bifid and acuminate, uſually of the ſame colour with the corolla. The fruit is ſeldom obſerved in this ſpecies; it is ovate, bluntly three-cornered, an inch long. Seeds wrinkled, angular, yellow-ruſt-coloured [b].

Thunberg remarks, that the ſcape is ſheathed with leaves; which are about five in number, alternately ſheathing, ſtriated, ſmooth, equalling the ſcape.

Native of Auſtria and Hungary on open hills, flowering in april [c]. It was cultivated in 1596 by Gerarde [d].

There are many varieties of this ſort, with white, ſtraw-coloured, pale blue, bluſh-coloured, yellow-variable, blue-variable, and other colours in the flowers, which are now in great meaſure neglected [e].

4. Scape ſimple, round, grooved, a ſpan high. Leaves alternate, ſheathing, upright, very finely ſtriated, obſcurely waved. Corolla the largeſt of all the ſpecies, very thin. The claws of the larger petals purple on the outſide, dotted and ſtreaked with purple within; border ſuborbiculate, waved, bent in at top, upright: border of the ſmaller petals ovate, bent down, with the edge frequently bent back, blunt, of the ſame colour with the larger ones, but ſhorter and narrower; the claws bearded within from the flexure to the baſe with browniſh-yellow cilias. Stigmas of the ſame colour with the petals: inner lip very blunt; outer bifid, ſegments ovate, crenulate, bent back. Capſule obſcurely three-cornered, with a long point and a wide top, marked with three purple lines [f].]

Mr. Miller obſerves, that the leaves are of a grayiſh colour, that the ſtalks are two feet and a half high, that the three upright petals of the flower are almoſt as broad as a hand, but very thin, ſtriped with black and white; the three bending petals or falls of a darker colour, whence ſome gardeners call it the Mourning Iris. It flowers at the end of may or beginning of june, but never bears any ſeeds in England.

Native of the Levant. It takes the name from Suſa in Perſia. Cluſius informs us that this magnificent Iris was brought from Conſtantinople to Vienna and Holland in 1573. In 1596 it was cultivated by our Gerarde [g].

5. Scape round, ſtriated, ſimple, upright, a foot high and more, bearing two or three flowers. Leaves nerved, ſubfalcated, obſcurely curved on the outer edge. Lower petals connate at the baſe: the claws of the larger ones thickiſh, with a thin winged edge, an inch long, green on the outſide, bearded within, with white cilias yellow at the tip: border blunt, emarginate, an inch wide, a little more in length, hanging down, white, ſtriated near the flexure. Smaller petals oblong, from upright bent in with a reflex margin, blunt, emarginate, white; claws thickiſh, attenuated, greeniſh. Anthers white. Stigmas ſnowy-white, the ſame length with the claws of the larger petals; inner lip very blunt, outer bifid, ſegments acute, crenulate, upright. Capſule three-grooved, having a point an inch in length, ſomewhat compreſſed, two-grooved, obſcurely trigonal.

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[a] Thunb. diſſ. p. 8.
[b] Jacquin.
[c] Ibid.
[d] Hort. kew.
[e] Park. parad. and Curt. magaz.
[f] Thunberg.
[g] Hort. kew.

It reſembles I. germanica very much, but differs in having the petals white and entire, the edges of the ſmaller petals reflex at the baſe, the larger ones more upright, and the lip of the ſtigma crenated and more upright[h].

Native of the South of Europe. Cultivated in 1596 by Gerarde. It flowers in may and june[i]. This is named by our old writers White Flower de-luce, or Flower de-luce of Florence. The preceding is called by them Turky Flower de-luce from the French *Fleur-de-lys*.

6. Scape ſimple, ſtriated, longer than the leaves, a ſpan in height, ſuſtaining two or three flowers, ſometimes four. Leaves ſubfalcated, acute, ſtriated, from erect patulous. Petals violet-coloured, entire. Capſule cylindric, with three ſtreaks[k]. Native of Portugal and Spain. Cultivated in 1596 by Gerarde. It flowers in april and may[l]; and again in autumn, whence it had the name of *biflora*[m], but improperly becauſe it tends to miſlead. It ſhould have been *biflorens*, or more claſſically *bifera*. I have therefore named it *Twice-flowering Iris.*]

7. This has three or four large bright-purple flowers, which ſtand above each other, and have purpliſh ſheaths; the three bending petals or falls are ſtriped with white from the baſe to the end of the beard. The capſules are large, blunt and triangular. It flowers at the end of may, and the ſeeds ripen at the beginning of auguſt. [Its native place of growth is unknown.

8. Scape ſtriated, ſcarcely longer than the leaves, a foot and more in height. Leaves acute, ſtriated, upright, the lower ones the length of the ſcape, but the upper ones gradually ſhorter. Flowers at the top of the ſcape divided, alternate, coming out ſucceſſively, handſome, yellow, netted with black[n].] The upper part of the ſtem is naked, and divides into three branches, each of which has two or three flowers one above another: the three upright petals or ſtandards are yellow, and the bending petals or falls are variegated with purple ſtripes. It flowers in june, but is rarely ſucceeded by ſeeds in England. Native of Hungary. [Cultivated by Gerarde in 1597[o]. He calls it Variable Flower de-luce.

9. Scape divided at top, larger than the leaves. Leaves reflex-falcated, nerved, an inch wide. Flowers blue, with the ſmaller petals quite entire[p].]

This has the largeſt leaves of any of the ſpecies; they are of a grayiſh colour and ſpread wide, embracing each other at their baſe, where they are purpliſh. The ſtalks riſe near four feet high, and divide into ſeveral branches, each ſupporting three or four flowers, which are covered with a thin ſheath; the three bending petals or falls are of a faint purple inclining to blue, with purple veins running lengthwiſe; the beard is yellow, and the three erect petals or ſtandards are of a bright blue, with ſome faint purple ſtripes; the flowers have an agreeable ſcent.

[Native of Germany, Switzerland and Dauphiné.—Cultivated in 1596 by Gerarde. It flowers in may and june[q].

10. Outer petals bent back, very dark purple, with yellowiſh ſtains below the middle; beard yellow. Inner petals obovate-oblong, a little ſhorter than the outer ones, with a purpliſh border, and a dirty yellow claw. Stigmas dirty yellow, pale purpliſh above. It may perhaps be no more than a variety of I. ſambucina, but it is totally void of ſmell. Native of the South of Europe. Cultivated by Mr. Miller in 1758. It flowers in april[r].

11. Scape divided at top, longer than the leaves, two (or three) feet high. Leaves inflex-falcated at top, ſtriated, the upper ones gradually ſhorter. It reſembles I. germanica, from which, however, it differs in having the larger petals of a deeper violet colour, and ſubemarginate; the ſmaller petals emarginate, and of a deeper blue colour; the ſtigmas acute and ſerrate, with a blueiſh keel[s]. It derives the trivial name from the ſmell of the flowers, which is very like that of Elder in bloom[t]. It flowers at the end of may, and in june; is a native of the South of Europe; and was cultivated in 1748, by Mr. Miller[u]. Mr. Curtis takes it to be the ſame with Iris Camerarii of Parkinſon (parad. 181.); and if ſo, it was probably known to our gardens in his time.]

12. The roots of this are very thick, fleſhy, and divided into joints, ſpreading juſt under the ſurface of the ground; they are of a browniſh colour on their outſide, but white within; the leaves ariſe in cluſters, embracing each other at their baſe, but ſpread aſunder upwards in form of wings; they are a foot and a half long, and two inches broad, having ſharp edges, ending in points like ſwords; the ſtalks between theſe, which are a little longer than the leaves, having at each joint one leaf without a foot-ſtalk; theſe diminiſh in their ſize upwards; the ſtalks divide into three branches, each of which produces two or three flowers one above another at diſtances, each incloſed in a ſheath; they have three large violet-coloured petals which turn backward, and are called falls; theſe have beards near an inch long on their midrib towards their baſe, and have a ſhort arched petal which covers the beard, with three broad erect petals of the ſame colour, called ſtandards; the ſtamina lie upon the reflexed petals. Under each flower is ſituated an oblong germ, which turns to a large three-cornered capſule, filled with large compreſſed ſeeds. This flowers in june, and the ſeeds ripen in auguſt.

There is a variety of this with blue ſtandards and purple falls, and one with pale purple ſtandards, another with white, and a third with a ſmaller flower, but theſe are accidental varieties which have come from ſeeds.

[It differs from I. germanica, to which it bears ſome reſemblance, in having the larger petals folded back in the middle, of a deeper violet colour, with white or yellowiſh veins, and blueiſh in the middle; and the ſmaller petals and ſtigmas of a ſqualid yellow colour, and emarginate. The ſcape is divided at top, that is, the lower flowers are peduncled, it is ſtriated, and about two feet high. The leaves are ſharp and nerved[x].

Native of the South of Europe. Cultivated by Mr. Miller in 1768[y].

13. Stem fruteſcent, compreſſed, ſmooth, branching dichotomouſly, jointed, decumbent, ſomewhat upright at top, bracted, a foot high and more; branches alternate, elongated, like the ſcape, one-flowered. Bractes or ſpathes on the ſtem and branches alternate, compreſſed with a ſharp keel, ſmooth, membranaceous at top, an inch long, ſhorter than the internodes. Leaves acute, nerved, ſhorter than the ſtem, a foot long. Corolla white; claws of the larger petals a little widened, bearded within, dotted with yellow. A yellow ſpot in the flexure. Border blunt. Claws of the ſmaller petals only half the width of the others, and without any ſpots: borders oblong, blunt, upright. Filaments connate at the baſe, awl-ſhaped, white. Stigmas blueiſh-white; outer lip crenulate, inner bifid; ſegments lanceolate, upright, ſhorter than the petals. Native of Africa, in the interior country of the Hottentots[z].

14. Root tuberous, creeping. Stems ſeveral, ſhort, inclining upwards, compreſſed, leafy. Leaves ſcarcely ſix inches long, ſharpiſh, a little curved like a ſickle at the tips, entire, with a pale membranaceous margin. Flower generally ſolitary, a little ſhorter than the leaves, erect, of a pale purpliſh blue: outer petals drooping, obtuſe, blue, with deeper blue ſpots, creſted in the place of the beard with three longitudinal, elevated, waved ribs, variegated with orange and yellow; inner petals narrower, pointed, uniform in colour. Stigmas of the ſame colour as the petals, and half as long[a].

Native of North America, whence it was ſent by Mr. Peter Collinſon in 1756. It flowers in may[b].

15. Stem round, ſmooth, branched. Branches ſimple, elongated, naked, ſpreading very much, three-

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[h] Thunberg.
[i] Hort. kew.
[k] Thunberg.
[l] Hort kew.
[m] Ger. herb.
[n] Thunberg.
[o] Hort. kew.
[p] Thunberg.
[q] Hort. kew.
[r] Ibid.
[s] Thunberg.
[t] Curtis.
[u] Hort. kew.
[x] Thunberg.
[y] Hort. kew.
[z] Thunberg.
[a] Smith.
[b] Hort. kew.

flowered or thereabouts. Leaves radical, ſix or ſeven, embracing, diſtich, ſhort; there is a very ſhort ſtem-leaf at each ramification. Flowers on long peduncles, pale purple, the ſmalleſt of any in the genus[c].

Native of Siberia. Introduced in 1784 by Mr. John Bell. It flowers in auguſt[d].

16. Bulb ſtriated, globular, fibrilled. Leaf ſingle, ſheathing, channelled, ſmooth, nerved, looſe, hanging down, twice the length of the ſcape; which is ſingle, upright, round, jointed, moſtly one-flowered, ſmooth, a foot high: joints embraced by bractes reſembling ſpathes. Flower terminating, ſolitary. Spathe two-valved, embracing the peduncle; the lower ſhorter, acute, ſmooth. Within this lies the unfolded flower, with two very thin, linear-oblong bractes. Corolla blue, with a yellow-joint: claws of the larger petals broader, linear, dotted on the inſide with blue, having a nectareous hollow at the baſe; border ovate, acute, very pale blue, with the joint bearded: claws of the ſmaller petals very narrow, convex on the outſide, frequently having two oppoſite teeth below the joint; border from jointed ſpreading, linear awl-ſhaped: all the claws connate at the baſe, and inſerted into the germ. Filaments half the length of the tube, connate at the baſe. Anthers yellowiſh. Germ ovate, ſix-grooved. Style three-cornered, incraſſated, ſmooth. Stigmas linear: outer lip blunt, inner very long, acute, almoſt the length of the border.

Native of the Cape of Good Hope near Cape Town, Picketberg, &c.

17. Bulb the ſize of a hazel nut. Scape ſimple, round, jointed, upright, bearing one or two flowers, a foot and half in height. Leaf ſingle, nerved, upright, with the tip hanging down, two feet long. Border of the larger petals white, ſuborbiculate, with a point; claws green on the outſide, yellow within, dotted with black. Smaller petals ſeveral times ſhorter and leſs: claws convex on the outſide, green, concave within, dotted with brown, the length of the larger ones, but narrower; ſegments lanceolate, divaricating, a line in length, the middle one of the three a little longer, white dotted with brown. Inner lip of the ſtigma bifid, the clefts ovate, blunt, only half the length of the larger petals, white, upright. It varies in the ſhape of the larger petals, and very much in the colours, blue, purple, yellow, white, and ſpotted.

Native of the Cape, on the hills below Duyvelſberg, in Swartland, and near Bergrivier[e].

Mr. Curtis, when he figured this ſpecies under the name of *J. pavonia* (*magaz. t.* 168.) had his doubts whether it was the *pavonia* of the *Syſtema vegetabilium*. He deſcribes it as a ſmall delicate Iris, about a foot and half high, with very narrow leaves, bearing on the top of the ſtalk one, or at moſt two flowers; three of the petals large and white, with a brilliant blue ſpot at the baſe of each, edged on the outer ſide with deep purple; the delicacy of the flower, and the eye-like ſpot at the baſe of three of the petals, render it one of the moſt ſtriking plants of the genus. His figure is from a plant that flowered with Meſſ. Grimwood and Co. in june 1794; and they received it from Holland.—It had flowered, however, before in the Royal botanic garden at Kew, namely in 1776[f].

18. Scape jointed, flexuoſe, almoſt upright, branched at top, bracted, from a hand to a ſpan in height. Leaf linear, from reflex-ſpreading, ſhorter than the ſcape. Petals connate at the baſe: claws of the larger ones obovate, greeniſh on the outſide, with a thinner blue edge; pale blue within; a yellow ſpot, three-toothed, and the beard in a double line; borders blunt, violet, alternately a little narrower and ſhorter. Anthers ſaffron-coloured in front, black at the tip and on the back. Stigmas pale blue, ſhorter than the borders of the petals, cowl-two-lipped: outer lip linear, awned at the tip with five or ſix ſhort briſtles, and curved in; the inner ſhorter, briſtly-multifid, like the petals of Dianthus plumarius. Sometimes, but very ſeldom, the ſcape is one-flowered, but it is moſtly branched, with one-flowered and three-flowered branches.

Native of the Cape of Good Hope below Duyvelſberg[g].

19. Xiphium or bulboſe-rooted Iris has the leaves channelled and convoluted, not only at the baſe, as in the other ſpecies, but the whole length of them; they are awl-ſhaped at the tip, and ſhorter than the ſcape. The flowers are blue, with emarginate petals[h].]

Mr. Miller makes two diſtinct ſpecies, which are here given as varieties. The *latifolium* (our α) he ſays, has much larger roots, with larger leaves, the flower-ſtalk is near twice the height, and the flowers are more than double the ſize.

There are many varieties of theſe, the moſt common colour is blue, deeper or lighter; but it is alſo yellow, white, blue with white or yellow falls, violet-coloured with blue falls, variegated, &c.

[Native of the South of Europe.—Dr. Naſh, in his hiſtory of Worceſterſhire, informs us, that it was diſcovered by the late Dutcheſs Dowager of Portland by the river ſide near Fladbury, and in other parts of that county[i].

Gerarde cultivated it, and ſays that he received it from his brother James Garret, Apothecary. He ſays, "it is daſht over, inſtead of the blew or watchet colour, with a moſt pleaſant gold yellow colour, and is of ſmell exceeding ſweet."

20. Root fleſhy, the thickneſs of the thumb, ſpreading horizontally near the ſurface, blackiſh on the outſide, reddiſh and ſpongy within, the upper part covered with numerous rigid fibres, the lower part ſending down many long, whitiſh, wrinkled, ſtringy roots. Leaves from the root, two or three feet long, upright, an inch or more in breadth, ſtriated, having a prominent longitudinal midrib, equal to the ſcape, deep green, ſmooth: ſtem-leaves ſhorter, forming a ſheath at the bottom. Scapes from one to three feet in height, upright, alternately inclined from joint to joint, round or flatted a little, ſmooth and ſpongy. Peduncles axillary, flat on one ſide, and ſmooth; each ſuſtaining two or three flowers, the two outer (when there are three) having one ſheath, and the middle flower two. Corolla yellow: the three outer petals large, roundiſh-ovate, reflex, one-toothed on each ſide, ſtreaked with purple lines at the baſe of the lamina, and having two ſmall holes at the bottom of the claw. Anthers yellow with purpliſh edges, two-celled, opening beneath. Germ three-cornered, the angles blunt and grooved. Stigma much larger than the ſmall petals, yellow, cut into fringed ſegments at the top[k]. Dr. Withering ſays he ſhould be tempted to deſcribe the flower as having nine petals, and three ſtyles connected longitudinally to the three innermoſt petals.

It is common in moſt parts of Europe, in marſhy meadows and fens, by the ſides of rivers, brooks, lakes, pools and ditches, flowering at the end of june, or the beginning of july.

It is called by Engliſh writers water Flower-de-luce, Yellow Flag, Water Flag, and provincially Skeggs or Lugs.]

21. Root thick, tufted, fibrous. Leaves graſs-green, when broken emitting a ſtrong odour, not much unlike that of hot roaſt beef at the firſt ſcent, but if ſmelt too cloſe, becoming diſagreeable. [Dr. Withering compares the ſmell of them to rancid bacon. They are acute and nerved, rather ſhorter than the ſcape; which is ſingle, cylindrical, but angular on one ſide, jointed, ſheathed with alternate ſpathaceous leaves, two feet high, bearing ſeveral flowers. Corolla of a lurid purpliſh aſh-colour, not ſmelling in the night time: claws of the outer petals wrinkled and plaited on the under ſurface: inner petals larger than the ſtigmas, ſpreading[l].

Native of France, Italy, England: as near Hornſey; about Charlton wood, and between Eltham and Chiſlehurſt in Kent; near Braintree and Woodford in Eſſex; Bath hills, Ditchingham, Norfolk; near Cherry-Hinton, Teverſham, Fulborn and Triplowin Cambridgeſhire; between Dunſtable and St. Alban's; near Perſhore in Worceſterſhire; and in all the South Weſt counties very common: on hedge banks and ſloping ground: flowering from the end of june to auguſt. It runs much at the root and flowers ſparingly. In Engliſh it is named Stinking Iris or Flower de-luce, Stinking Gladwyn or Gladdon.

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[c] Thunberg.

[d] Hort. kew.

[e] Thunberg.

[f] M. S. Soland.

[g] Thunberg.

[h] Ibid.

[i] Withering.

[k] Curtis.

[l] Linneus.

22. Root white within, black without, the thickneſs of the thumb, having white fibres, and briſtly at top, with the remains of leaves. Scape compreſſed, upright, jointed, ſheathed with alternate leaves, many-flowered, the length of the leaves, or a little higher, a foot in length. Leaves narrow, ſharp, curved in at the tip, nerved and ſmooth, as is the whole plant. Spathes membranaceous, acute, browniſh, ſhorter than the peduncles, very thin at the edge and tip. Peduncles two or three inches long, round, ſlender, upright, one-flowered. Flowers elegant, but without ſcent. Claws of the outer petals channelled, green on the outſide, yellow on the inſide, ſtreaked with dark purple; border flat, rounded-ovate, blunt, quite entire, pale at the baſe, then blue with deep-blue ſtreaks: inner petals ſpatulate, blunt, upright, ſhorter, bluer and ſtreaked. Stigmas bifid, blunt, of the ſame colour with the inner petals. Anthers violet-coloured[m].

Native of Virginia. It flowers here in june and july;—and was cultivated by Mr. Miller in 1758[n].

23. Scape jointed, bifid at the top or ſimple, many-flowered, higher than the leaves, two feet in length. Leaves alternate, ſheathing; the upper ones gradually ſhorter. Flowers blue, large[o].

Dillenius has deſcribed and figured two varieties of this, the firſt with the ſtigmas not crenated, and the ſecond with the ſtigmas crenated; they differ alſo ſomewhat in colour.

Mr. Curtis remarks that this ſpecies has, for the moſt part, a ſtalk unuſually crooked or elbowed, that it is the *picta* of Mr. Miller, and that the *verſicolor* of Miller is probably the *ſibirica* of Linneus.

It is a native of North America, and was cultivated in 1732 by James Sherard, M.D. It flowers in may and june[p].

24. Scape round or roundiſh, covered with the ſheaths of leaves, many-flowered, longer than the leaves, a foot high. Leaves falcated, acute, ſtriated, nerved. Spathes membranaceous at the edge. Larger petals dilated at the baſe with duſky veins; leſſer ſnowy-white, with yellowiſh veins at the baſe. Stigmas ſnowy-white. Capſule hexagonal, with blunt angles[q].

This being the higheſt of the ſpecies of Iris cultivated in our gardens, Mr. Curtis has named it *Tall Iris.*

Notwithſtanding Mr. Miller's deſcription of his *orientalis* accords very badly with this, they have been generally conſidered as the ſame plant, diſtinguiſhed by the name of *Pococke's Iris*, Dr. Pococke having firſt introduced it, according to Mr. Miller, from Carniola; but that is probably a miſtake, for it is a native of the Levant[r]; and Mr. Miller accordingly names it *orientalis.*

It was cultivated by Mr. Miller in 1759[s]. It flowers in july.

25. Long-leaved Iris is a native of Siberia, and was introduced in 1780 by Chevalier Pallas. It flowers from july to ſeptember[t].

26. Scape ſimple, many-flowered, a foot high. Leaves two, or one only, from the middle to the end gradually but much attenuated, margined, nerved, ſtriated, rigid, ſmooth. Spathes like the leaves, but broader, membranaceous at the tip, a ſpan long.—Native of the Cape of Good Hope, in Hauteniquas near Wolfwekraal, and Langekloof near Keurbooms rivier[u].

27. Stem round at bottom, the thickneſs of a finger, very much branched at top, and many-flowered. Branches ſubtrichotomous, panicled, compreſſed and angular, flexuoſe, ſmooth. Root-leaves with long ſheaths, nerved, attenuated at the tip, ſmooth, about the ſame length with the ſtem. Stem-leaves gradually ſhorter, and dwindling into ſpathes. Flowers yellow, ſmall. Bractes at the ramifications ovate, acute, membranaceous, ſhorter than the branches and peduncles. Native alſo of the Cape, in the ſands of Swartland[x].

28. Root compoſed of two bulbs, one over the other, as in Gladiolus and Crocus. Scape very ſhort, ſimple, the whole ſheathed with leaves, a finger's length. Leaves ſeveral, attenuated at the tip, reflex, waved, longer than the ſcape. Petals purple, with a yellow ſpot in place of the beard[y].

Native of Spain and Portugal. Cultivated in 1597 by Gerarde. It flowers in may[z]. Gerarde and Parkinſon name it Spaniſh Nut. Ray found it in Sicily flowering in the month of april.]

29. This has tufted fibrous roots, from which ariſe many graſs-like leaves about nine inches long; from between them come out the ſtalks, which are ſhorter than the leaves, and ſupport one purple flower with blue ſtandards. It flowers in may, but ſeldom produces ſeeds in England.

[Scape covered with alternate ſpathes, ſimple. Leaves linear, nerved[a]. Native of North America. Cultivated by Mr. Miller in 1739[b].]

30. Perſian Iris has an oval bulbous root, from which come out five or ſix pale-green leaves, hollowed like the keel of a boat, about ſix inches long, and one inch broad at the baſe, ending in points. Between theſe the flower-ſtalk ariſes, which is ſeldom above three inches high, ſupporting one or two flowers, incloſed in ſpathes: theſe have three erect petals or ſtandards, of a pale ſky-blue colour, and three reflexed petals or falls, which on their outſide are of the ſame colour, but the lip has a yellow ſtreak running through the middle, and on each ſide are many dark ſpots, with one large deep-purple ſpot at the bottom.

[Linneus remarks, that the bulb puts forth a gem from two pairs of ſcales, between which are the leaves and a ſingle flower in a ſimple ſpathe; that the leaves are ſubulate-channelled, and longer than the ſtem.

The leaves are ſtriated and nerved, unequal, and a ſpan in length. The larger petals are oblong, blunt, waved, ſubemarginate, convoluted; having a yellow line along the middle, with violet-coloured dots, and ſpots of the ſame at the tip: the ſmaller petals are linear oblong, patulous, white, convoluted: each lip of the ſtigma upright, pale blue; inner bifid, with lanceolate ſegments[c].

Native of Perſia. Cultivated here in the time of Parkinſon (1629.)[d], who remarks that it was then very rare, and ſeldom bore flowers.]

The Perſian Iris is greatly eſteemed for the beauty and extreme ſweetneſs of its flowers, as alſo for its early appearance in the ſpring, it generally being in perfection in february or the beginning of march, according to the forwardneſs of the ſeaſon. [Like the Hyacinth and Narciſſus it will blow within doors in a water-glaſs, but ſtronger in a ſmall pot, or ſand or ſandy loam, and a few flowers will ſcent a whole apartment[e].

31. Bulb ovate, tunicated, ſmooth, fibroſe, the ſize of a hazel nut. Scape round, upright, almoſt ſimple, ſheathed, jointed, a ſpan or a little more in height. Leaf ſheathing the ſcape for a conſiderable length at bottom, acuminate, ſtriated, longer than the ſcape. Flowers terminating, one or two, upright. Outer ſpathe ſmooth, green with a red tip; the inner ones very thin, white. Claws of the larger petals yellow with the edge white, dotted with purple on both ſides; joint even, ſaffron-coloured, with a purple circle; border ovate, blunt, ſpreading, yellow within, purple-nerved on the outſide. Smaller petals lanceolate, blunt, yellow, ſtreaked with duſky purple on the outſide, narrowing gradually into the claws, all of which are connate at the baſe. Inner lip of the ſtigmas bifid; ſegments oblong, acute, the inner ſide ſtraight, the outer produced, erect, yellow. Capſule acutely three-cornered, blunt.

Native of the Cape of Good Hope, on the hills below Duyvelſberg and Lewekopp[f].

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[m] Jacquin and Thunb.
[n] Hort. kew.
[o] Thunberg.
[p] Hort. kew.
[q] Thunberg.
[r] Thunb. Hort. kew. Curtis.
[s] Hort. kew.
[t] Ibid.
[u] Thunberg.

[x] Thunb.
[y] Ibid.
[z] Hort. kew.
[a] Thunb.
[b] Hort. kew.
[c] Thunb.
[d] Hort. kew.
[e] Curtis.
[f] Thunberg.

32. Scape filiform, generally ſimple, but ſometimes divided and three-flowered, upright, from a hand to a ſpan in height. It has commonly only one leaf; (but ſometimes there are two) it is upright except at the tip, where it droops, and is twice as long as the ſcape. Flowers blue, ſmall.—Native of the Cape.

33. Scape ſimple, covered with the ſheaths of the leaves, which are few, but the ſheaths are broad. Flowers terminating, pale blue: outer lip of the ſtigma very ſhort and blunt: inner bifid, ſegments oblong. Capſule filiform, longer than the corolla.

Native of Siberia, in the ſands of Dauria, and near the Wolga [g].]

34. This has narrow, flat, graſs-like leaves, about a foot long, of a light-green colour; between theſe ariſe the ſtalks about ſix inches high, having two narrow leaves much longer than the ſtalks. Flowers two or three, ſmall: the petals have a broad yellow line with purple ſtripes; the three falls are of a light purple colour ſtriped with blue, and have a convex ridge running along them: the others are of a reddiſh purple variegated with violet; they have a ſcent like freſh plums. Capſule ſhort, with three borders or wings, [hexagonal by means of ſix deep grooves [h].

Native of Auſtria. Cultivated in 1597 by Gerarde. It flowers in june [i].

35. Root knobbed, blackiſh on the outſide, whitiſh within, with long pale fibres. Stem round very ſlightly compreſſed, ſtraight or a little flexuoſe, from two to three feet in height, taller than the leaves. Flowers commonly two, on ſhort peduncles, each involved in its ſpathe; ſometimes there are three; they have no ſcent. Colour blue-purple; but under the ſtigmas the reflex petals are more inclined to red: upright petals flat, and uſually quite entire.] Mr. Miller ſays that the flowers have light blue ſtandards, and purple variegated falls, having a broad white line in the middle inſtead of the beard. [Capſule oblong, acuminate, hexangular, three of the ſides alternately thrice the breadth of the other three [k].

Mr. Curtis remarks, that it is diſtinguiſhed by the narrowneſs of the leaves which emit a diſagreeable ſmell when bruiſed; by the fine rich purple colour of the flowers inclining to blue, and by its hexangular germs.

Native of Germany and Auſtria, in wet meadows. Cultivated by Mr. Miller in 1759. It flowers in july [l].

36. Scape a foot high or more, dividing at top, three-flowered or many-flowered, longer than the leaves; which are nerved and flat. Flowers blue, in brown, ſcarioſe ſpathes [m]. The inner petals are upright. Germ trigonal, not grooved at the angles [n]. It is diſtinguiſhed from the other ſorts uſually cultivated in our gardens by the ſuperior height of its ſtems, and the narrowneſs of its leaves; by the latter circumſtance however, it is often confounded with the *graminea* [o].

Native of Siberia, Auſtria, and Switzerland. Cultivated by Gerarde in 1596. It flowers in may and june [p].

37. Root oblique, knobbed, covered with brown filaments from the remains of the leaves, fibroſe beneath, above producing in joints abundance of ſmall narrow bulbs. Leaves linear-awl-ſhaped, the third part of an inch in breadth; root-leaves five, ſtem-leaves few, flexuoſe at the top or in the middle. Stem fiſtular, many-flowered. Spathe ferruginous, two-valved or many-valved. Flowers terminating, three; the middle one peduncled; the others, as alſo the lower ſolitary one, ſubſeſſile. Corolla white; the reflex petals have the border toothletted, the claw linear, yellow with violet-coloured veins; the upright petals ſhorter by half, wholly white, waved, with very narrow claws. Stigmas large, white, deeply bifid, crenated. Capſule ovate-oblong, trigonal, with wrinkled valves [q]. It approaches very near to the preceding ſpecies [r].

38. Root ſolid, ſubbulboſe, ſurrounded by whitiſh fibres, and throwing out other tubers. Stem upright, roundiſh, two feet high, ſimple. Root-leaves acuminate, quite entire, ſomewhat rigid, diſtich, flat, keeled at the baſe, above ſimple, from upright ſpreading, few. Flowers few, coming out ſucceſſively from the ſame ſpathe, yellow, without ſcent, peduncled; the petals have a black ſhining glandular hole or pit, like that which is common to ſeveral ſpecies of Ranunculus.

Native of Martinico, in moiſt mountainous woody paſtures; flowering in november and december. It was raiſed from ſeed at Vienna about the year 1760, but had not flowered there in three years after [s].

Native alſo of the iſland of St. Lucia, whence it was introduced into the royal garden at Kew in 1782, by Mr. Alexander Anderſon. It flowers in june [t].

39. Scape round, jointed, villoſe, ſimple, a foot high, ſuſtaining one or two flowers. Leaf ſomewhat channelled, ſtriated, villoſe, the length of the ſcape. Spathes acute, ſtriated, ſmooth, two inches long. Peduncles ſubancipital, one-flowered, ſmooth. All the petals united at the baſe: the three outer ſeveral times bigger than the others, ovate, obtuſe, entire; the three inner much narrower and ſhorter by half, lanceolate, acute. Nectaries three within the larger petals; each an ovate, blunt leaflet, petal-ſhaped at the baſe. Filaments connected beyond the middle into a cylinder, linear-ſubulate, ſeveral times ſhorter than the corolla, purpliſh. Anthers preſſed cloſe to the ſtigmas, orange-coloured with two brown lines. Stigmas the length of the ſtamens. Capſule trigonal.

This beautiful flower is orange-coloured, with black ſpots and dots at the baſe, and a heart-ſhaped blue ſpot above the baſe, which at bottom is tomentoſe and black.

Native of the Cape of Good Hope, in Swartland and elſewhere among buſhes [u].

40. Scape grooved, flexuoſe, divided at top, a hand or more in height. Leaves radical, alternate, reflex, equal to or longer than the ſcape. Flowers terminating, alternate, the lower peduncled, three or four in number. Corolla ſix-petalled. Alternate petals larger, border ovate obtuſe veined, yellow and very finely dotted at the flexure: the ſmaller petals a little narrower, ſcarcely ſhorter than the others, like them and ſpreading. Anthers ovate, black; pollen orange burſting from the outer ſide. Outer lip of the ſtigma very ſhort, yellow; inner bifid, yellow, ſegments lanceolate, acute, the length of the petals. This varies in the colour of the corolla, yellow with blood-red veins, blue, and fleſh-colour.

Native of the Cape of Good Hope, on the hills near Cape-Town [x].

41. Bulb ovate, coated, the ſize of a pea. Scape upright, hairy, divided, many-flowered, a hand in height. Leaves convoluted, flexuoſe and recurved, marked on the outſide with lines and hairy; within pubeſcent; the length of the ſcape or a little longer; the upper ones ſhorter; the uppermoſt ſpathe-form. Spathes in pairs, ſheathing, reſembling the leaves, hairy. Peduncles three-cornered, two together from the ſame point, three or five, incraſſated, ſmooth, unequal. Flowers expanding ſucceſſively. Claws of the larger petals broader, with a nectareous excavation at the baſe, green variegated; border ovate, acute, with a green circle at the knee: claws of the ſmaller petals linear, border ovate-oblong, acute: all the claws connate at the baſe. Inner lip of the ſtigmas bifid; ſegments oblong, acute. There are ſeveral varieties of this ſpecies alſo; as wholly yellow, except the green circle mentioned above; with the petals and piſtils red within, a yellow ſpot at the knee, and a duſky circle; and the larger petals yellow, with a green circle at the knee, the borders of the leſſer petals and inner lips of the ſtigmas blood-red.

This ſpecies differs from *I. ciliata* in having the whole leaves rough-haired, and the alternate borders of the petals ovate.

Common on the hills about Cape Town [y].

[g] Thunberg.
[h] Jacquin.
[i] Hort. kew.
[k] Jacquin.
[l] Hort. kew.
[m] Thunberg.
[n] Linn.
[o] Curtis.
[p] Hort. kew.
[q] Murray in comm. gott.
[r] Murr. in ſyſt.

[s] Jacquin.
[t] Hort. kew.
[u] Thunberg.
[x] Ibid.
[y] Ibid.

42. Scape deeply radicate, round, flexuoſe, divided at top, a foot high. Leaf ſheathing the ſcape at bottom for a great length, erect but hanging down at the tip, thrice the length of the ſcape. Flowers ſolitary or ſeveral, alternate, chiefly directed one way, Petals connate at the baſe. Filaments awl-ſhaped, white, connate at the baſe like the petals. Anthers grooved in front, yellow or white. Outer lip of the ſtigma obtuſe, quite entire: inner bifid, ſegments lanceolate, acute; notchletted on one ſide which is produced, from upright bent in, the length of the ſmaller petals. It varies with blue, white and yellow flowers, the firſt having duſky ſtreaks, and the laſt ſpotted.

Common at the Cape, in the ſands of Groenekloof, Swartland, the low plains near Cape Town, Duyvelſberg, &c.[z]

43. Scape divided, almoſt upright, many-flowered, a ſpan in height. Branches or peduncles flexuoſe, ſpreading very much, hirſute, from one to three-flowered. Leaves waved, nerved, hanging down at the tip, longer than the ſcape. Smaller petals narrower by half than the others, ovate-lanceolate: tube greeniſh, connate at the baſe: all the borders dull-coloured or ruſeſcent, with a red keel, bright yellow at the bending. Anthers blue. Inner lip of the ſtigma bifid; ſegments lanceolate, with the keel blue on the outſide, a little ſhorter than the borders.

Native of the Cape, below Duyvelſberg, near Cape Town[a].

44. Scape round, divided at top, jointed, many-flowered, a foot and more in height. Leaves ſetaceous-attenuated at the tip, nerved, upright, equalling the ſcape. Flowers large, handſome, blue with yellow at the flexures. Spathes ſcarioſe at top, jagged. It differs from I. ramoſa by its branched ſcape and ſimple peduncles.

Native of the Cape, between Sondagſrivier and Viſchrivier[b].

45. Scape round, ſmooth, jointed, from flexuoſe upright, divided at top, glutinoſe, purpliſh, a foot high. Peduncles alternate, flexuoſe, glutinoſe, one-flowered. Leaves few, upright, longer than the ſcape. Borders of the larger petals ovate, bluntiſh, whitiſh at the flexure: ſmaller petals a little narrower and ſhorter; claws greeniſh white within and without. Inner lip of the ſtigma bifid; ſegments lanceolate, ſhorter by half than the borders of the larger petals: outer lip bifid, half the length of the other.

Native of the Cape, in Saldahna bay[c].

46. Scape jointed, from flexuoſe-upright, divided at top, glutinoſe, many-flowered, a foot and more in height. Leaf ſingle, attenuated at the tip, ſtriated, ſmooth, ſhorter than the ſcape. Spathes ſheathing the joints, ſtriated, ſmooth. Flowers ſolitary on peduncles. Peduncles from ſheaths with the ſcape two, filiform, flexuoſe, ſpreading, viſcid, an inch and more in length. Corolla reflex, yellow all over. The three larger petals blunt, with red dots at the flexure. Stigmas yellow: outer lip very ſmall; inner bifid: ſegments lanceolate, acute, the length of the ſmaller petals.

Native of the Cape, near Bergrivier, &c.[d]]

47. This has a tuberous root, as the name implies. There ariſe from it five or ſix long narrow four-cornered leaves, and from between theſe the ſtalk, ſupporting one ſmall flower, of a dark purple colour. It flowers in april, but does not produce ſeeds in England.

[Native of the Levant. Cultivated in 1597, as appears from Gerarde[e].

Linneus remarks that this differs from its congeners not only in having tuberous roots and four-cornered leaves, but the three inner petals awl-ſhaped, and all parts of the flower very minute, the three ſegments of the ſtigma bifid beyond the middle, and the colour of the flower greeniſh.

48. Scape jointed, ſtriated, ſmooth, upright, a foot high. Leaves nerved, ſhorter than the ſcape. Spathes like the leaves, obverſe, gradually ſhorter. Flowers from the axils of the ſpathes. Corollas one-petalled, white.

Native of Japan. Thunberg originally took it for the *ſqualens* of Linneus.

49. Scape ſtriated, ſmooth, upright, a foot high or more. Leaves radical, nerved, ſmooth, attenuated at the tip, equal to the ſcape. Spathes like the leaves, gradually ſhorter. Flowers about two, ſubterminating. Corolla duſky-netted.

Native of Japan, where it was found by Thunberg, and ſuppoſed by him at firſt to be the ſame with I. ſibirica of Linneus.

50. In the Flora Japonica Thunberg took this to be I. graminea of Linneus; but the ſcape is round or columnar, not two-edged or ancipital; and the germs are hexagonal.

Native of Japan[f].

Uſes of the Iris.

Moſt of the ſpecies are cultivated in flower-gardens for their beauty, and would attract more regard, were it not for the facility with which they are propagated.

Many of the African ſorts, eſpecially the *edulis*, furniſh nutriment both to men and monkeys: the bulbs with the ſcapes collected in bundles and gently boiled are eſteemed pleaſant and nouriſhing.

The roots of Iris are recommended for their medical qualities by Dioſcorides and the Arabians: thoſe of *Florentina*, *Germanica*, and *Pſeudacorus* are ſtill uſed in medicine[g].

The root of *Iris Florentina* is extremely acrid, and when chewed excites a pungent heat in the mouth, which continues ſome hours: on being dried, this acrimony is almoſt wholly diſſipated, the taſte being ſlightly bitter, and the ſmell agreeable, and approaching to that of Violets. No eſſential oil has hitherto been obtained from this root, but ſpirituous tinctures of it contain more of its virtues than watery infuſions. The freſh root is a powerful cathartic, and for this purpoſe its juice has been employed in the doſe of a dram and upwards in dropſies. It is now chiefly uſed in its dried ſtate, and ranked as a pectoral, or expectorant, and hence has a place in the Trochiſci amyli of the Lond. Pharm. We have however no evidence of its expectorant powers, and therefore muſt conſider it as valuable only for the pleaſantneſs of its perfume, and the flavour which it communicates.

The root of *Iris Pſeudacorus* or Common Yellow Water-Flag had formerly a place in the London Pharm. under the name of Gladiolus luteus. It has an acrid burning taſte, and the juice on being ſnuffed up the noſtrils produces a great heat in the mouth and noſe, accompanied by a copious diſcharge from theſe organs: hence it is recommended as a ſialogogue and an errhine. The root is ſuch a powerful aſtringent, that it has been uſed inſtead of galls in making ink, and alſo for the purpoſe of dying black: and from the ſame quality, it has alſo been uſed ſucceſsfully in diarrhœas: when given with this intention, the root ſhould be well dried; the freſh root and its juice being ſo ſtrong a cathartic that eighty drops of the latter produced repeated evacuations after jalap, gamboge, &c. had failed: this doſe was given every hour or two in a little ſyrup of buckthorn, and had very immediate effects; cauſing the patient to diſcharge by ſtool ſeveral Scots pints of water in the courſe of the night. By continuing its uſe in an increaſed doſe it cured an inveterate dropſy. Hence Bergius ſays "Virtus *recent.* hydragoga, purgans; *ſiccat.* adſtringens." The expreſſed juice is likewiſe ſaid to be an uſeful application to ſerpiginous eruptions and ſcrophulous tumours[h].

The *Iris Germanica* or Common blue Flower de Luce poſſeſſes ſimilar qualities; the freſh roots being a ſtrong irritating cathartic: in this intention their freſh juice may be given in hydropic caſes in doſes of one or two drams to three or four ounces, diluted largely with watery or vinous liquors, to prevent its inflaming the throat. The remarkable differences in the doſe, as directed by different practitioners, appear to ariſe from this circumſtance; viz. that ſome have employed the juice in its recent turbid ſtate, loaded with the acrimonious cathartic matter of the root, while others uſed ſuch as had been depurated by ſettling, and which had depoſited its more active and acrimonious parts[l].

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[z] Thunberg.

[a] Ibid.

[b] Ibid.

[c] Ibid.

[d] Ibid.

[e] Hort. kew.

[f] Thunb. in Linn. tranſ.

[g] Thunb. diſs.

[h] Woodville.

The root of Flower de Luce ſuſpended in wine or beer keeps the latter from growing ſtale, and communicates a pleaſant taſte and ſmell to the former. The juice is alſo ſometimes made uſe of as a coſmetic, and for removing freckles.

A moſt beautiful paint or colour is prepared from the flowers in the following manner; viz. the flowers are collected before they are fully expanded, and are to be bruiſed in a ſtone mortar with a wooden peſtle: then put into a glaſs, and placed for ſome days in a cellar or other moiſt place: after the ſpace of about a fortnight the maſs, which is now become liquid, is to be ſet over the fire in a glaſs pot, till about a third part is conſumed; then ſome roche alum is to be put into it, more or leſs, till it becomes clear, and acquires its fine blue colour; after which it is poured into ſhells for uſe, as a water colour.

Iris foetidiſſima or Stinking Gladdon. The country people in ſome parts of England are ſaid to purge themſelves with the decoction of this plant. Thoſe who would not have it work too ſtrongly, make an infuſion of the ſliced roots in ale; and ſome take the leaves, which are more convenient for tender ſtomachs. The juice of the root has alſo been uſed as an emmenagogue as well as for cleanſing eruptions of various kinds.]

PROPAGATION AND CULTURE.

All the hardy ſorts of Iris are generally propagated by parting their roots, which moſt of them multiply faſt enough. The beſt time to remove and part the roots is in autumn, that they may get good root before the ſpring, otherwiſe they will not flower ſtrong the following ſummer. All thoſe ſorts which ſpread much at their roots ſhould be tranſplanted every other year, to keep them within bounds, otherwiſe they will ſpread ſo much as to become troubleſome, eſpecially if they are planted near other flowers; indeed, the large growing kinds are moſt of them too ſpreading for the flower-garden, ſo are only fit to fill up the ſpaces between trees and ſhrubs in large plantations, where they will have a good effect during the time of their flowering.

The third, fourth, ſixth, twenty-third, twenty-fourth, thirty-fourth, thirty-ſixth, and ſome others grow in leſs compaſs, ſo may be admitted into the large borders, or in clumps of flowers in the pleaſure-garden, where they will add to the variety. The fourth ſort ſhould have a warmer ſituation, being a little tender, but all the other ſorts will grow in almoſt any ſoil or ſituation; theſe may all be propagated by ſeeds, which ſhould be ſown ſoon after they are ripe, then the plants will come up the following ſpring; but if the ſeeds are ſown in the ſpring, they will lie a year in the ground before they vegetate: when the plants come up they muſt be kept clean from weeds, and the following autumn ſhould be tranſplanted into beds at ten inches or a foot diſtance, where they may remain till they flower, which will be the ſecond ſummer after tranſplanting; but as moſt of the ſorts are ſo eaſily propagated by their roots, few people care to wait for ſeedling plants, unleſs of thoſe ſorts which are ſcarce.

[4. The Chalcedonian Iris flowers well in favourable ſituations, but ſucceeds beſt in a loamy ſoil and ſunny expoſure, with a pure air: moiſture, which favours the growth of moſt of the genus, is injurious, and ſometimes even fatal to this ſpecies. As it rarely ripens ſeeds with us, it is generally increaſed by the roots. Being liable to be deſtroyed by ſeaſons unuſually ſevere, it will be prudent to place a few roots of it in pots, either in a green-houſe or hot-bed frame during the winter: or it may be had of the importers of bulbs from Holland at a reaſonable rate. It bears forcing well[k].]

19, 30. Xiphium or Bulbous Iris and Perſian Iris are alſo propagated by offsets from the roots. The bulbs of the former need not be taken up oftener than every other year, and of the latter every third year: this ſhould be done ſoon after the leaves decay, otherwiſe they will ſend out freſh fibres: nor ſhould they be kept above a month out of the ground; becauſe they will ſhrink, and flower weakly the following year.

They may alſo be propagated by ſeed in the ſame manner as the HYACINTH: and this is the only way to obtain varieties of the Xiphium. The Perſian Iris does not vary even from ſeeds.

Theſe flowers thrive beſt in a light ſandy loam; and if it be taken from a paſture ground with the ſward, laid in a heap to rot, it will be ſtill better; for theſe bulbs do not delight in a rich dunged ſoil: nor ſhould they be too much expoſed to the ſun, but in an eaſt border, they will thrive and flower extremely well.

In propagating the Perſian Iris from ſeed, the boxes in which the ſeeds are ſown, ſhould be put under a garden frame in winter, to ſhelter them from hard froſt.

47. The Snake's-head Iris is propagated by the roots, which ſend out offsets; theſe may be taken up and tranſplanted when their leaves decay, but ſhould not be kept too long out of the ground. If theſe are planted in a deep looſe ſoil, the roots will run down, and be loſt in a few years where they are not diſturbed, ſo they ſhould be annually tranſplanted, and have a ſhallow ſoil: they are hardy in reſpect to cold, and require no farther care but to keep them clean from weeds.

They flower beſt when planted to an eaſt aſpect. If they are to be increaſed they ſhould not be removed oftener than once in three years. The diſtance which they ſhould be allowed is ſix inches ſquare, and they ſhould be planted three inches deep in the ground. As they multiply pretty faſt by the roots few perſons raiſe them from ſeeds. This however may be done in the way directed for the Bulbous Iris and Hyacinth. In light land it will be proper to lay rubbiſh in the bottom of the border where the Iris is planted, to prevent the roots from running deep into the ground; in which caſe they ſeldom produce flowers.

[The Cape Iriſes muſt be kept in the dry ſtove; and increaſed and managed in the ſame manner as other Cape bulbs.

IRIS. See *Ferraria* and *Moræa.*

IRON-WOOD. See *Fagara* and *Sideroxylon.*

IRON-WORT. See *Galeopſis* and *Sideritis.*

IRSIOLA. See *Ciſſus.*]

ISĀTIS. (Ισατις *of Dioſcorides.* Iſatis *of Pliny. Derivation unknown.*)

Lin. gen. n. 824. *Reich.* 888. *Schreb.* 1072. *Tournef.* 100. *Juſſ.* 242. *Gærtn. t.* 142.

Claſſ. 15. 1. Tetradynamia Siliculoſa.

Nat. order of *Siliquoſæ* or *Cruciformes.*—*Cruciferæ,* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* four-leaved: *leaflets* ovate, rather ſpreading; coloured, deciduous.

COR. four-petalled, croſs-ſhaped. *Petals* oblong, obtuſe, ſpreading, gradually attenuated into the claws.

STAM. *Filaments* ſix, upright-ſpreading, length of the corolla: of theſe two are ſhorter. *Anthers* oblong, lateral.

PIST. *Germ* oblong, ancipital, compreſſed, length of the ſhorter ſtamens. *Style* none. *Stigma* obtuſe, headed.

PER. *Silicle* oblong, lanceolate, obtuſe, compreſſed, ancipital, one-celled, not gaping, bivalve: *valves* navicular, compreſſed, keeled, deciduous.

SEED ſingle, ovate, within the centre of the pericarp.

ESSENTIAL CHARACTER.

Silicle lanceolate, one-celled, one-ſeeded, deciduous, bivalve: valves navicular.

SPECIES.

1. Iſatis tinctoria. *Dyer's Woad.*
Lin. ſpec. 936. *Reich.* 2. 289. *Fl. ſuec. n.* 614. *hort. cliff.* 341. *Hudſ. angl.* 299. *Wither. arr.* 717. *ed.* 3. 562. *Engl. bot. t.* 97. *Gærtn. fruct.* 2. 294. *Hall. helv. n.* 523. *Gmel. ſib.* 3. 250. *n.* 64.

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[l] Lewis.

[k] Curtis.

n. 64. *Pollich pal. n.* 645. *Allion. pedem. n.* 943. *Krock. ſileſ. n.* 1105.
I. ſylveſtris ſ. anguſtifolia. *Bauh. pin.* 113.
I. ſylv. *Fuchſ. hiſt.* 332. *Camer. epit.* 410. *Dod. pempt.* 79. 2. *Lob. ic.* 1. 352. 1. *Bauh. hiſt.* 2. 909.
Glaſtum ſylveſtre. *Ger. emac.* 491. 2.
β. I. ſativa. *Fuchſ.* 331. *Dod. pempt.* 79. 1.—ſ. latifolia. *Bauh. pin.* 113. *Blackw. t.* 246. *Zorn. ic.* 191. *Sabb. hort.* 4. *t.* 5. *Mor. hiſt. ſ.* 3. *t.* 15. *f.* 10.
I. ſ. Glaſtum ſativum. *Bauh. hiſt.* 2. 909. 2. *Ger. emac.* 491. 1. *Park. theat.* 600. 1. *Raii hiſt.* 842. *ſyn.* 307. *Petiv. brit. t.* 48. *f.* 9. *Lob. ic.* 351. 2.
Root-leaves crenate, ſtem-leaves ſagittate, ſilicles obcordate.

2. Iſatis luſitanica. *Portugal Woad.*
Lin. ſpec. 936. *Reich.* 2. 289. *Gmel. it.* 3. 308. *Herm. lugdb.* 678. *Tournef. cor.* 14. *Buxb. cent.* 1. 4. *t.* 5.
Root-leaves crenate, ſtem-leaves ſagittate, ſilicles ſubtomentoſe.

[3. Iſatis armena. *Armenian Woad.*
Lin. ſpec. 936. *Reich.* 2. 289. *Tournef. cor.* 14. *Buxb. cent.* 1. 3. *t.* 4.
Leaves quite entire cordate blunt behind, ſilicles cordate.]

4. Iſatis ægyptiaca. *Egyptian Woad.*
Lin. ſpec. 937. *Reich.* 2. 290.
All the leaves toothed.

[5. Iſatis alpina. *Alpine Woad.*
Allion. pedem. n. 944. *t.* 86. *f.* 2.
Leaves lanceolate half embracing cordate, ſilicles ovate.

DESCRIPTIONS, &c.

1. Our common Woad is a biennial plant, with a fuſiform, fibroſe root. Stem upright, round, ſmooth, woody at bottom, branched at top. Root-leaves ovate-lanceolate, on long footſtalks, down which they run a little. Stem-leaves alternate, quite entire, embracing, ſmooth, from two to three inches long, and ſcarcely half an inch in breadth. Theſe are ſometimes very ſlightly toothletted: and a few hairs are ſometimes found both on the ſtem and leaves. Flowers ſmall, terminating the ſtem and branches in a cloſe raceme. Both corolla and calyx yellow: petals notched at the end. Seed-veſſels on ſlender peduncles, hanging down, cheſtnut-coloured or dark brown and ſhining when ripe, of an oblong elliptic form, near half an inch long and two lines wide, compreſſed at top and on the ſides into a ſharp edge, ſwelling like a convex lens in the middle, with a ſtraight longitudinal ſuture on each ſide, one-celled, two-valved, but hardly opening ſpontaneouſly: valves of ſpongy ſubſtance like cork, and boat-ſhaped. Seed ſmooth, ſtriated a little, two lines long, and three quarters of a line wide, yellow or browniſh yellow when ripe: it has only a ſingle membranaceous coat. Embryo curved, yellowiſh. Cotyledons ovate, fleſhy, plano-convex. Radicle ſubcylindrical, bent in upwards, lying on the back, not on the cleft of the cotyledons, ſuperior[a].

Gærtner remarks, that the ſituation of the radicle in the *ſiliculoſæ* is various: being centrifugal in all thoſe which contain ſeveral ſeeds; generally ſuperior in one-ſeeded ſilicles; ſeldom centripetal; and in Cakile alone inferior.]

Mr. Miller thus deſcribes the cultivated plant, which however differs little from the wild one except in luxuriance. The lower leaves are of an oblong oval figure, and pretty thick conſiſtence, when growing in a proper ſoil; they are narrow at their baſe, but broad above, and end in obtuſe roundiſh points; are entire on their edges, and of a lucid green. The ſtalks riſe near four feet high, dividing into ſeveral branches, with arrow-ſhaped leaves, ſitting cloſe: the ends of the branches are terminated by ſmall yellow flowers, in very cloſe cluſters. The pods are ſhaped like a bird's tongue, half an inch long, and one-eighth of an inch broad, turning black when ripe. It flowers in july, and the ſeeds ripen the beginning of ſeptember.

Mr. Miller has another ſpecies, which he names *I. dalmatica* or Dalmatian Woad, from the place of its growth. The lower leaves of this are ſpear-ſhaped and crenated; thoſe on the ſtalk very narrow and arrow-pointed. The ſtalks branch more than thoſe of the firſt ſort, and riſe higher. The flowers are larger, and of a brighter yellow colour. The ſeed-veſſels are ſhorter, and broader at the ends, which are indented. [It is probably a variety of the common Woad, but no ſpecimen of it occurring in Mr. Miller's herbarium, we cannot ſpeak of it with certainty.

Dyer's Woad is a native of ſeveral parts of Europe, as on the coaſt of the Baltic and Ocean, by way-ſides in Switzerland, &c.[b] In England, in corn-fields and on the borders of them, as at New Barns near Ely, by the river Wear near Durham, &c. This makes us ſuſpect that Woad is not an aboriginal with us, but has been naturaliſed by its frequent culture for dying; for, according to Linneus at leaſt, it is a maritime plant. Yet if the plant which Pliny informs us the ancient Britains painted their bodies with be ours, which is very probable, it muſt be a native[c].

Woad is much uſed by dyers for its blue colour, and it is the baſis of black and many other colours.

Queen Eliſabeth, as Hume words it, took offence at the ſmell of this herb, and iſſued an edict prohibiting any one to cultivate it[d].

According to Hakluyt, we were dependent upon France for it in 1576[e]. But in 1582 he ſays, "thus "was Woad brought in, and came to good perfec"tion, to the great loſs of the French, our old ene"mies[f]."

2. According to Linneus this is ſcarcely different from the preceding, only it is annual and ſmaller. Gmelin ſays the flowers are white.] Mr. Miller affirms, that there are very eſſential differences between them; particularly in the ſhape of the under leaves, which in this are narrow and ſpear-ſhaped, and thoſe on the ſtalks are not more than half the breadth of thoſe on the cultivated Woad. The ſtalks do not branch ſo much, and the pods are narrower, nor do the roots abide ſo long, for they generally die within the year. [Native of Portugal and the Levant. Cultivated by Mr. Miller in 1739[g].

3. Stem a foot high, loaded with yellow flowers.—Native of Armenia in dry paſtures, by the ſides of brooks[h].]

4. An annual plant, and a native of Egypt.

[5. Stem half a yard high, dividing into two, three or four ſhort branches, ſupported by ſhort leaves. Flowers in a ſort of umbel, in ſhort racemes, yellow, on yellow filiform peduncles. The calyx is alſo yellow. Corolla ſpreading very much, with the petals twice as long as the calyx, oblong-cordate, with linear claws. Filaments and anthers yellow; the latter ſagittate. The flowers have hardly any ſmell. Silicle not wedge-ſhaped, but ovate and larger than that of I. tinctoria, from which it differs in having a perennial root, in the height of the whole plant, in the flowers being much larger, the ſilicles ſhort, ovate, and alſo much larger.

Native of the mountains of Piedmont[i].]

PROPAGATION AND CULTURE.

None of the ſorts are cultivated for uſe except the firſt, but are preſerved only in botanic gardens. The ſecond and fifth ſorts are propagated by ſeeds ſown in autumn, and when the plants come up they muſt be thinned, leaving them ſix inches apart, and kept clean from weeds: the ſummer following they will flower and produce ripe ſeeds, after which they ſoon decay.

3, 4. Theſe are too tender to thrive in the open air in England. Sow the ſeeds on a hot-bed in the ſpring, and when the plants are fit to remove, tranſplant them on a freſh hot-bed; as ſoon as they have taken new root give them a large ſhare of freſh air, to prevent their being drawn up weak. In this bed they may remain five or ſix weeks, by which time they will be fit to tranſplant into pots, which ſhould be plunged into a moderate hot-bed, giving the plants plenty of air when the weather will permit, and ſupporting their ſtalks, which will otherwiſe trail on the ground: with this management the plants will flower in june, and ripen their ſeeds in ſeptember.

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[a] Pollich, Gærtner, Engl. bot. Withering.

[b] Linn.
[c] Engl. bot.
[d] Hiſt. ch. 44. ſee alſo Stow's annals.
[e] Voy. 2, 46.
[f] Voy. 2. 161. edit. 1599.
[g] Hort. kew.
[h] Buxbaum.
[i] Allioni.

1. The firſt ſort which is propagated for uſe, is ſown upon freſh land which is in good heart, for which the cultivators of Woad pay a large rent; they generally chuſe to have their land ſituated near great towns, where there is plenty of dreſſing, but they never ſtay long on the ſame ſpot, for the beſt ground will not admit of being ſown with Woad more than twice; for if it is oftener repeated, the crop ſeldom pays the charges of culture, &c.

Thoſe who cultivate this commodity, have gangs of people who have been bred to this employment, ſo that whole families travel about from place to place, wherever their principal fixes on land for the purpoſe; but theſe people go on in one track, juſt as their predeceſſors taught them; nor have their principals deviated much from the practice of their anceſtors, ſo that there is a large field for improvement, if any of the cultivators of Woad were perſons of genius, and could be prevailed on to introduce the garden culture ſo far as it may be adapted to this plant; this I know from experience, having made numbers of trials in the culture of this plant, therefore I ſhall inſert them here for the benefit of thoſe who may have ingenuity enough to ſtrike out of the old beaten track.

As the goodneſs of Woad conſiſts in the ſize and fatneſs of the leaves, the only method to obtain this, is to ſow the ſeed upon ground at a proper ſeaſon, and allow the plants proper room to grow, as alſo to keep them clean from weeds; which, if permitted to grow, will rob the plants of their nouriſhment. The method practiſed by ſome of the moſt ſkilful kitchen-gardeners in the culture of Spinach, would be a great improvement to this plant, for ſome of them have improved the round-leaved Spinach ſo much by culture, as to have the leaves more than ſix times the ſize they were formerly; and their fatneſs has been in the ſame proportion, upon the ſame land, which has been effected by thinning the plants when young, and keeping the ground conſtantly clean from weeds; but to return to the culture of Woad.

After having made choice of a proper ſpot of land, which ſhould not be too light and ſandy, nor over ſtiff and moiſt, but rather a gentle hazel loam, whoſe parts will eaſily ſeparate: the next is to plough this up juſt before winter, laying it in narrow high ridges, that the froſt may penetrate through the ridges, to mellow and ſoften the clods; then in the ſpring plough it again croſſways, laying it again in narrow ridges; after it has lain ſome time in this manner, and the weeds begin to grow, it ſhould be well harrowed to deſtroy them; this ſhould be twice repeated while the weeds are young, and if there are any roots of large perennial weeds, they muſt be harrowed out, and carried off the ground. In june the ground ſhould be a third time ploughed, when the furrows ſhould be narrow, and the ground ſtirred as deep as the plough will go, that the parts may be as well ſeparated as poſſible; and when the weeds appear again, the ground ſhould be well harrowed to deſtroy them. Towards the end of july, or the beginning of auguſt, it ſhould be ploughed the laſt time, when the land ſhould be laid ſmooth, and when there is a proſpect of ſhowers, the ground muſt be harrowed to receive the ſeeds, which ſhould be ſown either in rows with the drill plough, or in broad-caſt, after the common method; but it will be proper to ſteep the ſeeds one night in water before they are ſown, which will prepare them for vegetation: if the ſeeds are ſown in drills with a plough, they will be covered by an inſtrument fixed to the plough for that purpoſe; but thoſe which are ſown broad-caſt in the common way, muſt be well harrowed in. If the ſeeds are good, and the ſeaſon favourable, the plants will appear in a fortnight, and in a month or five weeks after will be fit to hoe; the ſooner this is performed when the plants are diſtinguiſhable, the better they will thrive, and the weeds being then young, will be ſoon deſtroyed. The method of hoeing theſe plants is the ſame as for Turneps, with this difference only, that theſe plants need not be thinned ſo much; for at the firſt hoeing, if they are ſeparated to the diſtance of three or four inches, and at the laſt to ſix inches, it will be ſpace enough for the growth of the plants; if this is carefully performed, and in dry weather, moſt of the weeds will be deſtroyed: but as ſome of them may eſcape in this operation, and young weeds will ariſe, the ground ſhould be a ſecond time hoed in october, always chuſing a dry time for this work; at this ſecond operation, the plants ſhould be ſingled out to the diſtance they are to remain. After this the ground will be clean from weeds till the ſpring, when young weeds will come up, therefore about a fortnight in april will be a good time to hoe the ground again, when the weeds will be young, and it may be performed in leſs than half the time it would require if the weeds were permitted to grow large, and the ſun and wind will much ſooner kill them; this hoeing will alſo ſtir the ſurface of the ground, and greatly promote the growth of the plants; if it is performed in dry weather, the ground will be clean till the firſt crop of Woad is gathered, after which it muſt be again well cleaned; if this is carefully repeated, after the gathering of each crop, the land will always lie clean, and the plants will thrive the better. The expence of the firſt hoeing will be about ſix ſhillings per acre; and for the after-hoeings half that price will be ſufficient, provided they are performed when the weeds are young; for if they are ſuffered to grow large, it will require more labour, nor can it be ſo well performed; therefore it is not only the beſt huſbandry to do this work ſoon, but it will be found the cheapeſt method; for the ſame number of men will hoe a field of ten acres three times, when it is performed while the weeds are young, as is required to hoe it twice only, becauſe the weeds have longer time to grow between the operations.

If the land in which the ſeed is ſown, ſhould have been in culture before for other crops, ſo not in good heart, it will require dreſſing before it is ſown, in which caſe rotten ſtable dung is preferable to any other; but this ſhould not be laid on till the laſt ploughing before the ſeeds are ſown, and not ſpread but as the land is ploughed, that the ſun may not exhale the goodneſs of it, which in ſummer is ſoon loſt, when ſpread on the ground. The quantity ſhould not be leſs than twenty loads to each acre, which will keep the ground in heart till the crop of Woad is ſpent.

The time for gathering the crop is according to the ſeaſon, but it ſhould be performed as ſoon as the leaves are fully grown, while they are perfectly green; for when they begin to change pale, great part of their goodneſs is over; for the quantity will be leſs, and the quality greatly diminiſhed.

If the land is good, and the crop well huſbanded, it will produce three or four gatherings, but the two firſt are the beſt; theſe are commonly mixed together in the manufacturing of it, but the after-crops are always kept ſeparate; for if theſe are mixed with the other, the whole will be of little value. The two firſt crops will ſell from twenty-five to thirty pounds a ton; but the latter will not bring more than ſeven or eight pounds, and ſometimes not ſo much. An acre of land will produce a ton of Woad, and in good ſeaſons near a ton and a half.

When the planters intend to ſave the ſeeds, they cut three crops of the leaves, and then let the plants ſtand till the next year for ſeed; but if only one crop is cut, and that only of the outer leaves, letting all the middle leaves ſtand to nouriſh the ſtalks, the plants will grow ſtronger, and produce a much greater quantity of ſeeds.

Theſe ſeeds are often kept two years, but it is always beſt to ſow new ſeeds when they can be obtained. The ſeeds ripen in auguſt; when the pods turn to a dark colour, the ſeeds ſhould be gathered; it is beſt done by reaping the ſtalks in the ſame manner as Wheat, ſpreading the ſtalks in rows upon the ground, and in four or five days the ſeeds will be fit to threſh out, provided the weather is dry; for if it lies long, the pods will open and let out the ſeeds.

There are ſome of the Woad planters who feed down the leaves in winter with ſheep, which is a very bad method; for all plants which are to remain for a future crop, ſhould never be eaten by cattle, for that greatly weakens the plants.

[Isatis indica. See *Indigofera tinctoria.*

ISCHÆMUM. (*From* Ισχω *reprimo, and* αιμα *ſanguis, on account of its virtue in ſtopping hæmorrhages.*)

Lin. gen. n. 1148. *Reich.* 1254. *Schreb.* 1569. *Juſſ.* 30.

Claſſ. 23. 1. Polygamia Monoecia.

Nat. order of *Gramina*, *Gramineæ* (Juſſ.) or *Graſſes*.

GENERIC CHARACTER.

Cal. *Glume* two-flowered, bivalve, cartilaginous, placed tranſverſely: *Valves* nearly equal: the *exterior* ſub-ovate, gibboſe, with bifid tip, ſharp, the upper part of the back flat in the middle, ſtriated, emarginated; the *interior* oblong, acuminate or awned at the tip, the back beneath the tip increaſed by a longitudinal membrane.

Floſcule exterior male, interior hermaphrodite; each leſs than calyx.

Cor. In the hermaphrodite a bivalve *glume*; *valves* membranaceous, thin, colourleſs; the *exterior* bellied, either mutic or awned, bifid to the very awn, acute: *awn* long, ſlender, jointed, tortile beneath; the interior lanceolate, acute, conduplicate at the edges.

In the male a bivalve *glume*, rather firmer, diaphanous, rather coloured; the *exterior* oblong, bellied, contracted above, ſharp, mutic; the *interior* oblong, obtuſe, with concave back, acutely margined, margin thinner.

Nectary in each two-leaved: *leaflets* ſmall, ſpatulate, truncate-emarginate.

Stam. *Filaments* three, capillary, ſhort. *Anthers* oblong, bifid on both ſides.

Pist. In the hermaphrodite, *Germ* oblong. *Styles* two, capillary, erect, ſhorter than the corolla. *Stigmas* oblong, plumoſe, ſpreading, exſerted.

Per. none. Calyx and corolla unchanged.

Seed (in the hermaphrodite) ſingle, oblong, linear, convex on one ſide.

Obs. *The flowers are ſpicated, and grow double: the one ſubſeſſile, the other ſeated on a broad glumaceous foot-ſtalk; each hermaphrodite.* S.

ESSENTIAL CHARACTER.

Herm. *Cal.* Glume two-flowered. *Cor.* two-valved. *Stam.* three. *Styles* three. *Seed* one.

Male. *Cal.* and *Cor.* as in the other. *Stam.* three.

SPECIES.

1. Iſchæmum muticum.
Lin. ſpec. 1487. *Reich.* 4. 312. *Retz. obſ.* 6. 34. *n.* 75.
Tagadi. *Rheed. mal.* 12. 91. *t.* 49.
Leaves lanceolate, flowers awnleſs.

2. Iſchæmum ariſtatum.
Lin. ſpec. 1487. *Reich.* 4. 312.
I. ciliare. *Retz. obſ.* 6. 36. *n.* 78.
Leaves lanceolate, calyxes two-flowered, pedicels ciliate, each female flower with a twiſted knee-jointed awn.

3. Iſchæmum imberbe.
Retz. obſ. 6. 35. *n.* 76.
Leaves lanceolate, florets naked, outer valve of the ſeſſile calyx having two knobs on each ſide, and the corolla elongated by a twiſted awn.

4. Iſchæmum barbatum.
Retz. obſ. 6. 35. *n.* 77.
Leaves lanceolate, calyxes two-flowered, bearded at the baſe, and ciliate at the edge, the edge of the ſeſſile one with two knobs on each ſide, awn twiſted, knee-jointed.

5. Iſchæmum murinum.
Forſt. fl. auſtral. n. 384. *nov. act. upſ.* 3. 185.
Spike two-parted, calyx and ſeeds awned.

6. Iſchæmum involutum.
Forſt. fl. auſtral. n. 385.
Spike directed one way, awnleſs, four-flowered, involved in a leafy concave receptacle.

7. Iſchæmum importunum.
Lour. cochinch. 646.
Panicle contracted, corollas one-valved.

8. Iſchæmum rugoſum.
Saliſb. ic. t. 1.
Outer barren glumes tranſverſely wrinkled, male and female florets fertile one only awned.

DESCRIPTIONS, &c.

1. Spike two-parted, imbricated, with alternate, ſimple, two-flowered, angular peduncles, preſſed cloſe to the culm. One flower terminates each peduncle; which is hermaphrodite, from a two-glumed one-flowered calyx: the ſecond or lower flower is androgynous, ſeſſile and inſerted into each peduncle at the outer baſe, from a two-valved hardiſh calyx, the length of the florets, of which it contains two, one male, the other female. Stigmas thick, bearded. Peduncle of the ſpike cloathed with leaves [a].

Culms a foot or eighteen inches high, leafy to the very ſpike, frequently branched to the baſe. Leaves two inches long, ciliate-ſpinuloſe on the edges. Spikes two, terminating, joined ſo as to appear one, or one divided to the baſe. Calyxes in pairs, cartilaginous; one ſeſſile, two-flowered, androgynous; the other peduncled, male or neuter, one-flowered. The outer glume of the firſt ovate, flattiſh, ſpread out at the edge, bifid at the tip, the inner edge bent in: the inner glume equal in ſize, mucronate at the tip, the edge of one ſide only bent in. Outer corolla male, with one edge of the outer valve bent in, the other flat; but the inner valve has both edges bent in: inner corolla female, with the outer valve awnleſs; the inner ending in a ſhort awn-ſhaped dagger-point, with both edges bent in. Stigmas two, thick, feathered, yellow; all the corolline glumes hyaline.—The ſecond flower lateral, neuter or ſometimes male, on a three-ſided pedicel. Calycine valves three-ſided and compreſſed. One glume of the corolla ſhortly awned [b].

Native of the Eaſt Indies, and of the iſle of Tanna.

2. The ſtructure of the ſpike and of the flowers is entirely the ſame as in the preceding, but the culm is higher, the ſpike longer, and the peduncle naked. The ſeeds are armed with a twiſted awn, longer than the florets [c].

It is thus deſcribed by Retzius, under the name of *I. ciliare.*—Culm a foot and half high, branched, decumbent and rooting, with hairy joints. Leaves ſhort, with the ſheaths hairy at the edge. Peduncle naked. Spikes in pairs, an inch and half long, narrow, awned. Calyxes in pairs, two-flowered: one flower ſeſſile; the outer glume cartilaginous, ovate, ſwelling, ſtriated, both edges bent in; inner lanceolate, keeled; outer flower male, awnleſs, inner female awned, the awn having a long twiſted knee-joint: the other flower peduncled, the peduncle three-ſided, ciliated at the corners and on the upper edge; both glumes cartilaginous, keeled, ſharp; one flower male, awnleſs, the other female and awned; the awn in both female flowers iſſues from the back of the corolla, which is cloven to the very baſe of the awn.

Native of China, where it was found by Oſbeck [d].

3. Culms two feet high, leafy, ſomewhat branched. Leaves like thoſe of the firſt ſort, but longer. Spike alſo like that, but awned and without hairs. Calyxes in pairs; one ſeſſile, two-flowered, the other peduncled, one-flowered, neuter. In the firſt, the outer valve is cartilaginous, flattiſh, lanceolate, with two knobs on each ſide, and both edges bent in; the inner membranaceous, acute, one edge ſpread out flat, the other bent in; outer corolla neuter? awnleſs, inner hermaphrodite, with an elongated twiſted awn without any joint. In the ſecond floret the outer valve is cartilaginous, lanceolate, with one edge bent in, the other flat; inner equal in length, acute, membranaceous, with both edges bent in; corolline glumes hyaline rufeſcent [e].

Native of the Eaſt Indies.

4. Culm and leaves as in the preceding, only the latter ſhorter. Spike longer, two-parted, awned, with the teeth of the rachis ciliate-bearded. Calyxes in pairs, each androgynous and two-flowered: one floret ſeſſile, the outer valve cartilaginous, bearded at the baſe, having two or three little knobs on each ſide, lanceolate, bent in on both ſides; the inner valve keeled, ſharp, ciliated along both edges; florets two, the outer male, the inner female and awned, awn bent

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[a] Linn. ſpec. [b] Retzius. [c] Linn. ſpec. [d] Ibid. [e] Retzius.

as if broken, brown at the baſe, the reſt white; glumes of the corolla hyaline, white, acute: the other floret peduncled; outer valve half-ovate, cartilaginous, naked, inner lanceolate, acute; flowers two, outer male, inner female or neuter, both awnleſs, glumes of the corolla as in the others.' Native of Java, where it was found by Wernnerberg[f].

5. Culmis filiform, ſlender, ſimple, a long ſpan in height. Leaves linear, acuminate, flattiſh, ſtriated, dry, a ſpan long. Sheaths thin, lax, with the little membrane very ſhort, and having hairs placed on it. Peduncle filiform, upright, frequently naked. Spike cloſely converging, cylindrical, two inches long, reſembling that of Hordeum murinum. Florets on one ſide, diſtich, in pairs, one ſeſſile, the other pedicelled, minute, being ſcarcely a line in length beſides the awns. Valves of the calyx almoſt equal; outer oblong-lanceolate, ſtriated, flattiſh, one edge bent in and keeled, embracing the inner valve, having two awns at the tip, or ſolitary, terminated by little granules: inner valve more ſlender, with a longer awn: baſe of the glumes hairy. Valves of the corolla awnleſs, oblong, hyaline, leſs than thoſe of the calyx. A minute membrane inveſts the germ, having a flexuoſe awn four times as long as the floret, which may be conſidered as the nectary.

Native of the iſle of Tanna, on dry ſand, near the coaſt[g].

6. Native of the Society iſles, and elſewhere between the Tropics[h]. Found in the iſland of Otaheite may 13th, 1774[i].

7. Root perennial, ſimple, long, jointed, white, very tough. Culm three feet high, almoſt upright, round, hollow, thickiſh. Leaves awl-ſhaped, ſhort. Flowers ovate, ſmooth, awnleſs, ſmall. Calycine glume two-valved, two-flowered, one flower hermaphrodite, the other male. Corolla one-valved, embracing each flower. Seed awnleſs.

Native of Cochinchina, where it is a common weed, not eaſily eradicated[k].

8. Root annual. Plant from ſeven inches to a foot in height. Stems pale green, ſlender, decumbent, bent back, branched dichotomouſly, round, little jointed, ſmooth, ſtriated, ſomewhat rigid. Leaves pale green, denſe, except one or two of the upper ones, which are more remote. Spike terminating, denſe, two-parted. Some of the flowers at the baſe of each flexure of the peduncle are fertile, others at the ends of the branchlets are abortive. Glumes ſix, upright: two oppoſite, equitant, barren; and four within theſe, much leſs, and fertile: in the abortive flowers they are ſmaller.

Native of the Eaſt Indies, and found by Koenig in Oriſſa, on the borders of the Rice-fields[l].

Cultivated by Richard Antony Saliſbury, Eſq. at Chapel-Allerton, before 1791.

Ischæmum. See *Andropogon* & *Panicum*.

ISERTIA. (*From M. Iſert, a German, in the Daniſh ſervice, as a Surgeon, on the coaſt of Guinea.*)

Lin. gen. Schreb. n. 602. Guettardæ ſpecies, *Aubl.* 123.

Claſſ. 6. 1. Hexandria Monogynia.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, ſuperior, coloured, four or ſix-toothed, permanent.

Cor. one-petalled, funnel-form; *tube* long, cylindric, ſlightly curved. *Border* ſix-cleft: *diviſions* ſubovate, rather upright, villoſe.

Stam. *Filaments* ſix, very ſhort, within the mouth of the corolla. *Anthers* linear, faſtened by the back, upright.

Pist. *Germ* inferior, roundiſh. *Style* filiform, ſurrounded at the baſe by a glandule. *Stigma* ſix-cleft.

Per. *Pome* ſubgloboſe, crowned with the calyx, ſucculent, ſix-celled; the ſhell of the cells fragile.

Seeds ſeveral, ſmall, angular, rough.

ESSENTIAL CHARACTER.

Cal. coloured, four or ſix-toothed. *Cor.* ſix-cleft, funnel-form. *Pome* ſubglobular, ſix-celled, many-ſeeded.

SPECIES.

Iſertia coccinea.

Lin. ſyſt. ed. Gmel. 567.

Guettarda coccinea. *Aubl. guian.* 317. *t.* 123.

DESCRIPTION, *&c.*

This is a tree with a trunk ten or twelve feet in height, and about eight inches in diameter; the bark wrinkled, and of a ruſſet colour, the wood light, and of a looſe texture. Branches quadrangular, ſtraight, with oppoſite branchlets, channelled and covered with a ruſſet down; at their origin are two embracing ſtipules. Leaves oppoſite, diſpoſed croſſwiſe, ſmooth, entire, oval, ending in a long point, aſh-coloured underneath, with ruſſet-coloured nerves; the largeſt fourteen inches long, and ſeven wide: petiole cylindric, channelled, two inches long, ſwelling at the baſe, with two wide, ſharp, deciduous ſtipules. Flowers terminating, in a large, ſtraight panicle, the branches of which are oppoſite and ſubdivided, and come out from between two little ſcales. Each branchlet has three flowers, of which that in the middle is ſeſſile. Calyx purpliſh, that part which borders the germ yellow. Tube of the corolla two inches long, bright red. Border yellow, covered on the inſide with hairs of the ſame colour. Fruit a ſucculent red berry (or pome), the ſize of a Cherry, ſweet and good to eat.

The wood is bitter. A decoction of the leaves is uſed by the Creoles in fomentations.

It is common in the iſland of Cayenne, and on the Continent of Guiana, flowering and bearing fruit great part of the year[a].

ISNARDIA. (*So named by Linneus, in memory of Monſ. Antoine Danti d'Iſnard, member of the Academy of Sciences, and who publiſhed deſcriptions of ſome plants in their memoirs for* 1716, &c.)

Lin. gen. n. 156. *Reich.* 164. *Schreb.* 207. *Juſſ.* 333. Dantia. *Petit. gen.* 49.

Claſſ. 4. 1. Tetrandria Monogynia.

Nat. order of *Calycanthemæ.—Salicariæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* bell-ſhaped, half-four-cleft, *diviſions* ovate, ſpreading.

Cor. none, unleſs you call the calyx ſuch.

Stam. *Filaments* four, growing from the middle of the calyx. *Anthers* ſimple.

Pist. *Germ* inferior. *Style* ſimple, longer than the ſtamens. *Stigma* thickiſh.

Per. *Capſule* four-cornered, obtuſe, covered by the calyx and crowned, four-celled, four-valved; *valves* obſcurely keeled, thick, fungous, attenuated on the margin. *Partitions* oppoſite to the valves.

Seeds very many, oblong, ſharp, affixed to the pillar.

ESSENTIAL CHARACTER.

Cal. four-cleft. *Cor.* none. *Capſ.* four-celled, covered by the calyx.

SPECIES.

1. Iſnardia paluſtris.

Lin. ſpec. 175. *ſyſt.* 162. *Reich.* 1. 340. *Dalib. par.* 53. *Gmel. it.* 2. 199. *Villars dauph.* 2. 312. *Allion. pedem. n.* 2066.

Dantia paluſtris. *Petit. gen. t.* 49. *Guett. ſtamp.* 2. 115.

Ocymophyllum. *Buxb. act. petrop.* 4. 277. *t.* 27.

Glaux major paluſtris, flore herbaceo. *Moriſ. præl.* 268. *Raii hiſt.* 1102. *ſuppl.* 635. *Bocc. muſ.* 105. *t.* 84. *f.* 2.

Alſine paluſtris rotundifolia repens, foliis portulacæ pinguibus. *Lind. alſat.* 114. *t.* 2. *f.* 6.

DESCRIPTION, *&c.*

This bears a great reſemblance to Peplis Portulaca. It is creeping and floating. The flowers are axillary, oppoſite, ſeſſile and green[b].

It is a native of Italy, France, Alſace, Ruſſia, Jamaica and Virginia, in rivers, and is annual[c]. According to to Allioni it is perennial.

Swartz has determined it to be a ſpecies of *Ludwigia*, frequent in the rivers of Jamaica, with petals to the flower, though fugacious. The plant without petals differs from this, juſt as in Ammannia.

Isnardia. See *Ammannia*.

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[f] Retzius.

[g] Forſter in act. upſ.

[h] Forſt. auſtral.

[i] Banks Mſs.

[k] Loureiro.

[l] Saliſb. ic.

[a] Aublet.

[b] Linn. ſyſt.

[c] Linn. ſpec.

ISOËTES. (*From ισος ſimilis, and ετος annus: being alike or evergreen all the year. The name is taken from Pliny.*)

Lin. gen. n. 1184. *Reich. n.* 1301. *Schreb. n.* 1620. *it. ſcan.* 420. *Juſſ.* 17.

Calamaria. *Dill. muſc.* 541. *t.* 80.

Claſſ. 24. 1. Cryptogamia Filices—or Miſcellaneæ.

Nat. order of *Filices* or *Ferns.*

GENERIC CHARACTER.

* *Male* flowers ſolitary within the baſe of the inner leaves.

Cal. *Scale* cordate, acute, ſeſſile.

Cor. none.

Stam. *Filament* none. *Anther* roundiſh, one-celled.

* *Female* flowers ſolitary, within the baſe of the outer leaves of the ſame plant.

Cal. as in the Males.

Cor. none.

Pist. *Germ* ovate, within the leaf.

Per. *Capſule* ſubovate, two-celled, concealed within the baſe of the leaf.

Seeds numerous, globular.

Obs. *Fructification immerſed in the dilated baſe of the leaves, on the outſide like a capſule with a ſtreak reſembling a ſuture, but without any partition on the inſide; filled with many granular ſeeds.*

ESSENTIAL CHARACTER.

Male. *Anther* within the baſe of the frond.

Fem. *Capſule* two-celled, within the baſe of the frond.

SPECIES.

1. Iſoetes lacuſtris. *Common Quillwort.*
Lin. ſpec. 1563. *ſyſt.* 942. *Reich.* 4. 439. *ſuppl.* 448. *it. ſcan.* 417. *t.* 419. *fl. ſuec. n.* 951. *Hudſ. angl.* 462. *Wither. arr.* 3. 67. *ed.* 3. 760. *Bolton fil. brit.* 74. *t.* 41. *Lightf. ſcot.* 683. *Fl. dan. t.* 191.
Calamaria folio longiore & graciliore. *Dill. muſc.* 541. *t.* 80. *f.* 2.
Subularia vulgaris erecta, fol. rigidiſſimo. *Raii ſyn.* 306. *ed.* 1. 2. at *p.* 1. fig.
Leaves awl-ſhaped, ſemicylindrical, curved back.

2. Iſoetes coromandeliana. *Coromandel Quillwort.*
Lin. ſyſt. 942. *ſuppl.* 447.
Leaves filiform, erect, ſmooth.

DESCRIPTIONS, *&c.*

1. Root fibrous; fibres numerous, ſimple, ſlender, ſtriking deep into the mud. Leaves in thick tufts (eight or ten), from three or four to ſix or ſeven inches in length, extremely like young ruſhes, convex on the back, flat or ſlightly convex in front, at the baſe ſwelling into a kind of bulb, covered by a thin tender ſkin, which burſts and diſcovers itſelf to be filled with numerous minute whitiſh ſeeds, that appear ſpherical when examined in the microſcope, roughiſh, ſomewhat tranſparent, and having three ribs meeting in a centre [a]. The leaves are ſo brittle, that they break on the leaſt attempt to bend them [b]. Each leaf conſiſts of ſeveral ſlender tubes, imbedded in a ſoft ſpongy ſubſtance, and furniſhed with tranſverſe diaphragms that are very viſible. When newly taken out of the water it is pellucid. The edges of the inflated baſe of the outer leaves, where the female flowers reſide, form a thin fine membrane, which ſo cloſely embraces the gibbous part of the inner leaf, where the male flower is found, as to exclude the water. And by this admirable contrivance, the flowers of each ſex are not only near each other, but though at the bottom of a lake, are kept perfectly dry. After the diſcharge of the ſeeds the outer leaves fall off and periſh, and the next in order perform the ſame office a ſucceeding year; and the number of leaves is kept up by a ſupply of young ones from the centre [c].

Native of mountain lakes, in the north of Europe. Weſtmoreland. Cumberland. Wales and Scotland. Flowering from may to ſeptember.

2. This reſembles the preceding very much, but is larger. The bulb conſiſts of the membranaceous dilated baſes of the petioles. The leaves are near a foot long, filiform, not ſemicylindric.

Native of Coromandel, in wet places that are inundated in the rainy ſeaſon. *Koenig* [d].

Isophyllum. See *Bupleurum.*]

ISOPYRUM. (*From* ισος *like, and* πυρος *a grain of wheat.*—Ισοπυρον *of Dioſcorides.*)

Lin. gen. n. 701. *Reich. n.* 759. *Schreb. n.* 955. *Gærtn. t.* 65. *Juſſ.* 233.

Claſſ. 13. 7. Polyandria Polygynia.

Nat. order of *Multiſiliquæ.—Ranunculaceæ,* Juſſ.

GENERIC CHARACTER.

Cal. none.

Cor. *Petals* five, ovate, equal, ſpreading, deciduous.
Nectaries five, equal, tubular, very ſhort, with a three-lobed mouth, the outer lobe larger, the receptacle inſerted within the petals.

Stam. *Filaments* numerous, capillary, ſhorter than the corolla. *Anthers* ſimple.

Pist. *Germs* very many, ovate. *Styles* ſimple, the length of the germ. *Stigmas* blunt, the length of the ſtamens.

Per. *Capſules* ſeveral, lunulate, recurved, one-celled.

Seeds very many.

Obs. *Allied very nearly to* Helleborus, *but extremely different in habit.* I. thalictroides *has two or three germs only.* R.

ESSENTIAL CHARACTER.

Cal. none. *Pet.* five. *Nect.* trifid, tubular. *Capſ.* recurved, many-ſeeded.

SPECIES.

1. Iſopyrum fumarioides. *Fumitory-leaved Iſopyrum.*
Lin. ſpec. 783. *ſyſt.* 518. *Reich.* 2. 670. *hort. upſ.* 157. *Gmel. ſib.* 4. 191. *Willich. obſ. n.* 44. *Kniph. cent.* 12. *n.* 65. *Gærtn. fruct.* 1. 312. *Amm. ruth.* 74. *t.* 12. (Helleborus).
Stipules awl-ſhaped, petals acute.

2. Iſopyrum thalictroides. *Meadow-rue-leaved Iſopyrum.*
Lin. ſpec. 783. *ſyſt.* 518. *Reich.* 2. 670. *mant.* 408. *Scop. carn. n.* 695. *Jacqu. auſtr.* 2. *t.* 105. *Krock. ſileſ. n.* 890. *t.* 22. *Villars dauph.* 3. 715.
Thalictrum batrachoides flore albo italicum. *Bocc. muſ.* 84. *t.* 79. *f.* 1.
Ranunculus nemoroſus thalictri folio. *Bauh. pin.* 178. *Camer. hort.* 137. *Raii hiſt.* 584. *Mor. hiſt.* 2. 437. *ſ.* 4. *t.* 28. *f.* 12.
R. præcox 2, thalietri folio. *Cluſ. hiſt.* 1. 233.
R. thalietri folio. *Bauh. hiſt.* 3. 862.
R. thalictri fol. major. *Park. parad.* 217. 6.
R. præc. thal. fol. *Ger. emac.* 965. 6.
Aquilegia minor. *Dalech. hiſt.* 821.
Stipules ovate, petals obtuſe.

3. Iſopyrum aquilegioides. *Columbine-leaved Iſopyrum.*
Lin. ſpec. 783. *Reich.* 2. 770. *Hall. helv. n.* 1190. *Krock. ſileſ. n.* 891.
Aquilegia montana, flore parvo, thalictri folio. *Bauh. pin.* 144. *prodr.* 75. *Bauh. hiſt.* 3. 484. *Raii hiſt.* 707. *Mor. hiſt.* 3. 458. *ſ.* 12. *t.* 1. *f.* 5.
A. viſcoſa. *Lin. mant.* 77. *La Chenal obſ. bot. p.* 12.
Stipules obſolete.

DESCRIPTIONS, *&c.*

1. This is an annual plant, ſeldom more than three or four inches high. The leaves, which are ſhaped like thoſe of Fumitory, are ſmall, and of a gray colour. The ſtalk is naked to the top, where there is a circle of leaves juſt under the flowers. The flowers are ſmall, of an herbaceous colour on the outſide, but yellow within. [Capſules ten to fifteen, leguminoſe, compreſſed a little, ſetaceous-beaked, curved a little inwards, veined, pale, thin, opening inwards. Seeds fixed in a double row to the edge of the opening ſuture, ſmall, ovate-globular, covered with little raiſed dots, blackiſh, marked on one ſide with a linear hilum or ſcar [a].] Native of Siberia, whence the ſeeds were ſent to the imperial garden at Peterſburgh, and Dr. Ammann ſent a part of the ſeeds to Mr. Miller, [who cultivated them at Chelſea in 1759 [b].] It flowers at the beginning of april (june, H. K.), and the ſeeds ripen in may.

2. [All parts of this plant are ſmooth, except the lower part of the ſtem and radical leaf, which is a little villoſe. Root perennial, creeping horizon-

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[a] Woodw. Mſs.

[b] Withering.

[c] Bolton.

[d] Linn. ſuppl.

[a] Gærtner.

[b] Hort. kew.

tally. Root-leaf one, ſeldom two, tender, ſhorter than the ſtem, on a long upright petiole, twice trifid; leaflets blunt, widening towards the end, two-lobed or three-lobed, netted-veined, aſh-coloured, reſembling the leaves of Thalictrum minus or bulbous Fumitory. Stem commonly ſingle, from ſix inches to near a foot in height, ſimple or very ſeldom branched, naked below, but having a leaf or two towards the top, like the root-leaf, only leſs compound: the upper leaves are ternate or lobed. All the leaves have a pale roundiſh ſtipule on each ſide. The ſtem terminates in a few ſpreading ſlender peduncles, each bearing one ſmall flower; the petals of which are at firſt white, but turn red or purple, the natural number is five, but there are ſometimes ſix. Stamens from thirty to thirty-ſix; filaments a little thickened at the top; anthers upright. Germs one, two or three, ſeldom four; becoming ſmooth, broad-oblong capſules, flatted a little, acuminated by the ſtyle from the inner ſuture, but opening by the upper, in this ſtate ſpreading very wide open, keeled and concave, diſplaying two or three ſeeds.—The leaflets of the nectary are inſerted into the receptacle before the petals, but not always in a regular order, they are ſhorter than the ſtamens by half or two thirds, are upright, ovate, white, concave, from a pedicelled baſe widening into a cowl, but quite entire [c].

Native of the South of Europe.] Mr. Miller had it from the neighbourhood of Verona, and cultivated it in 1759. It flowers at the end of march, and the ſeeds ripen in may. [According to Jacquin it flowers in Auſtria in april or the beginning of may.]

3. This has leaves like the ſecond, but a little larger, and of a greener colour. The ſtalks riſe about ſix inches high, ſupporting two or three ſmall white flowers, ſhaped like thoſe of the preceding. It flowers in april, and the ſeeds ripen in june.

[According to Caſpar Bauhin, and Haller, and Krocker from him, it differs from the preceding in having a very ſmall root; the ſtem a long ſpan in height, ſlender, having two or three, ſhort, entire, ſtipular leaves on it, the reſt like thoſe of Thalictrum minus, only ſmaller; and a ſingle blue flower, five times leſs than that of the preceding.

Native of the mountains of Switzerland, Moravia, Trent, and the Apennines, in meadows, flowering in the ſpring.

It is the ſame with Aquilegia viſcoſa of Linneus.]

PROPAGATION AND CULTURE.

Sow the ſeeds in a ſhady border ſoon after they are ripe, or permit them to ſcatter; and when they come up keep them clean from weeds. Theſe plants delight in a ſhady ſituation.

Isora. See *Helicteres.*

[Itaiba. See *Hymenæa.*]

ITEA. (Ιτεα *of Theophraſtus and Dioſcorides:* παρα το ιεναι, *from its quick growth, or early germination.* Lex.)

Lin. gen. n. 275. *Reich. n.* 295. *Schreb. n.* 381. *Juſſ.* 159. *L'Herit. ſtirp. nov.* 6. 137. *Swartz obſ.* 93. Cyrilla. *Lin. gen. Reich. n.* 294. *Schreb. n.* 380. *Juſſ.* 160.—Diconangia, *Mitch. gen.* 5.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Rhododendra,* Juſſ.—Cyrilla inter *Ericas,* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, five-cleft, upright. *Segments* lanceolate, acute, permanent, coloured.

Cor. *Petals* five, ſeſſile, lanceolate, acuminate, ſpreading, deciduous.

Stam. *Filaments* five, awl-ſhaped, upright, the length of the corolla, inſerted into the baſe of the calyx. *Anthers* roundiſh, incumbent.

Pist. *Germ* ovate, ſuperior. *Style* permanent, cylindrical, the length of the ſtamens. *Stigmas* two, blunt.

Per. *Capſule* ovate, longer than the calyx, mucronated by the ſtyle, two-celled, two-valved, many-ſeeded.

Seeds very ſmall, oblong, ſhining.

Obs. Itea Cyrilla *has the petals inſerted, not into the calyx, but the receptacle; the ſtyle bifid, and the capſule not opening.* Swartz.

ESSENTIAL CHARACTER.

Capſ. two-celled, two-valved, many-ſeeded. *Stigma* emarginate.

SPECIES.

1. Itea virginica. *Virginian Itea.*
Lin. ſpec. 289. *ſyſt.* 241. *Reich.* 1. 562. *Gron. virg.* 143. 34. *Duham. arb.* 1. 319. *t.* 126. *Du Roi harbk.* 1. 330. *Trew. Ehret.* 55. *t.* 98. *Swartz obſ.* 94. *L'Herit. ſtirp. nov.* 138.
Diconangia. *Mitch. gen. n.* 5. *Act. nat. cur.* 8. *app.* 208.
Leaves ovate acute ſerrate.

[2. Itea Cyrilla. *Entire-leaved Itea.*
L'Herit. ſtirp. nov. 6. 137. *t.* 66. *Swartz prodr.* 50. *obſ.* 94. *t.* 4. *f.* 1. *Ait. hort. kew.* 1. 277.
Cyrilla racemiflora. *Lin. ſyſt.* 241. *Reich.* 1. 561. *mant.* 50. *Jacqu. collect.* 1. 162. *ic.* 1. *t.* 47.
Leaves lanceolate entire membranaceous.]

DESCRIPTIONS, &c.

1. This is a ſhrub ſix or ſeven feet high, ſending out many branches from bottom to top. Leaves alternate, ſlightly ſerrate, reflex, veined, light green. At the extremity of the ſame year's ſhoots, in the month of july, are produced fine ſpikes of white flowers, three or four inches long, and erect. When this ſhrub is in vigour, it is entirely covered with theſe flowers, and then makes a fine appearance.

[Linneus remarks, that the Itea has the appearance of the Padus; that the leaves are petioled, and the flowers in terminating racemes. The ſtigma is headed in this ſpecies, whereas in the next it is bifid or double [a].

Native of North America. Cultivated in 1744, by Archibald Duke of Argyle [b].

2. This is alſo a ſhrub, three feet in height. Stem upright, ſomewhat branched, round, aſh-coloured: branches alternate or ſcattered, ſpreading, angular, rufous, ſmooth. Leaves alternate, bluntiſh, revolute with the edges a little waved, one-nerved; the midrib marked with lines above, prominent underneath, ſmooth, paler underneath, dry, ſpreading, flat, permanent, three inches long, and an inch wide. Petioles very ſhort, cylindric below, flat above, reddiſh. Racemes very many, lateral at the baſe of the new ſhoots, one from each bud, on ſhort peduncles, ſpreading, from four to ſix inches long. Flowers ſcattered, pedicelled, ſpreading, white, two or three lines in diameter. Bracte linear, very ſharp, white, withering, under the pedicels, than which it is ſcarcely longer. Bracteole two-leaved, oppoſite, linear, ſharp, preſſed cloſe, on the pedicel itſelf next the calyx; which is white. Petals longer than the calyx. Anthers two-celled, peltate, very pale violet. Germ whitiſh: ſtyle ſhort, compreſſed, ſcarcely bifid, ſhorter than the ſtamens: ſtigmas headed. Capſule ſitting on the calyx, reſembling two united ſtyles by means of its double partitions.

The conformity of the flower and two-celled fruit perſuade us to unite theſe two ſpecies under one genus [c].

Native of Carolina and Jamaica. It was obſerved in the former by Dr. Garden, in the latter by Swartz. Introduced here in 1765, by Mr. John Cree. It flowers in july and auguſt [d].]

PROPAGATION AND CULTURE.

1. This ſhrub will live in the open air in England, but will not thrive upon dry gravelly ground. It is propagated by layers, which, if laid down in the autumn, will put out roots ſo as to be fit to remove by the following autumn, when they may be tranſplanted into a nurſery, or to the place where they are to remain.

[2. This requires the protection of the greenhouſe: and may be increaſed by layers or cuttings.

Itti Canni. See *Loranthus.*

Itty Alu. See *Ficus.*]

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[c] Jacquin.

[a] L'Heritier. [b] Hort. kew. [c] L'Heritier. [d] Hort. kew.

IVA.

Lin. gen. n. 1059. *Reich. n.* 1155. *Schreb. n.* 1429. *Gærtn. t.* 164. *Juſſ.* 190.

Tarchonanthus. *Vaill. act. par.* 1719. *f.* 16, 17.

Claſſ. 21. 5. Monoecia Pentandria.

Nat. order of *Compoſitæ Nucamentaceæ.—Corymbiferæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Common* roundiſh : *leaflets* about five, ſubovate, blunt, almoſt equal, permanent, containing very many florets.

Cor. *Compound* convex ; *Corollets male* very many in the diſk ; *female* five in the ray.

Proper, *Males* one-petalled, funnel-form, five-toothed, the length of the calyx. *Females* none.

Stam. *Males*, *Filaments* five, briſtle-ſhaped, the length of the corollet. *Anthers* erect, approximating.

Pist. *Females*, *Germ* oblong, the length of the calyx. *Styles* two, capillary, long. *Stigmas* acute.

Per. none. *Calyx* unchanged.

Seeds ſolitary, naked, the length of the calyx, at top thicker, blunt.

Rec. chaffy ; chaffs linear, interior.

ESSENTIAL CHARACTER.

Male. *Cal.* common, three-leaved (or five-leaved, *G.*) *Cor.* of the diſk one-petalled, five-cleft. *Recept.* with hairs or linear chaffs.

Fem. in the ray, five (or fewer). *Cor.* none. *Styles* two long. *Seeds* naked, blunt.

SPECIES.

1. Iva annua. *Annual Iva.*

Lin. ſpec. 1402. *Reich.* 4. 141. *hort. upſ.* 285. *amoen.* 3. 25. *Gærtn. fruct.* 2. 394. *Schmid. ic.* 59. *t.* 16.

Leaves lanceolate-ovate, ſtem herbaceous.

2. Iva fruteſcens. *Shrubby Iva*, or *Baſtard Jeſuit's-bark Tree.*

Lin. ſpec. 1402. *Reich.* 4. 141. *amoen.* 3. 25. *Gron. virg.* 2. 147. *Gærtn. fruct.* 2. 394.

Parthenium fol. lanc. ſerratis. *Linn. hort. cliff.* 443. *Gron. virg.* 115.

Elichryſo affinis peruviana fruteſcens. *Pluk. phyt. t.* 27. *f.* 1. *Herm. lugdb.* 666.

Pſeudo-Helichryſum frut. peruv. foliis longis ſerratis. *Mor. hiſt.* 3. 90.

Leaves lanceolate, ſtem ſhrubby.

DESCRIPTIONS, &c.

1. This is an annual plant, with an herbaceous ſtalk, riſing from two to three feet high, ſending out ſeveral branches from the ſides. The leaves have three deep longitudinal veins and are ſerrate. The ſtalks and branches are terminated by ſmall cluſters of pale blue flowers, which appear in july, and the ſeeds ripen in autumn.

[Calyx globular, five-leaved; ſeldom three-leaved or four-leaved. Chaffs of the receptacle linear, longer than the androgynous flowers. Female corollets crenulate, not diſtinctly and regularly cut into teeth. Seeds (to the females) obcordate, angular[e].

Native of South America, in many parts of the Weſt Indies. Cultivated by Mr. Miller in 1768.]

2. This has ſlender woody branches, eight or ten feet high. Leaves ſerrate. Branches terminated by ſmall cluſters of pale purple flowers. [Receptacle flattiſh, with linear, diſtant chaffs; almoſt equal to the calyx. Seeds (in the female corollets) obovate, acuminate downwards, ſlightly convex on one ſide, angular or three-ſided on the other, pale ſtraw-coloured, ſmooth, bald[f].

Native of Virginia and Peru. Cultivated in 1711 by the Dutcheſs of Beaufort. It flowers in auguſt[g].]

PROPAGATION AND CULTURE.

1. Sow the ſeeds on a moderate hot-bed, and when the plants are fit to remove tranſplant them to another hot-bed, treating them as is directed for Impatiens.

2. This ſhrub was preſerved in the green-houſe, but ordinary winters in England ſeldom hurt it, provided it is planted in a dry ſoil and a ſheltered ſituation. If the branches be layed in the ſpring, they will put out roots in ſix months; or if cuttings be planted in a ſhady border in may, they will take root.

[Iva. See *Teucrium.*

Judas Tree. See *Cercis.*

Juglandi affinis. See *Hippomane.*]

JUGLANS, (*of Pliny.* Jovis glans; *acorn or maſt of Jove.*)

Lin. gen. n. 1071. *Reich. n.* 1169. *Schreb. n.* 1446. *Gærtn. t.* 89. *Juſſ.* 375.

Nux. *Tournef.* 346. *Boerh.* 2. 175. *Malpig.* 220, 221, 246.

Claſſ. 21. 7. Monoecia Polyandria.

Nat. order of *Amentaceæ. Terebintaceæ*, Juſſ.

GENERIC CHARACTER.

* *Male Flowers.*

Cal. *Ament* cylindrical, imbricate-ſcattered all round; with one-flowered *ſcales*, turned outwards.

Perianth elliptic, flat, ſix-parted ; *ſegments* upright-concave, blunt.

Cor. none.

Stam. *Filaments* many (eighteen to twenty-four—twelve to twenty-four, *G.*) very ſhort. *Anthers* oval.

* *Female Flowers heaped.*

Cal. *Perianth* one-leafed, bell-ſhaped, four-cleft, upright, very ſhort, one-flowered.

Cor. one-petalled, four-cleft, upright, acute, a little larger than the calyx : (none, *G.*)

Pist. *Germ* oval, large, inferior. *Style* very ſhort : (ſtyles two, *G.*) *Stigmas* two, large, reflex, jagged at top.

Per. *Drupe* dry, oval, large, one-celled.

Seed. *Nut* very large, roundiſh, netted-grooved, half-four-celled : (corticated, two-valved, *G.*) *nucleus* four-lobed, variouſly grooved.

ESSENTIAL CHARACTER.

Male. *Cal.* one-leafed, ſcale-form. *Cor.* ſix-parted. *Filam.* eighteen.

Fem. *Cal.* four-cleft, ſuperior. *Cor.* four-parted. *Styles* two. *Drupe* with a grooved nucleus.

SPECIES.

1. Juglans regia. *Common Walnut Tree.*

Lin. ſpec. 1415. *ſyſt.* 858. *Reich.* 4. 164. *hort. cliff.* 448. *upſ.* 286. *mat. med.* 203. *Woodv. med. bot.* 347. *t.* 127. *Mill. illuſtr. ic.* *Pallos roſſ.* 1, 2. *p.* 2. *Evel. ſylv. Hunt.* 170. *fig.* *Du Roi harbk.* 1. 323. *Hall. helv. n.* 1624. *Ludw. ect. t.* 188. *Blackw. t.* 247. *Knorr. del.* 1. *t. n.* 7. *Kniph. cent.* 1. *n.* 47. *Lour. cochinch.* 573. *Villars dauph.* 3. 797. *Duham. arb.* 2. 50. *n.* 1. *t.* 13.

Nux juglans. *Dod. pempt.* 816. *Bauh. hiſt.* 1. 241. *Ger.* 1252. *emac.* 1440. *Raii hiſt.* 1376.—ſ. regia vulgaris. *Bauh. pin.* 417.—vulgaris. *Park. theat.* 1413.

β. Nux juglans fructu maximo. *Bauh. pin.* 417.

Large Walnut.

N. J. Caballina. *Park. theat.* 1413.

γ. N. J. fructu tenero & fragili putamine. *Bauh. pin.* 417. *Park. theat.* 1413. 3.

Thin-ſhelled Walnut.

δ. N. J. bifera. *Bauh. pin.* 417. *Park. theat.* 1414. 5.

Double-bearing Walnut.

ε. N. J. fructu ſerotino. *Bauh. pin.* 417. *Park. theat.* 1414. 6.

Late-ripe Walnut.

Leaflets (about nine) oval (or oblong) ſmooth ſubſerrate almoſt equal, the odd one petioled.

2. Juglans alba. *White Walnut-tree* or *Hickery.*

Lin. ſpec. 1415. *Reich.* 4. 165. *Du Roi harbk.* 1. 333. *Kalm in act. Stockh.* 1769. *p.* 119. *Gærtn. fruct.* 2. 50. *Gron. virg.* 2. 150. 1. 190. *Evel. ſyl. ed. Hunt.* 171. 4. *Wangenh.* 23. *t.* 10. *f.* 22.

Nux juglans alba virginienſis. *Park. theat.* 1414. *Cateſb. car.* 1. *t.* 38. *Raii hiſt.* 1377. & 1915. *dendr.* 5.

β. J. glabra. *Mill. dict. n.* 5. *Pluk. phyt. t.* 309. *f.* 2. *Du Roi.* 1. 335.

Leaflets ſeven lanceolate ſerrate, the odd one ſeſſile.

3. Juglans nigra. *Black Walnut-tree.*

Lin. ſpec. 1415. *Reich.* 4. 165. *hort. cliff.* 449. *upſ.* 287. *Gron. virg.* 150. *Kalm in act. Stockh.* 1767. *p.* 51. *Du Roi harbk.* 1. 329. *Medic. in obſ. ſoc. œcon. Lutr.* 1774. *p.* 229. *Jacqu. miſc.* 2. *p.* 3. *ic.* 1. *t.* 191. *Thunb. jap.* 195. *Evel. ſyl. ed. Hunt*, 170. 2. *Wangenh.* 20. *t.* 8. *f.* 20.

Nux Juglans virginiana nigra. *Herm. lugdb.* 452. *t.* 453. *Cateſb. car.* 1. *t.* 67. *Duham. arb.* 13. *Raii hiſt.* 1377. *dendr.* 5. *n.* 4. & 6. *n.* 2.

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[e] Gærtner, from Schmidel.

[f] Ibid.

[g] Hort. kew.

Leaflets many (about fifteen) oblong-lanceolate ſerrate, fruits globular valveleſs, nuts wrinkled, male aments ſeſſile ſimple, females peduncled.

4. Juglans oblonga. *Oblong-fruited Walnut-tree.*
Retz. obſ. 1. 31. *n.* 106.
Leaflets many (ſix or eight pairs) ovate-lanceolote ſerrate, pubeſcent with the petioles, nuts deeply ſinuate-grooved.

5. Juglans cinerea. *Aſh-coloured Walnut-tree.*
Lin: ſpec. 1415. *Reich.* 4. 165. *Jacqu. miſc.* 2. *p.* 7. *ic.* 1. *t.* 192. *Medic. in obſ. Soc. œcon. Lutr.* 1774. *p.* 230. *Wangenh.* 21. *t.* 9. *f.* 21.
J: oblonga. *Mill. dict. n.* 3. *Du Roi harbk.* 1. 332. *Duham. arb.* 14. *Reich. Evel. ſylv. ed. Hunt.* 1. 171. 3. *Raii dendr.* 6. *n.* 3.
Leaflets eleven lanceolate ſhorter on one ſide of the baſe.

6. Juglans compreſſa. *Flat-fruited Walnut-tree.*
Gærtn. fruct. 2. 51.
J. ovata: *Mill. dict. n.* 6. *Evel. ſyl. ed Hunt.* 172. 6.
J. alba, fructu ovato compreſſo, nucleo dulci, cortice ſquamoſo. *Clayt. in Gron. virg.* 150.
Leaflets three pairs lanceolate ſerrate ſmooth nearly equal, fruit flatted.

[7. Juglans anguſtifolia. *Narrow-leaved Walnut-tree.*
Ait. hort. kew. 3. 361.
Leaflets thirteen linear-lanceolate ſerrate ſeſſile equal at the baſe, nuts elliptic.

8. Juglans baccata.
Lin. ſpec. 1416. *Reich.* 4. 166. *Brown. jam.* 346. *Sloan. jam.* 2. 1. *t.* 157. *f.* 1. *Raii dendr.* 6. *n.* 7.
Leaflets in threes.

DESCRIPTIONS, &c.

1. The Walnut is a very large and lofty tree, with ſtrong ſpreading boughs. Leaves pinnate, with a very ſtrong but not unpleaſant ſmell. Leaflets three pairs (ſometimes two or four), nearly equal, except that the odd one is larger, they are entire, ſmooth, and ſhining. Male flowers in cloſe, pendulous, ſubterminating aments. Females ſcattered, frequently two or three together. Fruit an ovate, coriaceous, ſmooth drupe, incloſing an irregularly grooved nut, which contains a four-lobed, oily, eatable kernel, with an irregular knobbed ſurface, and covered with a yellow ſkin.]

There are ſeveral varieties of the Common Walnut, which have been ſpecified above, but they all vary again when raiſed from the ſeed, and nuts from the ſame tree will produce different fruit: perſons therefore who plant the Walnut for its fruit, ſhould make choice of the trees in the nurſeries, when they have their fruit upon them.

[The flowers begin to open about the middle of april, and are in full blow by the middle of may, before which time the leaves are fully diſplayed. Even in the South of France it is frequently injured by ſpring froſts; to avoid this, it is a practice in Switzerland to engraft the common ſtocks with the late-ripe variety, which does not produce its fruit before the month of may or june [a]. This might perhaps be too late for us, but in warmer climates, where the fruit is of much conſequence for the oil which it yields, where the Olive will not ſucceed, it may be worth attending to. In France, Switzerland, &c. the wood is in great requeſt for furniture, as it was formerly in England, till the uſe of Mahogany ſuperſeded it.

Were this timber, ſays Mr. Evelyn, in greater plenty amongſt us, we ſhould have far better utenſils of all ſorts for our houſes, as chairs, ſtools, bedſteads, tables, wainſcot, cabinets, &c. inſtead of the more vulgar Beech, ſubject to the worm, weak and unſightly; but which, to counterfeit and deceive the unwary, they waſh over with a decoction made of the green huſks of Walnuts, &c.

What univerſal uſe, he continues, the French make of the timber of this tree for domeſtic affairs, may be ſeen in every room both of poor and rich. It is of ſingular uſe with the joiner for the beſt grained and coloured wainſcot; with the gunſmith for ſtocks; with the coachmaker for wheels and the bodies of coaches; the cabinet-maker uſes it for inlayings, eſpecially the firm and cloſe timber about the root, which is admirable for flecked and cambleted works. To render this wood the better coloured joiners put the boards into an oven after the batch is forth, or lay them in a warm ſtable; and when they work it, poliſh it over with its own oil very hot, which makes it look black and ſleek, and the older it is, the more eſtimable; but then it ſhould not be put in work till thoroughly ſeaſoned, becauſe it will ſhrink beyond expectation. It is only not good to confide in it much for beams or joiſts, becauſe of its brittleneſs.

Beſides the uſes of the wood, the fruit, when tender and very young, is uſed for preſerves. It makes alſo food and oil: this laſt is of extraordinary uſe with the painter in whites and other delicate colours, alſo for gold ſize and varniſh; and with this they poliſh walking-ſtaves, and other works which are wrought in with burning. They fry with it in ſome places, and eat it in Berry inſtead of butter, of which they have little or none good; and therefore they plant infinite numbers of theſe trees all over that country: the uſe of it to burn in lamps is common there.

The very huſks and leaves being macerated in warm water, and that liquor poured on graſs-walks and bowling-greens, infallibly kills the worms, without endangering the graſs [b]. Not that there is any thing peculiarly noxious in this decoction, but worms cannot bear the application of any thing bitter to their bodies, which is the reaſon that bitters, ſuch as Gentian, are the beſt deſtroyers of worms lodged in the bowels of animals. Worms are ſeldom obſerved in the inteſtines of the human body, excepting in caſes where the bile is either weak or deficient [c].

The dye made of this lixive will colour woods, hair and wool; and the green huſks boiled, make a good colour to dye a dark yellow, without any mixture.

The younger timber is held to make the better-coloured work; but the older, being more firm and cloſe, is finer cambleted for ornament. Thoſe trees which are raiſed from the thick-ſhelled fruit become the beſt timber; but the thin-ſhelled yield better fruit.

Thoſe nuts which come eaſily out of their huſks ſhould be laid to mellow in heaps, and the reſt expoſed in the ſun till the ſhells dry, elſe the kernels will be apt to periſh: ſome again preſerve them in their own leaves, or in a cheſt made of walnut-tree wood; others in ſand, eſpecially for a ſeminary. Old nuts are not wholeſome till macerated in warm water; but if you bury them in the earth in pots, out of the reach of the air, and ſo as no vermin can attack them, they will keep marvellouſly plump the whole year about, and may eaſily be blanched. In Spain, they ſtrew the gratings of old and hard nuts, firſt peeled, into their tarts and other meats. For the oil, one buſhel of nuts will yield fifteen pounds of peeled and clear kernels, and that half as much oil, which the ſooner it is drawn, is the more in quantity, though the drier the nut, the better in quality: the lees or marc of the preſſing is excellent to fatten hogs with. After the nuts are beaten down, the leaves ſhould be ſweeped into heaps, and carried away, becauſe their extreme bitterneſs impairs the ground [d].

The unripe fruit, ſuch as has been long uſed as a pickle, is directed for medicinal uſe by the London College, as an anthelmintic, and many authors ſpeak of its effects in deſtroying worms. An extract is the moſt convenient preparation, as it may be kept for a ſufficient length of time, and made agreeable to the ſtomach by mixing it with cinnamon water. In this ſtate the Walnut is ſaid alſo to be laxative, and of uſe in apthous affections and ſore throats: for this purpoſe a rob may be prepared from the juice. The vinegar in which Walnuts have been pickled is a very uſeful gargle. The kernel is ſimilar in qualities to the Almond; the oil does not congeal by cold, and anſwers the medicinal purpoſes of the oil of almonds [e].

We are not certain of the native place of growth of the Walnut tree. It is not an aboriginal of Europe, and there is little doubt but that it came into Italy from Greece, and into Greece from ſome part of Aſia. Some authors take it for the *Nux Perſica* of Theophraſtus; Pliny (l. 15. c. 24.) ſays, it was brought from Perſia by the kings; and on the authority of Lerche it is now ſet down as a native of Perſia in the later works of Linneus. According to Loureiro, it is found wild in the northern provinces of China.

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[a] Villars.

[b] Sylva 174, 175, 177, 178. ed Hunt.

[c] Dr. Hunter's note, p. 178

[d] Sylva, 178, 179.

[e] Woodville.

It is much cultivated in ſome parts of Italy, France, Germany, and Switzerland. Burgundy, ſays Mr. Evelyn, abounds with Walnut-trees, where they ſtand in the midſt of goodly wheat-lands, at ſixty and a hundred feet diſtance, and ſo far are they from hurting the crop, that they are looked upon as great preſervers by keeping the ground warm, nor do the roots hinder the plough. Whenever they fell a tree, which is only the old and decayed, they always plant a young one near him. In ſeveral places betwixt Hanau and Frankfort in Germany, no young farmer is permitted to marry a wife, till he bring proof that he has planted a ſtated number of Walnut-trees. The Bergſtraſs, which extends from Heidelberg to Darmſtadt, is all planted with Walnuts[f]. According to Pallas, it is common in the Ukraine, the Cherſoneſus Taurica and Caucaſus, where it alſo appears here and there in a wild ſtate. From the northern ſide of Caucaſus it becomes more ſcarce, but on the lower parts towards the ſouth it is very common, large, and appears to be indigenous.

Formerly there were conſiderable plantations of this tree in England, particularly on the chalk hills of Surry. Mr. Evelyn inſtances thoſe of Sir Richard Stidolph near Leatherhead; Sir Robert Clayton's at Morden near Godſtone, once belonging to Sir John Evelyn; and about Carſhalton, where many thouſands of theſe trees celebrate the induſtry of the owners, and will certainly reward it with infinite improvement, beſides the ornament which they afford to thoſe pleaſant tracts, for ſome miles in circumference[g].

Little uſe having been made of the wood of late years for furniture, the old trees that have been cut down have not been always replaced with young ones, and thus the plantations of this tree have gradually diminiſhed. The wood is now principally uſed for making gun-ſtocks; and the fruit with us is only eaten ripe in deſerts, or green in pickles: ſo that the call for this tree is not equal to what it was formerly.

The Engliſh name of this tree and fruit has nothing to do with *wall*: it is *Gaul-nut*; whence we may conclude it came to us anciently from Gaul. The French call the tree *Noyer*, and the fruit *Noix*; as the Romans named it excluſively *Nux*. In German it is *Wallnuſs* or *Welſche Nuſs*.]

2. The leaves of the White Walnut-tree, or Hickery Nut, as it is called in North America, where it is very common in moſt of the provinces, are compoſed of two or three pairs of oblong lobes, terminated by an odd one; theſe are of a light green, and ſerrate; the lower pair of lobes are the ſmalleſt, and the upper the largeſt. The fruit is ſhaped like the common Walnut, but the ſhell is not furrowed, and is of a light colour.

[Gærtner deſcribes the outer ſhell or rind as thick, coriaceous, when ripe opening at top into four parts. The ſhell ovate-globular, four-cornered, terminated by a ſtrong, quadrangular dagger-point, marked with obſolete lines not with wrinkles; ſmooth, whitiſh, two-valved, half-four-celled: valves bony, very thick, without any viſible ſuture on the outſide: partitions alſo bony, thick, ruſeſcent; two lateral longitudinal, and one tranſverſe at the baſe of the ſhell, but all incomplete, and forming a half-four-celled cavity. Seed or kernel large, half-four-lobed; the lobes variouſly and irregularly wrinkled and tubercled.

Cateſby ſays, it is uſually a tall tree, and often grows to a large bulk, the body being from two to three feet diameter. The leaves differ from thoſe of the common Walnut, not only in being ſerrated, but in being narrower and ſharper pointed. In october, when the nuts are ripe, the outer ſhell opens and divides in quarters (as repreſented in the figure) diſcloſing the nut, the ſhell of which is thick, not eaſily broke but with a hammer. The kernel is ſweet and well taſted; the Indians draw from it a wholeſome and pleaſant oil, and ſtore up the nuts for winter proviſion. Hogs and many wild animals receive great benefit from them. The wood is coarſe-grained, yet of much uſe for many things belonging to agriculture. Of the ſaplings or young trees are made the beſt hoops for tobacco, rice, and tar barrels. For the fire no wood in the northern parts of America is in ſo much requeſt. The bark is deeply furrowed.

Cultivated in 1699 by the Dutcheſs of Beaufort[h].

β. Du Roi as well as Miller gives the Juglans glabra as a diſtinct ſpecies.]

Miller ſays, it is not ſo large as the Hiccory, that the leaves are compoſed of two pairs of leaflets, beſides the odd one, narrow at their baſe, broad and rounded at their ends, ſerrate and of a light green; and that the nuts are ſmall, have a ſmooth ſhell, and are very hard and white.

[Cateſby calls it *Nux Juglans carolinenſis fructu minimo, putamine lævi*, or Pignut, and gives a figure of the fruit. He ſays, the branches ſpread more than the common Hiccory, are ſmaller, and the leaves not ſo broad; nor is the bark ſo wrinkled. The nuts are not above one-fourth part of the ſize, and both inner and outer ſhell being very thin, they are eaſily broken with the fingers. The kernels are ſweet, but being ſmall, and covered with a very bitter ſkin; they are chiefly eaten by ſquirrels and other wild animals.]

3. The Black Virginia Walnut grows to a large ſize. The leaves are compoſed of five or ſix pairs of leaflets, which end in acute points and are ſerrate; the lower pair is the leaſt, the others gradually increaſe, but the pair at top and the terminating leaflet are ſmaller: theſe leaves when bruiſed emit a ſtrong aromatic flavour, as does alſo the outer cover of the nuts, which is rough, and rounder than that of the Common Walnut. The ſhell is very hard and thick, and the kernel ſmall but very ſweet.

[Cateſby on the contrary ſays, that it is very oily and rank-taſted; when laid by however for ſome months it is eaten by indians, ſquirrels, &c. He remarks, that the leaves are much narrower, as well as ſharper-pointed than thoſe of our Walnut, and not ſo ſmooth; that the thickneſs of the inner ſhell requires a hammer to break it; and that it ſeems to have taken its name from the colour of the wood, which approaches nearer to black than any other wood that affords ſo large timber, and therefore is eſteemed for making cabinets, tables, &c.]

Mr. Miller ſays that this is the moſt valuable wood of all the ſorts of Walnut, and that ſome of the trees are beautifully veined, and will take a good poliſh; that others however have very little beauty. He adds, that this is full as hardy as our common ſort, and that there are ſome large trees of it in the Chelſea garden, which have produced great quantities of fruit upwards of forty years[i], which have generally ripened ſo well as to grow; but the kernels being ſmall, they are of little value on that account. [It was cultivated in 1656, by Mr. John Tradeſcant, junior[k].

Jacquin gives a long deſcription of this tree and its fructification at the beginning of the ſecond volume of his miſcellanies.

Cateſby ſays, that moſt parts of North America abound with this tree, particularly Virginia and Maryland, towards the heads of the rivers, where in low rich land it grows in great plenty, and to a vaſt ſize. According to Jacquin, it abounds in Penſylvania and New Jerſey, and is common not only in Virginia and Maryland, but in Carolina, at a diſtance from the ſea, the neighbourhood of which it diſlikes. To the north of New York it becomes ſcarce, and is not found wild beyond the latitude of 41° 30′. It is cultivated however more to the northward, between New York and Albany: and it will grow, though not bear fruit in Sweden. In Penſylvania the flowers began to unfold about the fifth or ſeventh of may, when thoſe of the Juglans regia were already paſſed. The leaves come out there about the ninth of may. The nuts ripen there and in New Jerſey at the end of ſeptember; about the middle of october they are all fallen from the trees. The leaves fall ſoon after the fruit.

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[f] Sylva, 174, 175.

[g] Ibid, 176.

[h] Hort. kew.

[i] He ſays this in 1759.

[k] Hort. kew.

The growth of this tree is remarkably quick; it ſpreads out roots horizontally to a conſiderable diſtance, and will not ſuffer any thing to grow under its ſhade. When planted in an orchard, it deſtroys all the Apple trees that are near it.

It ſeems to be hardier than our Walnut, in Penſylvania and New Jerſey, when the Peaches, Hickeries, and Mulberries have been much injured by froſt, the Black Walnut has ſuſtained no damage. At eight or ten years of age it begins to bear plenty of fruit, and with age increaſes in fertility. Profeſſor Jacquin obſerved trees in New Jerſey that were forty-four years old, nine fathoms in height, and three ells and a half in diameter at the diſtance of an ell from the ground. It is much planted in America near houſes for the ſhade [l].

4. Leaflets alternate, ſeſſile, oblique, acute, naked above, pubeſcent underneath, void of ſmell. Petiole and upper nerve tomentoſe. Drupe oval, tomentoſe, viſcid. Nut oblong, acuminate, the colour of the common Walnut.

It was raiſed from nuts brought from America by Kalm, and firſt bore fruit in 1774. It was ſuppoſed to be the J. nigra, but the colour and form of the fruit is different, and the leaves have no ſmell [m].]

5. This grows to a large ſize. The leaves have ſeven or eight pairs of long heart-ſhaped leaflets, broad at their baſe, where they are divided into two round ears, but terminate in acute points; they are rougher and of a deeper green than thoſe of the Black Walnut, and have nothing of the aromatic ſcent which they have. The fruit is very long; the ſhell deeply furrowed and very hard; the kernel ſmall but well-flavoured.

[In habit, trunk, and bark this is the ſame with Juglans nigra. The male aments alſo are pendulous, but they are more often in pairs than ſolitary, and without flowers at their filiform tip: in ſtructure they reſemble thoſe of J. regia, but are more oblong. The peduncles of the females are ſomewhat villoſe, round and terminating, bearing from three to five ſeſſile flowers at the extremity. Germ oblong. Stigmas purple and long. Drupe oblong-ovate, villoſe, viſcid, with very little ſmell. Nut acuminate, rough and unequal on the outſide. Kernel leſs pleaſant and more oily than our Walnut. Leaflets about ſeven on each ſide, beſides the end one, oppoſite, ſubſeſſile, villoſe when magnified, ſerrulate, ovate-oblong, acuminate, having little ſmell, the baſes nearly equal; midrib round and villoſe [n].

Jacquin ſuſpects that Linneus's ſpecific differences of this and the nigra are tranſpoſed. This and the *oblonga* of Retzius and Miller ſeem to be one ſpecies.

Native of North America. Cultivated in 1656, by Mr. John Tradeſcant, junior [o]. The order of flowering, according to Jacquin is, firſt *J. regia*, then *cinerea* and laſtly *nigra* in a few days after. The order of fruiting is different, for when the fruit of the common Walnut begins to drop on the eighth of ſeptember, the *nigra* follows at the end of the ſame month, and the *cinerea* not till after the beginning of october.]

6. This tree is of a middling ſtature. The leaves have three pairs of leaflets, of a dark green colour, ending in acute points. The fruit is oval; the ſhell white, hard and ſmooth; the kernel ſmall, but very ſweet. The young ſhoots are covered with a very ſmooth browniſh bark, but the ſtems and older branches have a rough ſcaly bark, whence it has the appellation of *Shagbark* in America.

[Gærtner deſcribes the ſhell as ovate-rounded, obliquely truncate at the baſe, flatted like a lens, but four-cornered and ſhaped like a rhomb, white, ſmooth, very thick and hard. Suture linear, ſcarcely perceptible; valves boat-ſhaped, with a compreſſed, acute keel; partitions as in the alba. Kernel ſmall in proportion to the ſhell, half-four-lobed, with a rufeſcent-yellow ſkin.

Native of North America.

Gærtner has another ſort, which he names *Juglans rubra* (Noix Pacanes de Madagaſcar); the ſhell of which is ovate-oblong, acuminate at both ends, eſpecially at top, where it is produced into a long four-cornered dagger-point; it is ſmooth, with the future ſcarcely diſcernible, of a middling thickneſs, hard, and of a pale teſtaceous colour: partitions coriaceous-cruſtaceous, brittle, brown. Kernel oblong, four-lobed, like the reſt in ſtructure; with the outer cuticle entirely of a blood-red colour.

He remarks, that the firſt ſpecies only has a diſtinct future to the ſhell with a ſwelling rim.

Wangenheim has two others: 1. J. ovalis, or thin-ſhelled White Walnut, with five or ſeven leaflets, the outer ones broader, the fruit (f. 23.) oval, acuminate at both ends, with a brittle ſhell. 2. J. cordiformis, the Bitter Nut, with ſeven leaflets, lanceolate, ſerrate; the fruit (f. 25.) bitter, heart-ſhaped, with a brittle ſhell.—Theſe are natives of North America.

7. Native of North America. Introduced in 1766, by Meſſrs. Kennedy and Lee [p].

Probably this may prove to be the ſame with ſome of the preceding ſpecies: perhaps n. 6.

8. Height twenty feet, as thick as the human thigh, with a comely top, and a gray bark having ſome furrows in it. Leaves terminating, always three together, three inches long, and one inch broad, thin, ſmooth, browniſh green: common petiole reddiſh, two inches long; petiolules a quarter of an inch in length. Aments axillary, two together, an inch long. The fruit hangs from the branches on peduncles an inch in length; it is yellowiſh, oval, as big as a nutmeg, having under a very thin mucilaginous pulp, a large ſhell [q], which is hard and woody. The partitions and lobes of the feed, as well as the parts of the flower, agree with the characters of this genus [r].

Native of Jamaica.

PROPAGATION AND CULTURE.

The common Walnut is propagated in many parts of England for the fruit, and formerly the trees were propagated for their wood, which was in very great eſteem, till the quantity of Mahogany, and other uſeful woods which have been of late years imported into England, almoſt baniſhed the uſe of Walnut.

Theſe trees are propagated by planting their nuts, which, as was before obſerved, ſeldom produce the ſame ſort of fruit as are ſown; ſo that the only way to have the deſired ſort, is to ſow the nuts of the beſt kinds; and if this is done in a nurſery, the trees ſhould be tranſplanted out when they have had three or four years growth, to the place where they are deſigned to remain; for theſe trees do not bear tranſplanting when they are of a large ſize, therefore there may be a good number of the trees planted, which need not be put at more than ſix feet apart, which will be diſtance enough for them to grow till they produce fruit; when thoſe whoſe fruit are of the deſired kind may remain, and the others cut up, to allow them room to grow, by this method a ſufficient number of the trees may be generally found among them to remain, which will thrive and flouriſh greatly when they have room; but as many people do not care to wait ſo long for the fruit, ſo the next beſt method is to make choice of ſome young trees in the nurſeries, when they have their fruit upon them; but though theſe trees will grow and bear fruit, yet they will never be ſo large or ſo long lived, as thoſe which are planted young.

All the ſorts of Walnuts which are propagated for timber, ſhould be ſown in the places where they are to remain; for the roots of theſe trees always incline downward, which being ſtopped or broken, prevent their aſpiring upward, ſo that they afterwards divaricate into branches, and become low ſpreading trees; but ſuch as are propagated for fruit are greatly mended by tranſplanting; for hereby they are rendered more fruitful, and their fruit are generally larger and fairer; it being a common obſervation, that downright roots greatly encourage the luxuriant growth of timber in all ſorts of trees; but ſuch trees as have their roots ſpreading near the ſurface of the ground, are always the moſt fruitful and beſt flavoured.

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[l] Jacqu. miſc.

[m] Retzius.

[n] Jacquin.

[o] Hort. kew.

[p] Ibid.

[q] Sloane.

[r] Brown. jam.

The nuts ſhould be preſerved in their outer covers in dry ſand until february, when they ſhould be planted in lines, at the diſtance you intend them to remain; but in the rows they may be placed pretty cloſe, for fear the nuts ſhould miſcarry; and the young trees, where they are too thick, may be removed, after they have grown two or three years, leaving the remainder at the diſtance they are to ſtand.

In tranſplanting theſe trees, you ſhould obſerve never to prune either their roots or large branches, both which are very injurious to them; nor ſhould you be too buſy in lopping or pruning the branches of theſe trees when grown to a large ſize, for it often cauſes them to decay; but when there is a neceſſity for cutting any of their branches off, it ſhould be done early in ſeptember (for at that ſeaſon the trees are not ſo ſubject to bleed) that the wound may heal over before the cold increaſes; the branches ſhould always be cut off quite cloſe to the trunk, otherwiſe the ſtump which is left will decay, and rot the body of the tree.

The beſt ſeaſon for tranſplanting theſe trees is as ſoon as the leaves begin to decay, at which time if they are carefully taken up, and their branches preſerved entire, there will be little danger of their ſucceeding although they are eight or ten years old, as I have ſeveral times experienced; though, as was before obſerved, theſe trees will not grow ſo large, or continue ſo long, as thoſe which are removed young.

This tree delights in a firm, rich, loamy ſoil, or ſuch as is inclinable to chalk or marl; and will thrive very well in ſtony ground, and on chalky hills, as may be ſeen by thoſe large plantations near Leatherhead, Godſtone, and Carſhalton in Surry, where are great numbers of thoſe trees planted upon the downs, which annually produce large quantities of fruit, to the great advantage of their owners; one of which I have been told, farms the fruit of his trees, to thoſe who ſupply the markets, for 30l. per annum.

The diſtance theſe trees ſhould be placed, ought not to be leſs than forty feet, eſpecially if regard be had to their fruit; though when they are only deſigned for timber, if they ſtand much nearer, it promotes their upright growth. The black Virginia Walnut is much more inclinable to grow upright than the common ſort, and the wood being generally of a more beautiful grain, renders it preferable to that, and better worth cultivating. I have ſeen ſome of this wood which has been beautifully veined with black and white, which, when poliſhed, has appeared, at a diſtance, like veined marble. This wood is greatly eſteemed by the cabinet-makers for inlaying, as alſo for bedſteads, ſtools, chairs, tables, and cabinets; and is one of the moſt durable woods for thoſe purpoſes of Engliſh growth, being leſs liable to be infected with inſects than moſt other kinds (which may proceed from its extraordinary bitterneſs;) but it is not proper for buildings of ſtrength, it being of a brittle nature, and exceeding ſubject to break very ſhort.

The general opinion is, that the beating off this fruit improves the trees, which I do not believe, ſince in the doing this, the younger branches are generally broken and deſtroyed; but as it would be exceeding troubleſome to gather it by hand, ſo in beating it off, great care ſhould be taken that it be not done with violence, for the reaſon before aſſigned. In order to preſerve the fruit, it ſhould remain upon the trees till it is thorough ripe, when it ſhould be beaten down, and laid in heaps for two or three days; after which it ſhould be ſpread abroad, when, in a little time, the huſks will eaſily part from the ſhells; then you muſt dry them well in the ſun, and lay them up in a dry place, where mice or other vermin cannot come to them, in which place they will remain good for four or five months; but there are ſome perſons who put their Walnuts into an oven gently heated, where they let them remain four or five hours to dry, and then put them up in oil jars, or any other cloſe veſſel, mixing them with dry ſand, by which method they will keep good ſix months. The putting them in the oven is to dry the germ, and prevent their ſprouting; but if the oven be too hot it will cauſe them to ſhrink.

All the other ſorts are propagated in the ſame way, but as few of the ſorts produce fruit in England, their nuts muſt be procured from North America; they ſhould be gathered when fully ripe, and put up in dry ſand, to preſerve them in their paſſage to England: when they arrive here, the ſooner they are planted the greater chance there will be of their ſucceeding; when the plants come up, keep them clean from weeds; and if they ſhoot late in the autumn, and their tops are full of ſap, cover them with mats, or other light covering, to prevent the early froſts from pinching their tender ſhoots, which often cauſes them to die down a conſiderable length before the ſpring; but if they are ſcreened from theſe early froſts, the ſhoots will become firmer and better able to reſiſt the cold. Some of the ſorts being tender whilſt young, require a little care for the two firſt winters, but afterwards will be hardy enough to reſiſt the greateſt cold of this country. The black Virginia Walnut is full as hardy as the common ſort. They all require the ſame culture as the common Walnut; but grow beſt in a ſoft loamy ſoil, not too dry; and where there is a depth of ſoil for their roots to run down. The Hickery, when young, is very tough and pliable, ſticks of it therefore are much eſteemed; but the wood, when large, being very brittle, is not of any great uſe. The Black Virginia Walnut is the moſt valuable.

[In ſetting the nuts, Dr. Hunter recommends drills to be made at one foot aſunder, and two inches and a half deep, into which put the nuts four inches apart. Mr. Evelyn adviſes ſome furze to be chopped among them, to preſerve them from vermin. The ſpring following the plants will come up; and in two years they will be of a proper ſize to plant out in the nurſery. There, having ſhortened their tap-roots, plant them in rows two feet and a half aſunder, and at the diſtance of a foot and a half in the rows. Here they may remain till they are of a proper ſize for their final planting. If they are to be planted in fields they ſhould be out of the reach of cattle, before they come out of the nurſery: but theſe ſhould be removed with great caution; the knife ſhould be very ſparingly applied to the roots; and they ſhould be planted as ſoon as poſſible after taking up, ſoon after the fall of the leaf.

In raiſing the Walnut for fruit, Mr. Boutcher recommends flat ſtones, tile-ſherds or ſlates to be buried eight inches deep, under the nuts when they are ſet: the diſtance to be ſix inches, and the depth two inches. After two ſeaſons remove them early in autumn, and plant them fourteen or ſixteen inches aſunder, on the ſame kind of bottom, or any hard rubbiſh, to prevent them from ſtriking downwards, and to induce them to ſpread their roots on the ſurface. At the end of two or three years repeat this again, making the bedding at the depth of fifteen or ſixteen inches, and planting them two feet aſunder: here let them remain three or four years, when they will be fit to remove for the laſt time. The ſoil for fruit ſhould be dry and ſound, with a ſandy, gravelly or chalky bottom. The trees managed in this way, will have higher-flavoured fruit that ripens earlier, and they will bear a plentiful crop twenty years ſooner than in the uſual method. The beſt manure for them is aſhes, ſpread the beginning of winter, the land having been firſt ploughed or dug.

Since plants raiſed from the nuts of the ſame tree will bear fruit of very different quality, Mr. Boutcher adviſes the inarching one of the beſt ſorts on the common Walnut-tree; by which method the planter is both ſecure of his ſort, and he will have fruit in one-third of the time that he would obtain it from the nut. This however can be practicable only in few ſituations. The time in which I have experienced a Walnut-tree to bear from the nut is about twenty years.

If theſe trees be intended to form a wood, for which purpoſe they anſwer extremely well, Dr. Hunter adviſes to take them out of the nurſery when they are three or four feet high, and to plant them three yards aſunder; thinning them when their heads begin to interfere. Thus theſe large and branching trees will be drawn up with beautiful ſtems to a great height.

For raiſing timber, Mr. Boutcher recommends to ſet the nuts in february, in drills five feet aſunder, eighteen inches diſtant in the rows, and two or three inches deep; taking up every other plant after two years. They may ſtand thus four or five years longer, the ground between being cropped with Turneps, Carrots, Beans, Cabbages, or other kitchen-garden plants. From time to time the leaſt promiſing may be cut off below ground, when they are near touching each other, till they are left at the diſtance of about thirty feet.

The ſize to which the Walnut will attain may be judged of from what Scamozzi the architect ſays, as Mr. Evelyn reports; that he ſaw a table of Walnut tree in Lorrain, all of one piece, which was twenty-five feet in breadth, of competent length and thickneſs.

Jujuba. See *Rhamnus.*
Juncago. See *Triglochin.*
Juncaria. See *Ortegia.*
Juncello accedens. See *Schoenus.*
Juncellus. See *Scirpus.*
Junco affinis. See *Juncus* and *Schoenus.*
Juncoides. See *Juncus.*
Juncoidi affinis. See *Scheuchzeria.*]

JUNCUS, (*a jungendo, from its utility in cloſing joints.*) *Lin. gen. n.* 437. *Reich. n.* 471. *Schreb. n.* 590. *Tournef.* 127. *Juſſ.* 44. *Gærtn. t.* 15.

Claſſ. 6. 1. Hexandria Monogynia.

Nat. order of *Tripetaloideæ.—Junci,* Juſſ.

GENERIC CHARACTER.

Cal. *Glume* two-valved. *Perianth* ſix-leaved: leaflets oblong, acuminate, permanent.

Cor. none, unleſs the coloured perianth be regarded as ſuch.

Stam. *Filaments* ſix, capillary, very ſhort. *Anthers* oblong, erect, the length of the perianth.

Pist. *Germ* three-cornered, acuminate. *Style* ſhort, filiform. *Stigmas* three, long, filiform, villoſe, bent in.

Per. *Capſule* covered, three-ſided, three or one-celled, three-valved.

Seeds ſome, roundiſh.

Obs. Juncus, *Mich. has a three-celled capſule, with many ſeeds.*

Juncoides, *Mich. has a one-celled capſule, with three ſeeds.*

Some of the ſpecies have only three ſtamens.

ESSENTIAL CHARACTER.

Cal. ſix-leaved. *Cor.* none. *Capſ.* one-celled.

SPECIES.

* *With naked culms.*

1. Juncus acutus. *Prickly large Sea Ruſh.*
Lin. ſpec. 463. *Reich.* 2. 93. *Hudſ. angl.* 148. *Wither. arr. ed.* 3. 346. *Scop. carn. n.* 430. *Sauv. monſp.* 9. *Guett. ſtamp.* 2. 412. *Villars dauph.* 2. 229. *Allion. pedem. n.* 2071.
Juncus acutus, capitulis Sorghi. *Bauh. hiſt.* 2. 520. *Mor. hiſt.* 3. 232. *ſ.* 8. *t.* 10. *f.* 15. *Scheuch. agr.* 338. *Raii hiſt.* 1302. *ſyn.* 431. *Bauh. prodr.* 21. 2. *theat.* 173.
J. maritimus cap. Sorghi. *Park. theat.* 1193. 4. *Barrel. ic.* 203. 2.
Culm round almoſt naked, panicle conglomerate with almoſt equal branches, involucre two-leaved ſpinoſe, ſeeds ovate.

2. Juncus maritimus. *Sea Hard Ruſh.*
J. acutus β. *Lin. ſpec.* 464. *Hudſ. angl.* 148. *Wither. arr.* 346. *Guett. ſtamp.* 2. 412.
J. acutus marit. anglicus. *Raii hiſt.* 1303. *Mor. ſ.* 14. *Park.* 1193. 7. *Scheuch. agr.* 340.
Culm round almoſt naked, panicle with unequal branches, one twice as long as the reſt, involucre ſpinoſe, ſeeds lanceolate.

3. Juncus conglomeratus. *Round-headed Ruſh.*
Lin. ſpec. 464. *Reich.* 2. 94. *fl. ſuec. n.* 298. *Hudſ. angl.* 148. *Wither. arr. ed.* 3. 345. *Lightf. ſcot.* 183. *Relh. cant. n.* 269. *Hall. helv. n.* 1312. *Scop. carn. n.* 427. *Gmel. ſib.* 1. 70. *Neck. gallob.* 171. *Pollich. pal. n.* 344. *Leers herborn. n.* 361. *t.* 13. *f.* 1. *Villars dauph.* 2. 229. *Krock. ſileſ. n.* 541. *Fl. dan. t.* 1094. *Ger. prov.* 238. 2.
Juncus. *Camer. epit.* 780. *Matth.* 1036.—lævis. *Bauh. hiſt.* 2. 520. 2.—panicula non ſparſa. *Bauh. pin.* 12. *theat.* 183. *Mor. hiſt. ſ.* 8. *t.* 10. *f.* 7.—panic. conglomerata. *Scheuch. agr.* 343.—glomerato flore. *Lob. ic.* 84. *Park. theat.* 1191. 3.—vulgaris panic. compactiore. *Raii hiſt.* 1304. *ſyn.* 432.
Culm naked ſtiff, head lateral.

4. Juncus effuſus. *Common Soft Ruſh.*
Lin. ſpec. 464. *Reich.* 2. 94. *fl. ſuec. n.* 299. *Retz. obſ.* 1. 16. *n.* 35. *Hudſ. angl.* 148. *Wither. arr. ed.* 3. 345. *Lightf. ſcot.* 183. *Relh. cant. n.* 270. *Hall. helv. n.* 1311. β. *Scop. carn. n.* 428. *Neck. gallob.* 170. *Pollich pal. n.* 345. *Leers herborn. n.* 262. *t.* 13. *f.* 2. *Fl. dan. t.* 1096. *Villars dauph.* 2. 230. *Krock. ſileſ. n.* 343.
Juncus lævis. *Dod. pempt.* 605. 2. *Tabern.* 249. *Lob.* 43. 2. *Ger. emac.* 35. 1.—panic. ſparſa, major. *Bauh. pin.* 12. *theat.* 182. *Scheuch. agr.* 341. *Mor. hiſt. ſ.* 8. *t.* 10. *f.* 4. *Park. theat.* 1191. 2.—vulgaris, pan. ſparſa. *Raii hiſt.* 1304. *ſyn.* 432.
Culm naked ſtiff ſmooth, panicle lateral ſcattered cloſe, root-ſcales opaque.

[5. Juncus tenax. *Common Hard Ruſh.*
Soland. M. S. Forſt. auſtral. n. 514.
J. effuſus β. *Hudſ. angl.* 149.
J. glaucus. *Sibth. oxon. n.* 341.—J. inflexus. *Wither. arr.* 345. *Relh. cant. n.* 271.
J. acutus. *Ger. emac.* 35. 4. *Raii ſyn.* 432.—vulgaris. *Park. theat.* 1193.
Culm naked ſtiff ſtriated, panicle lateral thin, root-ſcales ſhining.

6. Juncus inflexus. *Bending Soft Ruſh.*
Lin. ſpec. 464. 4. *Reich.* 2. 95. *Sauv. monſp.* 9. *n.* 122.
J. acumine reflexo, major. *Bauh. pin.* 12. *theat.* 184. *Mor. hiſt.* 3. 233. *ſ.* 8. *t.* 10. *f.* 25. *Barrel. ic.* 204.
Culm naked, membranaceous and curved in at top, panicle lateral.

7. Juncus filiformis. *Leaſt Soft Ruſh.*
Lin. ſpec. 465. *Reich.* 2. 95. *fl. ſuec. n.* 300. *Smith ſpicil.* 2. *t.* 3. *Hudſ. angl.* 149. *Wither. arr. ed.* 3. 346. *Hall. helv. n.* 1313. *Leers herborn. n.* 264. *t.* 13. *f.* 4. *Allion. pedem. n.* 2075.
J. lævis, panicula ſparſa, minor. *Scheuch. agr.* 347. *t.* 7. *f.* 11. *Bauh. pin* 12. *theat.* 183.
J. parvus, calamo ſupra paniculam compactam longius producto. *Raii hiſt.* 1305. *ſyn.* 432. *Pluk. phyt. t.* 40. *f.* 8.
Culm naked filiform nodding, panicle lateral.

8. Juncus trifidus. *Three-flowered Ruſh.*
Lin. ſpec. 465. *ſyſt.* 340. *Reich.* 2. 96. *fl. lapp.* 119. *ſuec. n.* 301. *Hudſ. angl.* 149. *Wither. arr. ed.* 3. 345. *Lightf. ſcot.* 183. *fig. Hall. helv. n.* 1315. *Scop. carn. n.* 432. *Fl. dan. t.* 107. *Villars dauph.* 2. 231. *Krock. ſileſ. n.* 546.
J. acumine reflexo, (minor &) trifidus. *Bauh. pin.* 12. *prodr.* 22. 2. *theat.* 185. *Park. theat.* 1195. 3.
Juncoides alpinum trifidum. *Scheuch. agr.* 325.
Juncus trifidus. *Bauh. hiſt.* 2. 521. 1. *Raii hiſt.* 1305.
Culm naked, leaves and three flowers terminating.

9. Juncus ſquarroſus. *Moſs Ruſh* or *Gooſe Corn.*
Lin. ſpec. 465. *ſyſt.* 340. *Reich.* 2. 96. *fl. ſuec. n.* 302. *lapp. n.* 121. *Hudſ. angl.* 149. *Wither. arr. ed.* 3. 346. *Lightf. ſcot.* 184. *Relh. cant. n.* 272. *Sibth. oxon. n.* 342. *Hall. helv. n.* 1317. *Neck. gallob.* 171. *Pollich pal. n.* 346. *Fl. dan. t.* 430. *Villars dauph.* 2. 232. *Krock. ſileſ. n.* 545. *t.* 47.
J. montanus paluſtris. *Raii hiſt.* 1303. *ſyn.* 432.
Gramen junceum, foliis & ſpica junci. *Bauh. pin.* 5. *prodr.* 12. 1. *theat.* 76. 2. *Mor. hiſt.* 3. 228. *ſ.* 8. *t.* 9. *f.* 13.
Gr. junc. ſemine acuminato. *Loeſel. pruſſ.* 15. *t.* 29.
Gr. junc. maritimum. *Lob. ic.* 18. *Ger.* 12. 1. *emac.* 22. 9.—majus. *Park. theat.* 1270. 6.

J. Matthioli. *Bauh. hiſt.* 2. 521. 2.
Culm naked, leaves briſtle-ſhaped, heads glomerate leafleſs.

10. Juncus punctorius.
Lin. ſyſt. 340. *ſuppl.* 208.
Culm naked round, leaf round jointed mucronate, panicle glomerate.

** *With leafy culms.*

11. Juncus nodoſus.
Lin. ſpec. 466. *Reich.* 2. 96. *Gron. virg.* 15. 2. 53. *Pluk. phyt. t.* 92. *f.* 9.
Gramen junceum virginianum, calyculis paleaceis, bicorne. *Mor. hiſt.* 3. 228. *ſ.* 8. *t.* 9. *f.* 15.
Leaves knotted-jointed, petals mucronate.

12. Juncus compreſſus. *Leſſer jointed Ruſh.*
Relh. cant. n. 273. *Sibth. oxon. n.* 343.
J. articulatus α. *Lin. ſpec.* 465.—aquaticus. *ſyſt.* 340. *Reich.* 2. 97. *fl. ſuec. n.* 303. *lapp. n.* 120. *Hudſ. angl.* 149. α. *Wither. arr.* 347. *var.* 1. *Engl. bot. t.* 238. *Hall. helv. n.* 1322. *Scop. carn. n.* 431. *Pollich pal. n.* 347. *Leers herborn. n.* 265. *t.* 13. *f.* 6. *Fl. dan. t.* 1097. *D'Aſſo arag. n.* 318. *Gmel. ſib.* 1. 69. *Villars. dauph.* 2. 233. *Krock. ſileſ. n.* 547.
J. aquaticus. *Allion. pedem. n.* 2089.
J. iſthmiacus. *Neck. gallob.* 168.
Gramen junceum, folio articulato, aquaticum. *Bauh. pin.* 5. *prodr.* 12. 1. *theat.* 76. 2. *Scheuch. agr.* 331. *Raii hiſt.* 1307.—aquaticum. *Park. theat.* 1270. 5.
Gr. aquaticum. *Ger.* 12. 1. *emac.* 22. 9.
J. fol. articuloſis, flor. umbellatis. *Tournef. inſt.* 247. *Raii ſyn.* 433.
Gr. junc. artic. paluſtre humilius, utriculis frequenter donatum. *Mor. hiſt.* 3. 227. *ſ.* 8. *t.* 9. *f.* 2.
J. foliaceus capſulis triangulis. *Bauh. hiſt.* 2. 521. 2.
Culm leafy decumbent, leaves compreſſed knotted-jointed, panicle compound.

13. Juncus nemoroſus. *Greater jointed Ruſh.*
Sibth. oxon. n. 344.
J. articulatus. *Relh. cant. n.* 274. *Lightf. ſcot.* 184. β. *Lin. ſpec.* 465. *Pollich pal. n.* 347.—ſylvaticus. *Lin. ſyſt.* 340. *Reich.* 2. 97. *Hudſ. angl.* 150. *Wither. arr. var.* 2. *Hall. helv. n.* 1323.
J. ſylvaticus. *Allion. pedem. n.* 2088. *Villars dauph.* 2. 232. *Krock. ſileſ. n.* 547. β.
J. nemoroſus folio articuloſo. *Tourn. inſt.* 247. *Raii ſyn.* 433.
Gr. junc. fol. artic. cum utriculis. *Bauh. prodr.* 12. *theat.* 77. *Scheuch. agr.* 333. *Raii hiſt.* 1307. 4. *Mor. hiſt. ſ.* 8. *t.* 9. *f.* 1.
Culm leafy erect, leaves roundiſh knotted-jointed, panicle ſuperdecompound.

14. Juncus uliginoſus. *Leaſt jointed Ruſh.*
Roth. fl. germ. 405. *Sibth. oxon. n.* 345. *Hall. helv. n.* 1320.
J. viviparus. *Relh. cant. n.* 275.
J. articulatus γ. *Hudſ. angl.* 150. *Wither. arr. var.* 3.
Gr. junc. capſulis triangulis minimum. *Raii hiſt.* 1307. *ſyn.* 434. *Mor. hiſt. ſ.* 8. *t.* 9. *f.* 3.
β. viviparus. *Mor. hiſt. t.* 9. *f.* 4.
Culm leafy, flowers in bundles, bundles proliferous, leaves briſtle-ſhaped, jointed-knotted.

15. Juncus alpinus. *Alpine jointed Ruſh.*
Villars dauph. 2. 233. *Hall. helv. n.* 1321.
J. articulatus γ. *Lin. ſpec.* 465. *Reich.* 2. 97.
J. alp. fol. articuloſo. *Scheuch. agr.* 333.
Gr. junc. fol. artic. ſylvaticum. *Bauh. pin.* 5. *n.* 8.
Culm leafy, leaves ſeſſile, jointed-knotted, panicle ſimple, glumes awned.

16. Juncus bulboſus. *Bulbous Ruſh.*
Lin. ſpec. 466. *ſyſt.* 341. *Reich.* 2. 97. *fl. ſuec. n.* 304. *Hudſ. angl.* 150. *Wither. arr.* 348. *Lightf. ſcot.* 185. *Relh. cant. n.* 276. *Hall. helv. n.* 1318. *Fl. dan. t.* 431. *Pollich. pal. n.* 348. *Leers herborn. n.* 266. *t.* 13. *f.* 7. *Villars dauph.* 2. 233. *Krock. ſileſ. n.* 550.
J. compreſſus. *Jacqu. vind.* 235.
J. repens apocarpos minor. *Barrel. ic.* 114.—& Sorghi capitulis & Milii capitulis. 747. 1, 2.
J. parvus cum pericarpiis rotundis. *Bauh. hiſt.* 2. 522. 3. *Raii ſyn.* 433.
Gr. junc. junci ſparſa panicula. *Mor. hiſt.* 3. 227. *ſ.* 8. *t.* 9. *f.* 11.
Leaves linear, channelled, capſules blunt.

17. Juncus bufonius. *Toad Ruſh.*
Lin. ſpec. 466. *Reich.* 2. 98. *fl. ſuec. n.* 305. *lapp. n.* 122. *Gærtn. fruct.* 1. 53. *Hudſ. angl.* 150. *Wither. arr. ed.* 3. 348. *Lightf. ſcot.* 185. *Relh. cant. n.* 277. *Hall. helv. n.* 1319. *Scop. carn. n.* 433. *Pollich. pal. n.* 349. *Neck. gallob.* 168. *Leers. herborn. n.* 267. *t.* 13. *f.* 8. *Fl. dan. t.* 1098. *D'Aſſo. arag. n.* 319. *Villars dauph.* 2. 234. *Krock. ſileſ. n.* 551. *Gmel. ſib.* 1. 67. *n.* 30. *Weig. obſ.* 29.
J. paluſtris humilior erectior. *Tourn. inſt.* 246. *Raii ſyn.* 434.
Gr. junc. bufonium. *Tabern.* 225.
Gr. buf. erectum latifolium & anguſtifolium majus & minus. *Barrel. ic.* 263, 264.
Gr. nemoroſum, calyculis paleaceis. *Bauh. pin.* 7. *theat.* 100. *Mor. hiſt. ſ.* 8. *t.* 9. *f.* 14.—erectum. *Scheuch. agr.* 327.
Gr. junceum. *Ger.* 4. 4. *emac.* 4. 4.—parvum ſ. holoſteum Matthioli, & Gramen bufonium Flandrorum. *Park. theat.* 1190. 8. & 1270. 11. *Raii hiſt.* 1309.
β. Gr. nemoroſum, calyculis paleaceis, repens. *Scheuch. agr.* 329. *Bauh. pin.* 99.
γ. Gr. nem. calyc. pal. ſpecies altera procerior. *Scheuch. agr.* 328. *Leers var.* β.
δ. Gr. bufon. erect. &c. *Barr. ic. ut ſupra.*
ε. Gr. holoſteum alpinum minimum. *Bauh. pin.* 7. *prodr.* 14. *theat.* 101. *hiſt.* 2. 510.
Gr. juncoides min. anglo-britannicum. *Raii ſyn.* 434. *Hudſ. angl.* 151. β.
Culm dichotomous, leaves angular, flowers ſolitary, ſeſſile.

18. Juncus ſtygius.
Lin. ſpec. 467. *Reich.* 2. 99. *Smith ic. ined.* 3. 55.
Leaves briſtle-ſhaped, ſomewhat depreſſed, peduncles in pairs, terminating, glumes ſolitary, ſubbiflorous.

19. Juncus Jacquini.
Lin. ſyſt. 341. *Reich.* 2. 99. *Allion. pedem. n.* 2081.
J. biglumis. *Lin. mant.* 63. *Jacqu. vind.* 237. *t.* 4. *f.* 2. *auſtr.* 3. *t.* 221. *Hall. helv. n.* 1316.
J. effuſus α. *Lin. ſpec.* & *ſyſt.* *Reich.* β. *Lin. ſuec. cum ſynon.*
J. alpinus capitulo glomerato & nigro ſplendente. *Scheuch. it.* 1. 40. *t.* 5. *f.* 2.
Juncoides alpinum, floſculis junci glomeratis atrofuſcis. *Scheuch. agr.* 323. *t.* 7. *f.* 9.
Leaf awl-ſhaped, head terminating, four-flowered or thereabouts.

20. Juncus biglumis.
Lin. ſpec. 467. *Reich.* 2. 99. *amoen.* 2. 266. *t.* 3. *f.* 3. *fl. ſuec. n.* 307. *Fl. dan. t.* 120.
Leaf awl-ſhaped, glume two-flowered, terminating.

21. Juncus triglumis.
Lin. ſpec. 467. *Reich.* 2. 100. *fl. ſuec. n.* 306. *lapp. n.* 115. *t.* 10. *f.* 5. *Hall. helv. n.* 1314. *Fl. dan. t.* 132. *Gmel. ſib.* 1. 67. *n.* 29. *Allion. pedem. n.* 2080.
J. exiguus montanus mucrone carens. *Bauh. pin.* 12. *prodr.* 22. *theat.* 183. *Rudb. elyſ.* 1. 103. *f.* 8.
Leaves flat, glume three-flowered, terminating.

22. Juncus piloſus. *Small hairy Wood Ruſh.*
Lin. ſpec. 468. *Reich.* 2. 100. *fl. ſuec. n.* 308. *Gærtn. fruct.* 1. 54. *Hudſ. angl.* 151. *Wither. arr.* 349. *Curt. lond.* 5. 25. 345. *Hall. helv. n.* 1325. *Pollich pal. n.* 351. *Neck. gallob.* 169. *Leers herborn. n.* 268. *t.* 13. *f.* 10.
Gramen nemoroſum hirſutum. *Lob. ic.* 16. *Ger.* 17. 1. *emac.* 19. 1.—majus. *Park. theat.* 1184. 1. —latifolium minus. *Bauh. pin.* 7.—vulgare. *Raii ſyn.* 416.
Leaves flat, hairy, corymb ſomewhat branched, flowers ſolitary.

23. Juncus ſpadiceus.
Allion. pedem. n. 2083. *Villars dauph.* 2. 236. *Hall. helv. n.* 1326. *Scheuch. agr.* 312. *t.* 6.

I. piloſus γ. *Lin. ſpec.*

Leaves flat, hairy from the ſheath, flowers very ſmall, corymbed, ſolitary, ſhortly awned.

24. Juncus ſylvaticus. *Great hairy Wood Ruſh.*
Hudſ. angl. 151. *Curt. lond.* 5. 26. 344. *Hall. helv. n.* 1324. *Fl. dan. t.* 441.
J. maximus. *Wither. arr. ed.* 3. 349.
I. piloſus δ. *Lin. ſpec.*
Gramen nemoroſum hirſutum latifolium majus. *Scheuch. agr.* 317. *Bauh. prodr.* 15. 1. *theat.* 102.—maximum. *Raii ſyn.* 416.
G. luzulæ maximum. *Bauh. hiſt.* 2. 403. 2.
β. I. nemoroſus. *Pollich pal. n.* 352. *Hall. helv. n.* 1327. J. piloſus ε. *Lin. ſpec.*

Leaves flat, hairy, corymb decompound, flowers in bundles, ſeſſile.

25. Juncus niveus. *White-flowered Ruſh.*
Lin. ſpec. 468. *Reich.* 2. 101. *Hall. helv. n.* 1328. *Scop. carn. n.* 436. *Leers herborn. n.* 269. *t.* 13. *f.* 6?
Juncoides montanum nemoroſum, flore niveo. *Scheuoh. agr.* 320. *t.* 7. *f.* 7.
Gramini luzulæ affine, flore albo. *Bauh. hiſt.* 2. 492.
Gr. hirſutum anguſtifolium minus, paniculis albis. *Bauh. pin.* 7. *theat.* 106. *Mor. hiſt. ſ.* 8. *t.* 9. *f.* 39.

Leaves flat, ſomewhat hairy, corymbs ſhorter than the leaf, flowers in bundles.

26. Juncus campeſtris. *Hairy field Ruſh.*
Lin. ſpec. 468. *Reich.* 2. 101. *fl. ſuec. n.* 309. *Hudſ. angl.* 152. *Wither. arr. ed.* 3. 350. *Curt. lond.* 2. 19. 140. *Relh. cant. n.* 279. *Hall. helv. n.* 1330. *Scop. carn. n.* 434. *Pollich. pal. n.* 353. *Gmel. ſib.* 1. 64. *Leers. herborn. n.* 270. *t.* 13. *f.* 5. *Neck. gallob.* 170. *Gron. virg.* 38. *Villars dauph.* 2. 237.
J. villoſus capitulis pſyllii. *Tournef. inſt.* 246. *Lin. lapp. n.* 126.
Juncoides villoſum capit. pſyllii. *Scheuch. agr.* 310.
Gr. hirſ. capit. pſyllii. *Bauh. pin.* 7. *prodr.* 15. 2. *theat.* 103. *Mor. hiſt. ſ.* 8. *t.* 9. *f.* 4.
Gr. exile hirſ. cyperoides. *Lob. ic.* 15. *Ger.* 16. 2. *emac.* 17. 2.
Gr. nemoroſum hirſ. minus anguſtifolium. *Park. theat.* 1185. 6.
Gr. nemor. hirſ. vulgare. *Raii ſyn.* 416.
β. *Lin. lapp. n.* 127. *t.* 10. *f.* 2.
γ. Juncoides hirſ. capitulo glomerato. *Sch. agr.* 312. *Mor.* 8. 9. 1. *Bauh. theat.* 104.
δ. *Mich. gen.* 42.
ε. J. latifolium alpinum glabrum, panic. ſublutea ſplendente. *Sch. agr.* 314. *Hall. helv. n.* 1329.
ζ. Gr. hirſ. elatius, panic. juncea compacta. *Raii ſyn.* 416. *Hudſ. angl.* β. *Wither. arr. var.* 2. *Ger.* 16. 1. *Park.* 1186. *Bauh. theat.* 104. *Bauh. hiſt.* 2. 468. 2. *Mor.* 8. 9. *row.* 1. *f.* 1. *left.*
η. *Mich. gen.* 42.

Leaves flat, ſomewhat hairy, ſpikes ſeſſile and peduncled.

27. Juncus ſpicatus. *Spiked Ruſh.*
Lin. ſpec. 469. *Reich.* 2. 102. *fl. ſuec. n.* 310. *lapp. n.* 125. *t.* 10. *f.* 4. *Lightf. ſcot.* 187. *Wither. arr. ed.* 3. 350. *Dickſ. hort. ſicc.* 33. *Fl. dan. t.* 270.
J. alpinus latifolius, panicula racemoſa nigricante pendula. *Till. piſ.* 91. *Mich. gen.* 42. *n.* 7.

Leaves flat, ſpike racemed, nodding.

28. Juncus ſerratus.
Lin. ſyſt. 341. *ſuppl.* 208.

Leaves enſiform, flat, ſerrate, hoary underneath, ſheaths of the panicle awl-ſhaped, perfoliate.

29. Juncus grandiflorus.
Lin. ſyſt. 341. *ſuppl.* 209.

Leaf round, culm one-flowered, flower upright, ſingle, naked.

DESCRIPTIONS, *&c.*

The Ruſhes have a ſimple graſſy ſtem, without leaves or knots, or elſe knotty, with a ſheathing leaf at each knot. Flowers terminating or lateral, corymbed or panicled, with the branchlets ſpathaceous at the baſe[a]. Theſe plants agree with the Graſſes in the glumes of their flowers, and the ſheaths of their leaves; they differ in having the ſtems filled with pith, whereas in Graſſes the ſtem it is well known is hollow. The Ruſhes form an intermediate link between the Graſſes, and ſome of the Liliaceous plants, as Anthericum, &c. They form naturally two diviſions, one without leaves, allied to Scirpus, &c., and the other with leafy ſtems. Some authors have made two genera of theſe. But all claſſical botanical writers, ſays Dr. Smith, have judiciouſly preſerved this very natural genus entire, notwithſtanding the capſule is in ſome ſpecies one-celled, in others three-celled: and who can help wiſhing that botaniſts had not divided many natural genera on more trivial grounds.

Probably varieties have been exalted into ſpecies. Monſ. Reynier is of opinion that Juncus effuſus, inflexus, conglomeratus and filiformis are all one ſpecies; and that J. compreſſus, nemoroſus, uliginoſus, and alpinus are another[b].

1. Root perennial. Leaves round and hard. Culm round, hard and ſmooth, finiſhing in a winged feathered membrane, and bearing at top ſeveral round lateral ſpikes, ſome ſeſſile, and others peduncled; the ſtem continues above theſe, and ends in a hard pungent point[c]. The panicle is crowded, cloſe, from two to three inches long. Involucre, the ſheath of the outer leaf, from an inch and half to two inches in length, terminating in a ſtiff pungent leaf, an inch or an inch and half long: that of the inner leaf about one inch long, terminating in a ſharp point about half an inch long[d].

Native of France, Italy, Carniola, Wales on the coaſt of Merionethſhire.

2. Panicle not ſpreading, from three to ſix inches long, conſiſting of two principal branches, one of which is from three to upwards of ſix inches long, the other very ſhort, immediately dividing into leſſer branches. Involucre the ſheath of the outer leaf about one inch long, terminating in a very ſharp-pointed pungent leaf, from three to upwards of ſix inches long; that of the inner about half an inch long[e].

Mr. Woodward, who is doubtful whether it be not a variety of J. inflexus, ſays that it grows in tufts near ſix feet high, and that the leaves are extremely rigid and ſharp. It is found on the weſt coaſt of Wales; in the ſalt marſhes about Maldon, Eſſex; on the coaſt of Norfolk and Lancaſhire.]

Theſe Sea Ruſhes are planted on the ſea banks in Holland. The roots running deep into the ſand, and matting very much, ſo as to hold it together. In the ſummer, when they are fully grown, they cut them, tie them up in bundles, dry them, and work them into baſkets, &c. On the Maeſe, &c. they grow upwards of four feet high.

3. [Root perennial, horizontal, cloſe, covered with ovate ſcales; fibres filiform, very long. Culms from one to two feet in height, upright, round, ſmooth: ſheaths at the baſe ſtriated, blunt, leafleſs, awned, the uppermoſt three times as long as the reſt. Root-leaves few, very like the culms. Head of flowers roundiſh, ſolitary, ſeldom two together, from the fiſſure of the culm, burſting out below the top. Peduncles ſhort, numerous, crowded, ſubdivided, with a little ſheath at the baſe, and a lanceolate-acuminate ſcalelet by way of bracte. The two calycine ſcales ſmall. Stamens conſtantly three, never ſix. Seeds obconical, ſharpiſh, white[f]: according to Withering, kidney-ſhaped. Native of Europe, on moiſt meadows and heaths.

4. Root, culms, root-leaves and peduncles as in the preceding, only larger. Culm three feet high, thicker, ſofter to the touch, eaſily broken, filled with a cloſe pith. Panicle lateral, more or leſs ſcattered. Peduncles cluſtered, unequal, branched; with oblong, awned bractes. Flowers browniſh. Leaflets of the (perianth or) corolla equal. Capſule obovate, ſubtrigonal, very blunt, the length of the perianth. Seeds fulvous[g].

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[a] Juſſieu.

[b] Memoires, vol. 1.

[c] Villars.

[d] Scheuchzer.

[e] Ibid.

[f] Leers.

[g] Ibid.

The looſe panicle at once diſtinguiſhes this from the preceding[h]. The flowers have only three ſtamens[i].

Native of Europe, in wet meadows, marſhes, &c. They flower in july and auguſt.

Theſe are uſed ſometimes for making little baſkets. The pith of both makes wicks for watch-lights, and toys.]

Theſe with the hard ruſh grow common on moiſt, ſtrong, uncultivated lands in moſt parts of England, and conſume the herbage where they are ſuffered to remain. The beſt method of deſtroying them is, to fork them up clean by the roots in july, and after having let them lie a fortnight or three weeks, to put them in heaps, and burn them gently: the aſhes will be good manure for the land. But to prevent their growing again, and to make the paſture good, the land ſhould be drained; and then, if the roots be annually drawn up, and the ground kept duly rolled, the Ruſhes may be ſubdued.

[5. Root perennial. Culms glaucous green, with the ſheaths at the baſe of a dark red cheſtnut colour, ſpear-ſhaped, but blunt at the end. Panicle bay-coloured, more upright and diffuſe than in the preceding[k]. Stamens ſix.

The hard Ruſh is common in paſtures and by road-ſides, in a moiſt ſoil; in England, Madeira, New Zealand, &c.

6. Roots tufted, ſlightly compreſſed, with a black bark, and abundance of fibres. Culms three quarters of a yard in height, with a dark-red ſhining ſheath at the baſe, and curved at top; below the curvature, for almoſt a foot in length, it puts forth on one ſide, from a cleft in the culm, many peduncles, ſuſtaining abundance of flowers[l].

Sauvages obſerves, that the top of the culm is flatted and arched over ſo as to cover the panicle.

This has been taken, by many authors, for our common Hard Ruſh.

Native of the South of Europe, in a ſtrong ſoil, ſubject to wet, but where the water is clear.

7. Root perennial, horizontal, creeping; covered with ſmooth, brown, ſtriated, imbricated ſcales; fibres filiform, but little branched, downy. Culms about a foot high, nearly erect, weak, ſtriated, ſmooth; at the baſe clothed with oblong, ſheath-like, ſtriated, brown, obtuſe ſcales, ſome of which frequently end in a little point, flowering about the middle; at the top more or leſs incurved, and ſharp-pointed. Leaves ſcarcely any, except the barren ſtems be ſo called. Panicle lateral, about the middle of the ſtem, ſomewhat corymboſe, of about five to eight flowers, of a pale whitiſh green. Sheath briſtle-ſhaped, ſcarcely longer than the panicle. Bractes two under each flower, ovate, concave, membranaceous. Peduncles moſtly ſimple, bearing one flower, rarely more, triangular, furniſhed with a few ſheath-like ſcales at their baſe. Calycine leaflets ovate-lanceolate, acute, with a membranous edge, green on the back, ſtriated, permanent, and at length becoming tawny. Stamens ſhorter than the calyx. Germ ſmall, roundiſh: ſtigmas downy, permanent. Capſule roundiſh, red-brown, poliſhed, three-valved, three-celled: the partitions oppoſite to the valves. Seeds ſmall, numerous[m].

Native of Lapland, Switzerland, Germany, Italy, Britain, on turf bogs. Dr. Smith found it on the aſcent of Mont Cenis from Italy, and on the Col de Balm, near Chamouny in Savoy. Mr. Newton, in Weſtmoreland near Ambleſide. Mr. Jackſon, at Windermoor in Cartmel. Mr. Dickſon near Derentwater in Cumberland; and on Ben Lawers in Scotland.

8. Root perennial, woody, ſtriking deep, creeping, with blackiſh fibres, putting forth cloſe tufts of ſtems and leaves. Culms a ſpan or more in length, round, ſtiffiſh, briſtle-ſhaped, upright, with lanceolate, browniſh ſheaths at the baſe, accompanied by one, two or three briſtle-ſhaped leaves, involving the culm in their ſheaths. The culm is cloven at top into two ſtipular leaflets, almoſt of the ſame length, and there is a third, much ſhorter, ſtretching out laterally. At the diviſions are one or two very ſmall ſcales, villoſe within, but ſmooth without. On the middle leaflet ſit two flowers on very ſhort peduncles, and a third adheres to the cleft, embraced by the ſecond and third leaflet. The outer leaflets of the flower are larger, ſhining, of a rufous bay colour; the inner are paler and ſmaller. Stigma trifid. Capſule ſubtriquetrous, acuminate, brown[n]. Dr. Withering ſays that the flowers are from one to four: and Lightfoot, that it varies with one, two and three axillary, and almoſt ſeſſile flowers; but that the ſpecimens he found had all ſingle flowers.

Native of Lapland, Denmark, Switzerland, France, Sileſia, Scotland, on the ſummits of the Highland mountains.

9. Root perennial. Stem upright, ſtiff, from eight to eighteen inches high. Root-leaves numerous, unequal in length; the longeſt near half the length of the culm, rigid and ſpreading. Panicle ſpiked, with unequal peduncles. Glumes at the baſe of the calyx, and the edges of the leaflets white. Capſule dark red or bay-coloured, ſhining[o].

Native of moſt parts of Europe, on mooriſh heathy ground, and turf-bogs: flowering in june and july. It indicates a barren ſoil, and the leaves lying cloſe to the ground elude the ſtroke of the ſcythe. Horſes are ſaid to eat it[p].

10. Culm two feet high and more, round, ſmooth. Root-leaves none; but only two membranes, the rudiments of leaves. A ſingle ſtem-leaf, like the culm, but a little longer, ſtiff, mucronate, pungent. Panicle terminating, cloſely conglomerate, of a few glomes ariſing from the glume. It is allied to J. articulatus, but all the parts are ſtouter, not to mention other circumſtances. Native of the Cape of Good Hope[q].

11. This reſembles J. articulatus very much, but the flowers are more collected in heads; the heads thinner, larger, and the branches of the panicle ſimple, not ſuperdecompound: but it is chiefly diſtinguiſhed by the petals being protracted into an awl-ſhaped point. Native of North America[r].

Retzius doubts whether Plukenet's figure belongs to this ſpecies[s].

12. Root perennial, horizontal, woody, round, fibroſe. Root-leaves more than a foot in length, cylindric-compreſſed, ſmooth, fiſtular, divided internally, knotted-jointed when dry. Culm from two to three feet high, upright, round, ſmooth, leafy, with four or five joints concealed by the ſheaths. Culm-leaves bifarious, alternate, ſpreading, ſtraight, very like the root-leaves. Sheaths long, ſlightly compreſſed, ſmooth, cloathing the culm above the middle; the loweſt leafleſs, blunt, awned. Panicle terminating. Peduncles few, alternate, upright, unequal, dichotomous-branched; the lower one having an awl-ſhaped, upright, floral leaf, almoſt the length of the panicle; the reſt bracted with lanceolate-acuminate ſcales. Flowers in a ſort of head, heaped, ſmall, axillary and terminating. Calycine leaflets ovate-acuminate, membranaceous. Petals awl-ſhaped, acute, browniſh, and then turning purpliſh. Capſule three-cornered, acuminate, purpliſh, longer than the petals[t].

Native of meadows and marſhes.

13. This differs, according to Leers, from the foregoing in having the leaves cylindric, higher than the culms; the panicle more branched, and ſuperdecompound; the heads many-flowered and larger; the flowers purple and ſhining; the petals extremely acute, the three inner ones a little ſhorter than the others. Native of moiſt woods.

In Engliſh Botany it is remarked, that there ſeems to be no reaſon for making the upland variety of this plant a diſtinct ſpecies; that it is certain at leaſt, that neither the leaves being more or leſs compreſſed, nor the panicle more or leſs compound, are permanent marks of diſtinction.

The marks given in that work are the following. Root creeping, perennial. Stems from aſcending erect, ſmooth, round, a foot or more in height, with a few, alternate, ſheathing, recurved, pointed leaves, cylindrical or compreſſed, hollow, divided by numerous tranſverſe partitions, which make the dried leaves appear jointed. Panicle terminal forked, more or leſs compound, the flowers from three to five or ſix together, ſeſſile, in little heads enveloped in membranous bractes. Calyx-leaves lanceolate, pointed, longer than the ſtamens. Style very ſhort, with three long downy ſtigmas. Capſule ſharply triangular, poliſhed brown.

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[h] Withering.
[i] Relhan.
[k] Withering.
[l] Bauh. theat.
[m] Smith ſpicil.
[n] Krocker.
[o] Haller, Withering, Lightfoot.
[p] Withering.
[q] Linn. ſuppl.
[r] Linn. ſpec.
[s] Obſ. 1. 16.
[t] Leers.

14. This differs from the two preceding in having either all the flowers or a few of them growing out into green and purple bundles of leaves [u].

The flowers in autumn are frequently viviparous, the germs ſhooting young leaves before the ſeeds are ripe, as in J. bulboſus.

The jointed Ruſh alſo frequently produces bunches of reddiſh leaves, inſtead of umbels of flowers, in bogs and ditches in the autumn. Theſe leaves ſeem to put on this appearance from ſome obſtruction in the growth of the plant, occaſioned by an inſect of the Coccus tribe [x].

Native of wet heaths and bogs: as Gamlingay heath, Bullington Green, Eynſham heath.

15. Root creeping. Leaves pointed, ſeldom jointed. Culms five or ſix inches high, terminating in a ſimple umbel of black ſhining flowers, with a hard lanceolate point. Capſule ſhort, and more blunt than in the preceding ſpecies [y].

Native of the Alps and the high mountains of Dauphiné.

Theſe four are probably varieties ariſing from ſituation.

16. Root perennial, horizontal, extremely fibroſe. Culm a ſpan or a foot in height, upright, ſomewhat leafy, ſmooth, compreſſed, convex on one ſide, flatter on the other, having two joints, the lower (ſometimes two) near the root, covered with ſheaths, the other below the panicle and naked. Leaves bifarious, ſmooth, ſtriated underneath, ſlightly ſheathing, ſhorter than the culm; ſheaths heaped at the baſe of the culm, compreſſed, keeled, having a very thin white membrane on each ſide, with a prominent tip. Floral leaves two, very like thoſe of the culm, upright; the lower the length of the corymb, the upper ſhorter. Panicle upright, unequal, corymbed when the fruit is ripe. Peduncles three or four, ſubdivided, the primary one always longer than the reſt: bractes lanceolate-briſtle-ſhaped. Flowers ſolitary, ſmall, coloured, terminating, moſt uſually in threes, the middle one axillary, ſeſſile. Calycine ſcales ovate, white. Petals (calycine leaflets) oblong, very blunt, almoſt upright when in blow, the three inner thinner, purpliſh. Stigmas prominent far beyond the flower. Capſule ſubglobular, almoſt oval, brown, ſhining, longer than the calyx, terminated by a ſcarcely apparent ſtyle. Seeds fulvous, pellucid [z].

With us, the bulbous Ruſh varies in height from two inches to two feet. It is ſometimes viviparous.

Native of wet meadows and heaths, and on the ſea-coaſt; flowering in auguſt.

17. Root annual, fibroſe. Culms uſually from ſeven to nine inches in height (but varying much from one to ten inches), upright, roundiſh, ſmooth. Culm-leaves few, ſomewhat ſheathing, linear, keeled. Bractes lanceolate-briſtle-ſhaped, the lower leaf-ſhaped. Flowers ſolitary, ſeſſile; a ſingle one always axillary in each diviſion of the culm; the reſt towards the ends of the branches, on one ſide and remote. Calycine ſcales ovate-acuminate, white. Petals (calyx-leaves) lanceolate-awl-ſhaped, very ſharp, the three inner ones ſhorter. Capſule oblong, ſubtrigonal, very blunt, brown, ſhining, ſhorter than the calyx, three-valved. Receptacle awl-ſhaped, tripartile, numerous brown ſeeds affixed on both ſides to each diviſion.

In the ſmaller plants the leaves are very ſlender, not angular, but folded together. Flowers moſtly in pairs, and only one ſeſſile, but in all, the ripe capſules are brown, ſhining and ſhorter than the calyx [b]. This is likewiſe found ſometimes viviparous [c].

Native of wet gravelly or ſandy paſtures, eſpecially where water ſtagnates in winter. It flowers from may to auguſt.

18. Root perennial, ſimple, jointed, with ſolitary radicles, covered with the remains of the leaves of the preceding year. Culm a ſpan high, upright, round, ſmooth, leafy. Stem-leaves two; the lower of the ſame length with the culm, awl-ſhaped, roundiſh, compreſſed a little, ſcarce apparently ſtriated, brown at the tip, channelled at the baſe, with membranaceous, embracing margins; the upper ſhorter, and not attaining the ſame height with the preceding. Spathe, or third terminating leaf awl-ſhaped, channelled, purpliſh with a brown tip, an inch long. From this proceed two ſtiff peduncles; the outer very ſhort; the inner the length of the ſpathe, and ſtraight; each terminated by a two-flowered, two-valved glume; valves ſmall, membranaceous, white, concave, ſharpiſh, equitant at the baſe, one third of the length of the flowers. The three outer ſegments of the calyx lanceolate, narrower, ſtiffer, ſtriated on the back, purple; the inner broader, thinner, flatter, white ſcarcely tinged with purple; all ſharp, permanent, attenuated and withering as the fruit ripens. Filaments ſcarcely the length of the calyx. Germ almoſt the length of the calyx, ovate, three-ſided. Capſule longer than the calyx, ſhining, brown, rufous at the tip, half-three-celled, many-ſeeded: valves ovate, bluntiſh, a little recurved at the tip; partitions from the centre to the baſe, gradually vaniſhing towards the middle. Seeds three-ſided, acuminate at both ends, ſhining, whitiſh. Linneus at firſt confounded this with J. bufonius, from which it is very diſtinct. It is a native of Sweden in deep wood bogs. Linneus had it from Lapland and Upland. Probably it has not been diſtinguiſhed from J. bufonius, and may perhaps be a native of Britain [d].

19. Root perennial, brown, horizontal, knobbed, ſending forth very long fibres perpendicularly. Culms ſeveral, quite ſimple, round, upright, from three to ſix inches high, with a few ſheaths at the baſe. On each culm a ſingle leaf, awl-ſhaped, round, ſlightly grooved, acuminate and mortified at the end, almoſt upright, ſheathing at the baſe, varying in ſituation, but never at the bottom of the culm. Root-leaves ſome, of the ſame ſtructure. A two-leaved or one-leafed glume, lanceolate-awned, thin, membranaceous, pale-brown, terminates the culm. A ſhort, branched peduncle collects from three to ſeven flowers (or ten, according to Haller), on very ſhort pedicels, and large in proportion to the plant; cloſed, acuminate, triangular. Calycine glumes roundiſh, concave, blunt, ſmall, purpliſh brown. Leaflets of the perianth lanceolate, concave, mucronate, rigid, very dark bay, ſhining. Filaments very ſhort; anthers linear, long, yellow, almoſt equalling the flower. Stigmas writhed ſpirally, red, villoſe, and double the length of the flower. Capſule blunt, grooved. Seeds few, ovate, acuminate. The whole plant is ſmooth.

Native of the Alps, flowering in june [e].

20. Root perennial, fibroſe, ſimple, perpendicular. Culm ſeldom an inch in height, round, marked with a ſingle ſtreak, covered at bottom with the remains of withered leaves, at top with the ſheath of the ſingle leaf, which is the length of the ſcape, ſhining, twice as thick as the culm, tubular, mortified at the end, channelled below, ſheathing the culm up to the middle. Leaves four or five ſurrounding the lower part of the culm, and changing into ſcales. Glume terminating; outer valve large, ovate, acuminate, very dark purple, green on the back, keeled; lower only half the ſize, acute, all dark-purple. Leaflets of the perianth of the ſame colour with the glume, but the three outer marked with a greeniſh line along the middle of the inner ſide, lanceolate, narrower at bottom. Three of the filaments oppoſite to the inner-leaflets of the perianth near the baſe, the three others fixed at the baſe of the germ, all, however, finiſhing at the ſame height. Germ blunt, ſomewhat ciliate at the corners. Stigmas purpliſh, pubeſcent, the length of the ſtyle.

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[u] Leers.
[x] Lightfoot.
[y] Villars.
[z] Leers.
[a] Ibid.
[b] Withering.
[c] Lightfoot.
[d] Smith.
[e] Jacqu. auſtr.

This Ruſh has the appearance of Schoenus ferrugineus, and is a native of the Lapland alps, where it was found by Montin[f].

21. Culms in tufts, three inches high or more, ſoft, covered at the baſe with brown ſheaths. Culm-leaves two, round, fiſtular, half the length of the culm, from broad ſheaths. Head of unequal height, with the three flowers peduncled. The two firſt glumes large, keeled, ovate-lanceolate, bay with a mixture of red, white at top: the third glume within the others, and not two at the baſe. Outer leaves of the flower larger, of a bay rufous colour; the inner paler. Capſule large, ovate and three-ſided. Seeds acuminate[g].

Root-leaves ſheathing the culm, flat, like thoſe of Graſs. Culm without branches or leaves, terminated by a glume, within which are three ſeſſile flowers[h].

Native of the Lapland alps, Denmark, Switzerland, Auſtria, Italy, Siberia.

22. Root perennial, with numerous brown fibres, and ſhort pointed ſhoots, ſo that it is ſomewhat creeping. Culms many, about a ſpan or more in length, nearly upright, leafy, naked above, ſimple, ſmooth, ſtriated, round, furniſhed with three or four joints, which are not protuberant. Root-leaves numerous, three or four inches long, three lines, or three lines and a half broad, ſomewhat narrower at the baſe, a little concave, dull green on the upper ſurface, ſmooth and rather gloſſy, beneath paler green and ſlightly gloſſy, at the edges eſpecially, covered with a few long hairs, which are moſt numerous towards the baſe of the leaf, often of a reddiſh colour, a little blunt, and as it were cut off at the point. Flowers forming a ſpreading panicle. Flower-ſtalks of unequal lengths, a few ſimple, moſt of them proliferous, dichotomous or trichotomous, finally ſtretching out backwards, all ſupporting a ſingle flower, the intermediate ones ſeſſile. Perianth-leaves oblong, pointed, keeled, concave, purpliſh-brown and permanent. Germ pointed.

This and the following ſpecies are diſtinguiſhed by their graſs-like hairy leaves. J. piloſus differs from campeſtris, not only in its place of growth, but in having its flowers ſtand ſingly, and not in cluſters. Whilſt the campeſtris delights in expoſed places, the piloſus is found only in woods and ſhady ſituations. From this circumſtance we may perhaps account for its flowering earlier than any of the others; for if the ſeaſon be not very unfavourable, it will begin to flower in february, and is uſually out of bloom the beginning of may[i].

23. Culm a foot in height at moſt. Root-leaves ſcarcely two lines in breadth, ſubhirſute, but with the ſheath ſmooth, ſpringing from a little tuft of brown, membranous ſcales. Culm-leaves four or five, narrowing inſenſibly, ſpringing from a ſheath as long as themſelves, and producing a pencil of long ſilky hairs at its ſeparation from the ſtem. Flowers very numerous, in a falſe umbel, on peduncles that are filiform, and diminiſh in length as they are higher on the ſtem, inſomuch that the lower ones ſtand higher at top than the upper ones. They have at their baſe lanceolate, villoſe, ruſſet-coloured bractes. Flowers rude, ſmall, ſolitary. Calyx-leaves two-thirds only of a line in length, and leſs than half a line in breadth, blunt, ending in a point or ſhort awn; they vary in colour, being whitiſh, ruſſet, pale yellow or brown, but they are conſtant in figure and ſize[k]. Native of the Alps.

24. The leaves of this are not only much broader and more concave, but more ſharply pointed than thoſe of the *piloſus*; it flowers three weeks or a month later; and when the flowering is over, the peduncles of the *piloſus* are more reflexed or pendulous than thoſe of the *ſylvaticus*. It flowers in may, or earlier, if the ſeaſon be mild. In ſome ſituations this ſpecies is very large and tall, but it more uſually occurs with a ſtalk little more than a foot high. If the height of *campeſtris* be nine inches, that of *piloſus* is eleven, and of *ſylvaticus* fifteen. It is not uncommon in woods[l].

25. Height three feet. Leaves ſcarcely a line in breadth. Panicle of the umbel convex. Two long narrow leaves riſe above it, near one another, at the baſe of the umbel, and a little higher. Stipules under the branches long, ſtiff, jagged: bractes ſhort, ovate-lanceolate, ſnow-white, ſhining. Flowers the handſomeſt of any in this genus. Calyx-leaves white; ſmooth; the inner three lines long; the outer only half that length; all lanceolate[m].

Native of the Alps of Switzerland, &c.

26. Root perennial, ſomewhat woody, with numerous blackiſh fibres, creeping. Culm ſimple, from three to nine inches high, upright, leafy, ſomewhat enlarged at bottom, round, ſmooth, without joints. Leaves pointed, the tips often mortified, or of a reddiſh brown colour, without any membrane. Two ſmall, upright, unequal leaves, placed under the ſpikelets, terminate the ſtalk. Spikelets generally three, ſubovate, upright when the plant is in flower, on unequal pedicels, the loweſt ſpikelet nearly ſeſſile. Peduncles filiform, proceeding from a ſmall ſheath edged with hairs. Flowers ten or twelve in each ſpikelet, ſeſſile. Four ſmall ſcales, ovate-acute, membranous, unequal, much ſhorter than the calycine leaflets, ſurround the baſe of each floret. Calycine leaflets lanceolate-acuminate, ſpreading, permanent, ſhining, keeled, browniſh-purple. Anthers oblong, the length of the calyx, four-grooved, two-cuſped, when the pollen is ſhed becoming twiſted. Seeds uſually three, roundiſh, olive-coloured. Thus the Field-Ruſh appears in its moſt uſual ſtate in dry paſtures: in ſuch ſituations it has ſeldom more than three or four ſpikelets: in moiſter richer ſoils, particularly in boggy ground, it often has a much greater number. But although it may vary in ſize and number of parts, it ſtill continues very diſtinct from the *piloſus*. It flowers in april and may, and ripens its ſeeds in june. It indicates a dry, and conſequently not luxuriant paſturage. The hairs proceed from the edges of the leaves, and appear as if ſome animal had left its hairs on them by rubbing[n].

27. Linneus, in his *Flora Suecica*, conſiders this as ſo nearly allied to the preceding, as to be perhaps only a variety. In his *Flora Lapponica*, however, he has figured and deſcribed it thus. Root-leaves ten or twelve, upright, acuminate. Culm very ſlender, with three ſmall leaves, one at the baſe, a ſecond in the middle, and a third at the top. Spike ſingle, looſe, ovate-oblong, compoſed of many flowers.

Dr. J. E. Smith affirms that this and *campeſtris* are perfectly diſtinct. It is five or ſix inches high, with a terminating ſpike, pointing almoſt horizontally, about half an inch long[o].

Native of Lapland, Denmark, Scotland.

28. Culms leafy, round, as thick as the little finger, from four to ſix feet high. Leaves alternate, graſſy, hard, even, ſomewhat nerved, ſcarcely the length of the culm. Panicle conglomerate, not very ſpreading; flowers ſcatteringly conglomerate. It is allied to *J. piloſus*, but is much larger even than *J. acutus*.—Native of the Cape of Good Hope.

29. Scarcely a foot high, very ſmooth. Culm round, covered with ſheaths at the baſe. Leaf ſingle, round, awl-ſhaped, ſtraight, longer than the culm. One large, upright flower terminates the culm. Calycine valves upright, acute, alternately ſhorter. Stamens and piſtils ſhorter than the calycine valves[p].

Juncus. See *Acroſtichum*, *Butomus*, *Cornucopiæ*, *Cyperus*, *Reſtio*, *Scheuchzeria*, *Schoenus*, *Scirpus*.

Juncus odoratus. See *Andropogon* & *Oenanthe*.

JUNGERMANNIA. (*So named from Louis Jungermannus of Leipſic, profeſſor of Botany at Altorff; author of* Flora Altorf. 1615. *and* Flora Gieſſenſis, 1623.)

Lin. gen. n. 1196. *Reich.* 1313. *Schreb.* 1662. *Mich.* 5. *Schmidel. monogr.* 1760. *ic. t.* 22, 35, 42, 48, 55, 62, 63, 64, 67, 68. *Hedw. theor.* 83. *t.* 15—23. Muſcoides, *Mich.* 6. Lichenaſtrum. *Dill. muſc.* 479. Andreæa, *Ehrb. beytr.* 1. 180.

Claſſ. 24. 3. Cryptogamia Algæ. *Linn.*
————4. ———— Hepaticæ. *Schreb.*
Nat. order of *Hepaticæ*, Juſſ. 8.

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[f] Linn. amoen.
[g] Haller.
[h] Linn. ſuec.
[i] Curtis.
[k] Villars.
[l] Curtis.
[m] Haller.
[n] Curtis.
[o] Withering.
[p] Linn. ſuppl.

GENERIC CHARACTER.

* *Male flowers* ſeſſile, cluſtered, on the leaves, ſtem, frond.

CAL. ſcarce any.

COR. none.

STAM. *Filaments* hardly any. *Anthers* ovate, one-celled, gaping at the tip.

* *Female flowers* on the ſame, or on a ſeparate individual.

CAL. *Perianth* upright, tubular; truncated, crenated, or laciniated.

COR. *Calyptra* ſeſſile, ſmaller than the perianth, ſubgloboſe, cloſed on every ſide, membranaceous, tender, crowned by the ſtyle, at length burſting at the tip.

PIST. *Germ* oblong, involved by the calyptra, ſeſſile; *ſtyle* ſtraight, ſhort, paſſing through the top of the calyptra; *ſtigma* ſimple.

PER. *Capſule* ſeated on a long and very tender briſtle, globoſe, one-celled, at length gaping longitudinally into four *valves*, which are equal, ſpreading, permanent.

SEEDS many, globoſe, adhering by twiſted elaſtic *threads* fixed to the bottom, tip, diſk, or margin of the valves.

OBS. *Several germs are often found in one perianth, of which, however, only one grows to maturity.*

The Stemleſs Jungermanniæ *have their anthers within the ſubſtance of the fronds, and want the perianth of the female flowers: Qu. Whether they do not conſtitute a diſtinct genus?*

Thirty ſpecies of theſe Moſſes are arranged in five ſubdiviſions, in the fourteenth edition of Syſtema Vegetabilium. Mr. Hudſon has thirty ſpecies in the ſecond edition of his Flora Anglica. Dr. Withering has forty-eight ſpecies in the third edition of his Arrangement of Britiſh Plants. He diſtributes them into four ſubdiviſions:

A. Plant unbranched, and without a midrib.
B. 1. Leaves winged: fruit-ſtalks terminating.
  2. Leaves winged: fruit-ſtalks lateral, or at the baſe.
C. 1. Leaves winged: leaflets with appendages: fruit-ſtalks terminating.
  2. Leaves winged: leaflets with appendages: fruit-ſtalks lateral, or at the baſe.
D. Shoots tiled or imbricate.

Figures of theſe Moſſes will be found in Dillenius, Micheli, Vaillant, Hedwig, Dickſon, Schmidel, Flora Danica, Engliſh Botany, Moriſon, Withering, &c.

Many of the ſpecies are beautiful microſcopic objects, according to the remark of Dr. Withering.

JUNGERMANNIA. See *Mnium.*

JUNGHANSIA. See *Curtiſia.*

JUNGIA. (*So named from Joachim Jungius, M. D. Profeſſor at Hamburgh: author of* Doxoſcopia, 1662. *and* Phytoſcopia, 1678.)

Lin. gen. Schreb. n. 1348. *ſuppl.* 58. *Juſſ.* 175.
Claſſ. 19. 5. Syngeneſia Polygamia Segregata.
Nat. order of *Compoſitæ Oppoſitifoliæ.*
Cinarocephalæ. Juſſ.

GENERIC CHARACTER.

CAL. *Common* many-leaved: *leaflets* ſomewhat ſpreading, linear, obtuſe, channelled, ſhorter than the partial perianth, involving three or four flowers.

Perianth partial, many-leaved, almoſt equal, many-flowered: *leaflets* oblong, channelled, obtuſe, upright.

COR. *Compound* uniform; *corollets* hermaphrodite, equal; *proper* one-petalled, funnel-ſhaped; *tube* gradually widened: *border* two-lipped: the *exterior diviſion* rolled back, longer, linear, toothed at the tip: the *interior* two-parted; the *two ſegments* upright, ſharp.

STAM. *Filaments* five, very ſhort, inſerted into the tube. *Anthers* connate.

PIST. *Germ* inferior, linear, cornered. *Style* filiform. *Stigmas* two, revolute, obtuſe.

PER. none. Calyx unchanged.

SEED ſolitary, cornered. *Down* long, ſeſſile, feathered.

REC. chaffy. *Chaffs* reſembling the calycine leaflets.

ESSENTIAL CHARACTER.

Cal. common three-flowered. *Recept.* chaffy. *Florets* tubular, two-lipped; outer lip ligulate, inner two-parted.

SPECIES.

1. Jungia ferruginea.
Lin. ſyſt. 797. *ſuppl.* 390.

DESCRIPTION, *&c.*

Stems woody, covered with a ferruginous down. Leaves alternate, petioled, remote, flat, rounded, five-lobed, cordate at the baſe: lobes rounded, blunt; they are hirſute, and underneath hoary. Panicle terminating, large, decompounded. Heads of flowers ſmall, heaped. Native of South America[a].]

JUNIPERUS (*of Pliny, &c.*)

Lin. gen. n. 1134. *Reich.* 1240. *Schreb.* 1552. *Gærtn. t.* 91. *Tournef. t.* 361. *Juſſ.* 413. *Tournef.* 361.
Sabina. *Boerh.* 2. 207. Cedrus. *Tournef.* 361.
Claſſ. 22. 13. Dioecia Monadelphia.
Nat. order of *Coniferæ.*

GENERIC CHARACTER.

* *Male.*

CAL. *Ament* conical, conſiſting of a common ſhaft on which are diſpoſed three oppoſite flowers in triple oppoſition; a tenth terminating the ament: each flower has for its baſe a broad, ſhort, incumbent *ſcale* affixed to the column of the receptacle.

COR. none.

STAM. *Filaments* (*in the terminal floſcule*) three (four to eight) awl-ſhaped, united below into one body: (*in the lateral flowers* ſcarce manifeſt;) *Anthers* three, diſtinct in the *terminal flower*, but faſtened to the calycine ſcale, in the *lateral* ones.

* *Female.*

CAL. *Perianth* three-parted, very ſmall, growing to the germ, permanent.

COR. *Petals* three, permanent, rigid, acute.

PIST. *Germ* inferior. *Styles* three, ſimple. *Stigmas* ſimple.

PER. *Berry* fleſhy, roundiſh, marked on the lower part with three oppoſite obſcure tubercles, (from the calyx having grown there) and at the tip by three teeth (which before were the petals), umbilicated.

SEED three *oſſicles*, convex on one ſide, cornered on the other, oblong.

ESSENTIAL CHARACTER.

MALE. Calyx of the ament a ſcale. *Cor.* none. *Stam.* three.

FEM. *Cal.* three-parted. *Pet.* three. *Styles* three. *Berry* three-ſeeded, irregular with the three tubercles of the calyx.

SPECIES.

1. Juniperus thurifera. *Spaniſh Juniper.*
Lin. ſpec. 1471. *Reich.* 4. 276.
J. hiſpanica. *Mill. dict. n.* 13.
Cedrus hiſpanica procerior, fructu maximo nigro. *Tourn. inſt.* 588.
Leaves imbricate in four rows, acute.

2. Juniperus barbadenſis. *Barbadoes Juniper.*
Lin. ſpec. 1471. *Reich.* 4. 276. *Lour. cochinch.* 636. *Thunb. jap.* 264. *Pluk. phyt. t.* 197. *f.* 4.
J. bermudiana. *Hort. angl. t.* 1. *f.* 1.
All the leaves imbricate in four rows, the younger ovate, the older acute.

3. Juniperus bermudiana. *Bermudas Juniper.*
Lin. ſpec. 1471. *Reich.* 4. 276. *Brown. jam.* 362. *Herm. lugdb. t.* 347. *Raii hiſt.* 1414.
Lower leaves in threes, upper in pairs, decurrent, awl-ſhaped, ſpreading, acute.

[4. Juniperus chinenſis. *Chineſe Juniper.*
Lin. ſyſt. 894. *Reich.* 4. 277. *mant.* 127. *Lour. cochinch.* 636.
Leaves decurrent, imbricate-ſpreading, cluſtered, ſtem-leaves in threes, branch-leaves in fours.]

5. Juniperus Sabina. *Savin.*
Lin. ſpec. 1472. *Reich.* 4. 277. *hort. cliff.* 464. 3. *upſ.* 299. *mat. med.* 217. *Woodv. ined. bot.* 256. *t.* 94. *Gouan. hort. monſp.* 510. *Hall. helv. n.* 1662. *Scop. carn. n.* 1228. *Gmel. ſib.* 1. 183. *n.* 34. *Pall. it.* 3. 368. *fl. roſs.* 1. 2. 15. *t.* 56. *f.* 2.

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[a] Linn. ſuppl.

α. J. luſitanica. *Mill. dict. n.* 11.
J. S. cupreſſifolia. *Common Savin.*
Ait. hort. kew. 3. 414. α.
Sabina. *Dod. pempt.* 854. *Blackw. t.* 214.
S. folio cupreſſi. *Bauh. pin.* 487. *Duham. arb.* 2. *t.* 62. *Raii hiſt.* 1415.
β. J. Sabina. *Mill. dict. n.* 10.
J. S. tamariſcifolia. *Tamariſk-leaved Savin.*
Ait. hort. kew. 3. 414. β.
S. fol. tamariſci Dioſcoridis. *Bauh. pin.* 487. *Raii hiſt.* 1415.
Leaves oppoſite, erect, decurrent, the oppoſitions boxed.

6. Juniperus virginiana. *Virginian Juniper*, or *Red Cedar.*
Lin. ſpec. 1471. *ſyſt.* 894. *Reich.* 4. 277. *hort. cliff.* 464. 2. *Gron. virg.* 2. 157. *Kalm. it.* 3. 119. *Thunb. jap.* 264.
J. caroliniana. *Mill. dict. n.* 4. *Reich.*
J. major americana. *Raii hiſt.* 1413. 1414.
J. maxima cupreſſi folio minimo, &c. *Sloan. jam.* 2. 2. *t.* 157. *f.* 3. *Raii dendr.* 12.
Leaves in threes, faſtened at the baſe, the younger ones imbricate, the older ſpreading.

7. Juniperus communis. *Common Juniper.*
Lin. ſpec. 1470. *Reich.* 4. 278. *hort. cliff.* 464. *n.* 1. *fl. ſuec. n.* 915. *lapp. n.* 376. *mat. med.* 217. *Woodv. med. bot.* 259. *t.* 95. *Hudſ. angl.* 456. *Wither. arr. ed.* 3. 599. *Gærtn. fruct.* 2. 62. *Hall. helv. n.* 1661. *Scop. carn. n.* 1229. *Pollich. pal. n.* 904. *Leers herborn. n.* 768. *Pallas. roſs.* 1. 2. 12. *t.* 54. *Du Roi harbk.* 1. 338. *Gmel. ſib.* 1. 182. *Sauv. monſp.* 169. *Blackw. t.* 187. *Mill. illuſtr. Fl. dan. t.* 1119. *Zorn. ic.* 178.
α. J. vulgaris. *Park. theat.* 1029. 1.—fruticoſa. *Bauh. pin.* 488.
Juniperus. *Camer. epit.* 53. *Ger.* 1189. 1. *emac.* 1372. 1.—vulg. baccis parvis purpureis. *Bauh. hiſt.* 1. 293. *Raii hiſt.* 1411.
β. J. ſuecica. *Swediſh Juniper.*
Mill. dict. n. 2.
J. vulgaris arbor. *Bauh. pin.* 488.
γ. J. minor montana, folio latiore, fructuque longiore. *Bauh. pin.* 489.
J. alpina. *Bauh. hiſt.* 1. 302. 1. *Cluſ. hiſt.* 1. 38. 2. *Raii hiſt.* 1413.—minor. *Ger. emac.* 1372. 3.
Leaves in threes, ſpreading, mucronate, longer than the berry.

8. Juniperus Oxycedrus. *Brown-berried Juniper.*
Lin. ſpec. 1470. *ſyſt.* 895. *Reich.* 4. 278. *mant.* 499. *Scop. carn. n.* 1227. *Du Roi harbk.* 1. 344. *Gouan. monſp.* 509. *Sauv. monſp.* 169. *act.* 1743. *p.* 52.
J. major bacca rufeſcente. *Bauh. pin.* 489. *Duham. arb.* 2. 326. *t.* 128. *Raii hiſt.* 1413.
Oxycedrus. *Cluſ. hiſt.* 1. 39.
Leaves in threes, ſpreading, mucronate, ſhorter than the berry.

9. Juniperus phoenicea. *Phenician Juniper* or *Cedar.*
Lin. ſpec. 1471. *Reich.* 4. 279. *Gouan. hort. monſp.* 509. *Pallas. roſs.* 1. 2. *t.* 57.
J. major. *Cluſ. hiſt.* 1. 38. *Lob. ic.* 221.
Cedrus folio cupreſſi major, fructu flaveſcente. *Bauh. pin.* 487. *Raii hiſt.* 1414.
Sabina folio tamariſci. *Duham. arb.* 2. 242. *t.* 63. *Pallas.*
Leaves in threes, obliterated, imbricated, obtuſe.

10. Juniperus lycia. *Lycian Juniper* or *Cedar.*
Lin. ſpec. 1471. *Reich.* 4. 279. *mat. med.* 217. *Woodv. med. bot.* 569. *t.* 206. *Sauv. monſp.* 169. *Gouan. monſp.* 509. *Gmel. ſib.* 1. 182. *Gron. orient.* 320. *Pallas. it.* 2. 522. *roſs.* 1. 2. *t.* 56. *f.* 1.
Cedrus folio cupreſſi media majoribus baccis. *Bauh. pin.* 487.
C. phoenicea altera Plinii & Theophraſti. *Lob. ic.* 221.—media *ejuſd. ic.* 221.
Leaves in threes, imbricate on all ſides, ovate, obtuſe.

[11. Juniperus drupacea.
Billard. ic. ſyr. 2. 14. *t.* 8.
J. major. *Bellon. obſ.* 2. 162. *Cluſ. hiſt.* 1. 38?
Leaves in threes, ſpreading, acute, three times ſhorter than the drupe, nut three-celled.

12. Juniperus daurica. *Siberian Juniper.*
Pallas. roſs. 1. 2. 13. *t.* 55. *Gmel. ſib.* 1. 183. *n.* 35.
Leaves oppoſite, acute, imbricate-decurrent, ſpreading, awl-ſhaped.]

DESCRIPTIONS, &c.

1. Spaniſh Juniper grows to the height of twenty-five or thirty feet, and ſends out many branches, which form a ſort of pyramid. Leaves acute, lying over each other in four rows, ſo as to make the branches four-cornered. Berries very large, black when ripe. Native of Spain and Portugal. Cultivated in 1759 by Mr. Miller.

2. Barbadoes Juniper or Cedar, or Jamaica berry-bearing Cedar has been confounded with the Bermudas Cedar; but the branches of this ſpread very wide, the leaves are extremely ſmall, and are every where imbricate; the bark is rugged, ſplits off in ſtrings, and is of a very dark colour. The berries are ſmaller than thoſe of the Bermudas Cedar, and are of a light brown colour when ripe.

It is a native of the Weſt Indies, where it riſes to be one of the largeſt timber trees: the wood is frequently fetched from thence by the inhabitants of North America, for building ſhips. [It is alſo an inhabitant of China and Japan.] Cultivated in 1759, by Mr. Miller.

3. Bermudas Juniper, commonly called Bermudas Cedar, whilſt young, has acute-pointed leaves, which ſpread open, and are placed by threes round the branches; but as the trees advance their leaves alter, and the branches become four-cornered; the leaves are very ſhort, and lie over each other by fours round the branches. The berries are produced towards the ends of the branches, and are of a dark red colour, inclining to purple. The wood has a very ſtrong odour, and was formerly in great eſteem for wainſcotting rooms, and alſo for furniture.

[Native of America. Dr. Patrick Browne ſays, that it grows very plentifully in moſt of the Blue Mountains of Jamaica, where it is frequently cut down for planks, &c.; that it is a good timber-wood, admired for its ſmell, lightneſs, and cloſe even grain; very fit for wainſcotting, and all the inward parts of cabinet-work.—Cultivated in 1700 by the Earl of Clarendon [a].

4. Loureiro deſcribes the Chineſe Juniper as a ſhrub of three feet in height, with twiſted and very ſpreading branches. Leaves awl-ſhaped, hardiſh, dark green—according to Linneus ſpreading, green on both ſides, more cluſtered than in the other ſorts, faſtened at the baſe, ſcarcely pungent, extremely diſtinct by the denſity of the leaves [b]. Native of China.

5. Mr. Miller makes two ſpecies of the Common or Cypreſs-leaved, and Tamariſk-leaved or Berry-bearing Savin, as he calls it.] The former, he ſays, has by many been ſuppoſed to be only an accidental variety; but the branches grow more erect, the leaves are ſhorter, and end in acute points which ſpread outwards. It riſes to the height of ſeven or eight feet, and produces great quantities of berries: whereas the Tamariſk-leaved Savin very rarely produces either flower or ſeed in our gardens. β. This ſends out its branches horizontally, and ſeldom riſes more than three or four feet high, but ſpreads to a conſiderable diſtance every way. Leaves very ſhort, acute-pointed, running over each other along the branches, with the ends pointing upwards. The berries are ſmaller than thoſe of Common Juniper, but of the ſame colour, and a little compreſſed. The whole plant has a very rank odour when handled. [There is a variety with variegated leaves. Savin is a native of the South of Europe and the Levant. It was cultivated here in 1562, as we learn from Turner [c]: but probably it is a much older plant in our gardens.

Profeſſor Pallas ſays, that in the Cherſoneſus taurica, where it is very common, the Savin is often found with a trunk a foot in diameter; that it grows upright there like a Cypreſs, whereas by the Tanais it is procumbent, the branches extending on the ſand ſeveral fa-

[a] Hort. kew.

[b] Mant.

[c] Hort. kew.

thoms; that the wood very much reſembles that of J. lycia, but has a more cadaverous ſmell, and the leaves are more fetid.

6. Leaves mutually oppoſite by threes, faſtened at the baſe by their inner ſide, in the new ſhoots imbricate in four rows, giving them the appearance of being quadrangular; the year following theſe ſpread from the branch at an acute angle, and appear to be diſpoſed in ſix rows or longitudinal phalanxes[d]. Berry dark blue, covered with a whitiſh reſinous meal[e].

Native of North America, the Weſt India iſlands and Japan.

It grows to be one of the largeſt and higheſt timber trees in Jamaica, affording very large boards, of a reddiſh brown colour, cloſe and firm contexture, ſhining, very odoriferous, extremely like Bermudas Cedar, being towards its outſides of a paler colour and looſer contexture. The bark is thin, and ready to drop off in great pieces, appearing ſomewhat contorted, of a reddiſh brown colour. This tree is much uſed for wainſcotting rooms, making eſcritoirs, cabinets, &c. Cockroches and other inſects diſliking the ſmell of it[f].

I ſhould ſuſpect Sloane's tree to be the Bermudas Cedar.

Mr. Miller has two ſpecies. (n. 3, 4.)] The firſt he names J. virginiana, which he ſays grows naturally in moſt parts of North America, where it is called Red-Cedar, to diſtinguiſh it from a ſort of Cypreſs, which is called White Cedar there. Of this there are two or three varieties; one of which has leaves in every part, like thoſe of the Savin, and upon being rubbed, emit a very ſtrong ungrateful odour: this is commonly diſtinguiſhed in America by the name of Savin-tree. There is another with leaves very like thoſe of Cypreſs; but as theſe generally ariſe from the ſame ſeeds, they may be ſuppoſed to be only ſeminal varieties.

The ſecond he names J. caroliniana. The leaves of this are like thoſe of the Swediſh Juniper, but the upper leaves are like thoſe of the Cypreſs; and this difference is conſtant, if the ſeeds are carefully gathered from the ſame tree; but it often happens that perſons who gather the ſeeds in America mix two or three ſorts together. In the Virginia Cedar all the leaves are like thoſe of Juniper. The Carolina Cedar, as the gardeners call it, is alſo a native of Virginia.

Cultivated here in 1664, according to Evelyn.

7. Juniper is a low ſhrub, ſeldom riſing more than three feet high, ſending out many ſpreading tough branches, which incline on every ſide, covered with a ſmooth, brown or reddiſh bark, with a tinge of purple. Leaves narrow awl-ſhaped, ending in acute points, placed by threes round the branches, pointing outwards, bright green on one ſide, and gray on the other, continuing through the year. The male flowers are ſometimes on the ſame plant with the females, but at a diſtance from them; but they are commonly on diſtinct plants. The female flowers are ſucceeded by roundiſh berries, which are firſt green, but when ripe of a dark purple colour. [They continue on the buſh two years, and are ſeſſile in the axil of the leaves. Gærtner calls the fruit *galbulus*; and deſcribes it as ſpherical, berried, blackiſh-blue, covered with a bloom, marked at top with three raiſed dots, and a three-forked groove, received at bottom in a very ſmall ſtarred involucre: it is juiceleſs, ſpongy-fleſhy, and contains three ſtones. Theſe are bony, one-celled, valveleſs, gibboſe, on one ſide from a broad and convex back narrowed towards the baſe and keeled, on the other very bluntly angular, or marked with a longitudinal ridge, and at the baſe on the outſide with four oblong little excavations, into each of which a balſamiferous gland is inſerted. Seed ſingle, ovate-acuminate, dun-coloured with a brown mark at the baſe. Geoffroy firſt remarked theſe glands in 1721; but he reckoned only eight, whereas there are twelve, namely four to each ſeed.

Juniper is common in all the northern parts of Europe, in fertile or barren ſoils, on hills or in valleys, in open ſandy plains or in moiſt and cloſe woods. On the ſides of hills its trunk grows long, but on the tops of rocky mountains and on bogs it is little better than a ſhrub[g]. In England it is found chiefly on open downs, in a chalky or ſandy ſoil. In the Southern countries of Europe it is leſs common, except in more elevated ſituations.

When planted in a good ſoil it will grow fifteen or ſixteen feet high, and form a well-looking buſhy ſhrub. Mr. Evelyn mentions a ſlender buſh of two feet in height, brought from a common, which in ten years meaſured ſeven feet ſquare and eleven feet high, and would have been of a much greater altitude and farther ſpreading, had it not continually been kept ſhorn. —It is eaſily tranſplanted, and bears cropping. Graſs will not grow beneath it, but the *Avena pratenſis* deſtroys it. The wood is hard and durable. The bark may be made into ropes. Spirit impregnated with the eſſential oil of theſe berries is every where known by the name of Juniper water or Gin. The berries ſometimes appear in an uncommon form: the leaves of the calyx grow double the uſual ſize, approaching, but not cloſing, and the three petals fit exactly cloſe, ſo as to keep the air from the *Tipulæ Juniperi*, which inhabit them. Other inſects feed on this ſhrub, as *Cimex juniperinus*, *Thrips juniperina*, and *Coccinella novempunctata*. Horſes, ſheep and goats eat it. Gum Sandarach, known under the name of *Pounce* in its powdered form, is the produce of this ſhrub[h].]

β. Swediſh or Tree Juniper riſes to the height of ten or twelve (even ſixteen or eighteen) feet; the branches grow more erect than thoſe of the common Juniper; the leaves are narrower, end in more acute points, and are placed farther aſunder on the branches; the berries alſo are longer. It is a native of Sweden, Denmark and Norway. Mr. Miller inſiſts on this being a diſtinct ſpecies, becauſe having raiſed both from ſeed for many years, he never found them alter. [Plants raiſed from ſeeds have a tendency to grow higher than thoſe which are cropped by cattle; and this miſled Mr. Miller, for theſe are certainly no more than varieties.

γ. Nor is the Alpine or Mountain Juniper at all different from the Common, though the leaves be broader and thicker; the berries rather oval than ſpherical.

8. Branchlets three-ſided. Leaves ſeſſile (by no means adnate), altogether as in J. communis, but larger in all the parts. Berries rufeſcent, the ſize of a hazel-nut[i].]

Height ten or twelve feet, branched the whole length. Branches ſmall and taper, having no angles, as moſt of the other Junipers have. Leaves ſmall; obtuſe, imbricate. Male flowers at the ends of the branches in conical ſcaly aments: the berries below from the ſide of the ſame branch.

[This ſhrub will be feathered from top to bottom, if left untouched from the firſt planting, or if not crowded with other trees. Leaves awl-ſhaped, and finely ſpread open; they are very ſhort, ſharp-pointed, and give the ſhrub a fine look. The large browniſh red berries make a handſome appearance when they are ripe[k].

Native of Spain, Portugal, and the South of France. —Cultivated in 1739, by Mr. Miller[l].]

9. Phenician Cedar or Juniper grows with its branches in a pyramid; the lower ones have ſhort, acute-pointed, grayiſh leaves, pointing outwards; but thoſe on the upper branches are dark-green and imbricate, ending, however, in acute points. The male flowers are produced at the extremity of the branches, in a looſe ſcaly conical ament, ſtanding erect on a ſhort peduncle: the fruit is ſometimes upon the ſame tree, at a diſtance from the male flowers, but more generally on ſeparate trees. Berries pale yellow when ripe, about the ſize of thoſe of common Juniper.

[Leaves ovate, convex, blunt, very minute[m]. Branches, branchlets and fronds thick, dichotomous, and even woody, with the remains of ſcales; the older branches having a duſky teſtaceous bark. Fronds imbricate, with decurrent leaflets in threes, with very long ſharp points[n].

[d] Linn. cliff. [e] Clayt. in Gron. [f] Sloane.

[g] Linn. [h] Withering. [i] Linn. mant.
[k] Hunter in Evel. [l] Hort. kew. [m] Linn. [n] Pallas.

Ray regards this as ſcarcely different from the next ſpecies [o].

Native of the South of Europe and the Levant. Cultivated in 1683, by Mr. James Sutherland [p].] Mr. Miller ſays, he has frequently received the berries from Portugal.

10. Lycian Cedar has the branches growing erect, and covered with a reddiſh-brown bark. Leaves ſmall, obtuſe. Male flowers at the ends of the branches in a conical ament; and the fruit ſingle from the axils below them, on the ſame branch. Berries large, oval, and when ripe brown.

[According to Pallas, it is entirely proſtrate, with the trunk branching from the very bottom, often thicker than the human arm. This and the branches are often compreſſed or variouſly deformed, with ſcarcely any outer bark. Wood ſmelling very ſtrong like the American Cedar. Branches and extreme branchlets wand-like, ſtraight, thickiſh, covered with a teſtaceous bark. Shoots dark-green, dichotomous, imbricate, with leaflets decuſſately oppoſite, ſcale-form, ſharp. Berries terminating, globular, middle-ſized, black when ripe, with a glaucous bloom; containing three or four ſtones. Seeds ovate-oblong, convex on the outſide, angular-three-ſided within.

Pallas remarks, that it is with difficulty diſtinguiſhed from Savin; that the bruiſed leaves have the ſame ſmell; and that it differs from it principally in the greater thickneſs of the ſhoots, and in the leaflets being acute and leſs cluſtered. He ſays that the leaves are never in threes with them.

Native of the South of France, the Levant and Siberia.] Mr. Miller ſays that he received it both from Spain and Italy. He cultivated it in 1759.

11. Stem fruteſcent, erect, branched, branches ſpreading, branchlets three-ſided. Leaves ſeſſile, lanceolate, ſomewhat glaucous, with a double line above. Drupe teſtaceous, with a glaucous bloom, often three times as long as the leaves, large, roundiſh, angular, and marked with ſix or nine retuſe tubercles. Nut ſubovate, large, with three ſmall cells, very hard, hollowed above with three lines; kernel ſolitary, ovate-oblong, fixed by a pellicle to the bottom of the cells.

Native of mount Caſſius: and probably the ſame with the great Junipers obſerved by Belon on mount Taurus, and which he deſcribes as riſing to the height of a Cypreſs, and bearing a ſweet fruit, the ſize and ſhape of an olive [q].

12. This is uſually ſhrubby, with the ſtems lying proſtrate on the rocks, the principal ones often the thickneſs of the human arm. Branches thickiſh, teſtaceous, the younger ones imbricate, with the remains of leaves changed into acuminate ſcales, which at length are cloven, and fall. Shoots green, dichotomous, imbricate with leaves that are decuſſately oppoſite, in pairs, glaucous-green, leſs crowded.

Reſpecting the leaves, there are two varieties of this Juniper. In one, the leaves are moſtly ſcale-form, decurrent, with a ſhort awl-ſhaped point, and cloſely imbricate, with here and there a longer needle-ſhaped leaf on the branchlets. This is commonly male, or with female flowers only at the incurved three-leaved tips of the branchlets. The other is commonly berry-bearing all over, except the outer younger ſhoots; and the leaves, like thoſe of J. Oxycedrus, are acicular or needle-ſhaped, ſpreading from the baſe, almoſt as long as the berries, keel-grooved, compreſſed. Berries globular, more bitter than the Common Juniper, blackiſh when ripe, but appearing blue from the white meal that covers them, peduncled as it were by ſtanding on a leafleſs thickened branchlet, containing one or two ſtones; kernels ovate-globular, large, margined with a blunt rib, or four-grooved, yellowiſh.

Native of Siberia, and totally different from J. lycia [r].

The virtues of ſome ſpecies of this genus are very conſiderable. The *Common Juniper* is celebrated for its diuretic powers: the berries are principally uſed; and from them a ſpirit is prepared and kept in the ſhops, and uſed plentifully in hydropic caſes, and in diuretic draughts; boiled in water theſe berries give a ſweet decoction, taſting very ſtrongly of the Juniper, and from the decoction may be obtained a quantity of ſugar: the berries are alſo conſidered as ſtomachic, carminative, and diaphoretic. Of their efficacy in many hydropical affections we have various relations from phyſicians of high authority; as Du Verney, Boerhaave, Hoffman, Van Swieten, &c. Authors, however, do not ſeem perfectly agreed which preparation of the Juniper is moſt efficacious; ſome preferring the rob or inſpiſſated decoction, while on the contrary Dr. Cullen diſapproves of this, as having unavoidably loſt a good part of its eſſential oil; (in which he ſuppoſes a great part of the efficacy of the Juniper to conſiſt); in the boiling. Hoffman, however, ſtrongly recommends the rob, and declares it to be of great utility in weakneſs of the ſtomach and inteſtines; and particularly ſerviceable when ſuch caſes occur in old people: but as the modern practice generally depends on more powerful, or ſtronger medicines, (the Juniper being conſidered in a ſecondary view), it may perhaps be allowed that as good a form as any for its uſe is that of a ſimple decoction; and this, either by itſelf, or with the aſſiſtance of a ſmall quantity of gin, may be a uſeful drink for hydropic patients. Medical writers have alſo commended it in ſcorbutic caſes, and in ſome cutaneous diſeaſes; but in theſe caſes a decoction prepared from the wood and the tops of the plant is thought preferable to that from the berries. We are told by Linneus that the Swedes prepare a beer from the berries, which they conſider as very efficacious in ſcorbutic caſes; and that the Laplanders drink infuſions of Juniper-berries as we do tea and coffee, for the ſame purpoſe. Juniper wine is ſometimes made, and is ſaid to be a very wholeſome one. Gum Sandarach, uſed for pounce, &c. is the gum or reſin of old Junipers. *Juniperus Sabina, or Savine,* is more powerful in its operations than the former, and has been much famed as an emmenagogue: it heats and ſtimulates the whole ſyſtem very conſiderably, and is ſaid to promote the fluid ſecretions: the leaves and tops of Savine have a moderately ſtrong, diſagreeable ſmell, and a hot, bitteriſh taſte: they give out their active matter to watery liquors, and ſtill more completely to rectified ſpirit; diſtilled with water they yield a large quantity of eſſential oil. Decoctions of the leaves, inſpiſſated to the form of an extract, retain a conſiderable ſhare of their pungency and warmth, together with their bitterneſs, and have ſome degree of ſmell, but not reſembling that of the plant itſelf. On inſpiſſating the ſpirituous tincture, there remains an extract conſiſting of two diſtinct ſubſtances; of which one is yellow, oily, bitteriſh, and very pungent; the other black, reſinous, tenacious, leſs pungent, and very aſtringent. Savine, when uſed for the purpoſe of an emmenagogue, has been ſometimes found to be too powerful; and it has even been ſuppoſed to poſſeſs the power of cauſing abortion: but this ſeems to be extremely doubtful, and it ſometimes fails as an emmenagogue; and its heating qualities are ſuch as to require caution in its adminiſtration. In the Edinburgh Infirmary it appears to have been uſed with great ſucceſs by Dr. Home, in caſes of amenorrhoea, given in powder, from a ſcruple to a dram, twice a day. Upon the whole, Savine may be conſidered as a warm ſtimulant and aperient, and particularly ſerviceable in uterine obſtructions proceeding from a laxity or weakneſs of the veſſels, or a cold, ſluggiſh indiſpoſition of the juices. The diſtilled oil, excluſive of the powers juſt mentioned, is alſo a ſtrong diuretic, and impregnates the urine with its ſmell. The doſe is two or three drops, or more.

Juniperus Lycia.—This is the ſpecies from which is taken the gum-reſin called Olibanum, which has a ſtrong ſmell, and a bitteriſh ſomewhat pungent taſte. When burnt it diffuſes a fragrant ſmell, and is ſuppoſed to have been the incenſe uſed by the ancients in their religious ceremonies, (though not the ſame with the ſubſtance known by that name in the ſhops). It is much employed by the Roman Catholics in their churches, for ſimilar uſes. As a medicine it has chiefly been uſed in diſorders of the head and breaſt, and in hæmoptoes, and alvine and uterine fluxes: the doſe from a ſcruple to a dram or more. It has alſo been uſed in plaſters, &c. and as an ingredient in various pills.]

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[o] Exot. 90. [p] Hort. kew. [q] Billardiere. [r] Pallas.

PROPAGATION AND CULTURE.

Theſe plants are all propagated by ſowing their ſeeds, the beſt ſeaſon for which is as ſoon as they are ripe, if they can then be procured; for when they are kept until ſpring before they are ſown, they will not come up until the ſecond year. The ground in which the ſeeds of the hardy ſorts are ſown, ſhould be freſh and light, but it ſhould not be dunged; it ſhould be well dug and levelled very even; then ſow your ſeeds thereon pretty thick, and ſift ſome earth over them about half an inch thick; this bed will require no farther care than only to keep it clear from weeds, and toward the middle or latter end of april, you will find ſome of your plants appear above ground, though, perhaps, the greateſt part of them may lie till the ſpring following before they come up; therefore you ſhould carefully clear the beds from weeds, and in very dry weather refreſh them with ſome water, which will greatly promote the growth of thoſe plants which are up, and alſo cauſe the other ſeeds to vegetate; but if the bed in which theſe are ſown is much expoſed to the ſun, it ſhould be ſhaded with mats in the day; for when the plants come firſt up, they will not bear too much heat. In this bed they ſhould remain till the next ſpring or ſecond autumn, when you muſt prepare ſome beds to tranſplant them into, which ſhould alſo be of light, freſh, undunged ſoil; and having well dug and cleanſed the ground from all noxious weeds and roots, you ſhould make it level; and then in the beginning of october, which is the proper ſeaſon for removing theſe plants, you ſhould raiſe up the young plants with a trowel, preſerving as much earth as poſſible to their roots, and plant them into beds about five or ſix inches aſunder each way, (or eighteen inches by nine or ten,) giving them ſome water to ſettle the earth to their roots; and if it ſhould prove very dry weather, you may lay a little mulch upon the ſurface of the ground round their roots, which will be of great ſervice to the plants. But as many of the ſeeds will be yet left in the ground where they are ſown, the beds ſhould not be diſturbed too much in taking up the plants; for I have known a bed ſown with theſe berries, which has ſupplied plants for three years drawing, ſome of the berries having lain ſo long in the ground before they ſprouted; therefore the ſurface of the beds ſhould be kept level, and conſtantly clean from weeds.

The plants may remain two years in theſe beds, obſerving to keep them clear from weeds; in the ſpring you ſhould ſtir the ground gently between them, that their roots may with greater eaſe ſtrike into it; after which time they ſhould be tranſplanted either into a nurſery, at the diſtance of three feet row from row, and eighteen inches aſunder in the rows, or into the places where they are to remain. The beſt ſeaſon to tranſplant them (as I before obſerved) is in the beginning of october, when you ſhould take them up carefully, to preſerve a ball of earth to their roots; and when planted, their roots ſhould be mulched; all which, if carefully attended to, as alſo obſerving to refreſh them with water in very dry weather until they have taken new root, will preſerve them from the danger of not growing; and they being extremely hardy in reſpect to cold, will defy the ſevereſt of our winters to injure them, provided they are not planted in a moiſt or rich ſoil.

In order to have theſe trees aſpire in height, their under branches ſhould be taken off, eſpecially where they are inclined to grow ſtrong, but they muſt not be kept too cloſely pruned, which would retard their growth; for all theſe Evergreen trees do more or leſs abound with a reſinous juice, which in hot weather is very apt to flow out from ſuch places as are wounded; ſo that it will not be adviſeable to take off too many branches at once, which would make ſo many wounds, from which their ſap in hot weather would flow in ſuch plenty, as to render the trees weak and unhealthy.

The Virginian Cedars grow to a very great height, and in their native country afford excellent timber for many uſes; but with us there are very few which are above twenty-five or thirty feet high, though there is no doubt of their growing larger; for they thrive very faſt after the three firſt years, and reſiſt the ſharpeſt froſt of our climate exceeding well, and are very apt to grow ſtraight and regular, provided they are not ſuffered to ſhoot out too much at bottom.

Theſe plants are alſo propagated by ſeeds, which muſt be procured from Virginia or Carolina (for they rarely produce ripe ſeeds in England) and ſown as was directed for the other Junipers; but as this ſeed cannot be procured in England till ſpring, ſo when ſown at that ſeaſon, it remains in the ground until the ſucceeding ſpring before the plants appear; therefore you muſt obſerve to keep the beds clear from weeds, and not ſuffer the ſeeds to be diſturbed, which is often the fault of ſome impatient people, who think, becauſe the plants do not riſe the firſt year, that they will never come up, and ſo dig up the ground again, whereby their ſeeds are buried; but if they are let remain, they ſeldom fail to grow, though ſometimes it is two years after ſowing before they come up. When the plants come up they muſt be carefully weeded, and in dry weather ſhould be refreſhed with water, which will greatly forward their growth; and the autumn following they ſhould have a little rotten tan laid between them, to keep out the froſt. In this bed the plants may remain till they have had two years growth, then they ſhould be traſplanted into other beds, as was directed before for the other ſorts, obſerving to preſerve a ball of earth to their roots; and after they are planted, if the ſeaſon prove dry, they muſt be carefully watered, and the ſurface of the ground covered with mulch, to prevent the ſun and wind from entering the earth to dry the fibres; but they ſhould not be too much watered, which often proves injurious to theſe trees, by rotting their tender fibres ſoon after they are emitted, whereby the plants have been often deſtroyed.

In theſe beds they may remain two years, obſerving to keep them clear from weeds; and in winter you ſhould lay a little freſh mulch upon the ſurface of the ground round their roots, which will prevent the froſt from penetrating to them, and effectually preſerve them; for while the plants are ſo young, they are liable to be injured by hard froſts, when too much expoſed thereto; but when they have attained a greater ſtrength, they will reſiſt the ſevereſt of our cold.

After two years, they ſhould either be removed into a nurſery (as was directed for the common Juniper) or tranſplanted where they are deſigned to remain, obſerving always to take them up carefully, otherwiſe they are ſubject to fail upon tranſplanting; as alſo to mulch the ground, and water them as was before directed, until they have taken root; after which they will require no farther care, than only to keep the ground clear about their roots, and to prune up their ſide branches to make them aſpire in height.

The ſoil in which you plant theſe trees ſhould be freſh and light, but muſt not be dunged, eſpecially at the time when they are planted; for dung is very hurtful to them, if it be not quite rotted to mould; therefore the mulch which is laid upon the ſurface of the ground ſhould not be dung, but rather ſome old tanners bark or ſea-coal aſhes, which will prevent the froſt from penetrating deep in the ground.

Theſe trees being thus managed, will in a few years riſe to a conſiderable ſtature, and by the variety of their evergreen leaves and manner of growth, will greatly add to the beauty of all plantations, if rightly diſpoſed, which indeed is what we ſeldom obſerve in any of the Engliſh gardens or wilderneſſes; for there are few people who conſider the different growths of the ſeveral trees with which they compoſe ſuch plantations, ſo as to place the talleſt growing trees the backwardeſt from ſight, and the next degree to ſucceed them, and ſo gradually diminiſhing till we come to the common Juniper, and others of the ſame growth, whereby all the trees will be ſeen, and the gradual declivity of their tops will appear like a verdant ſlope, and be much more agreeable to the ſight, as alſo more advantageous to the growth of the trees, than to place ſhrubs of humble growth near ſuch plants as will grow to the firſt magnitude, whereby the ſhrub is hid from ſight, and will be over-ſhadowed and deſtroyed: nor can the diſtance which each tree requires, be ſo juſtly proportioned any other way; for in this diſtribution, the largeſt trees being ſeparated by themſelves, may be placed at a due diſtance; and then thoſe of a middling growth ſucceeding, may be accordingly allowed ſufficient room; and the ſmaller, which are next the ſight, being placed much cloſer, will hide the naked ſtems of the larger trees, and have an agreeable effect to the ſight.

The Bermudas Cedar being a native of that iſland, and alſo of the Bahama Iſlands, being much tenderer than any of the former ſorts, except that of Jamaica, is not likely to thrive well in this country; for although many of theſe plants have lived ſeveral years in the open air in England, yet whenever a ſevere winter happens, it either kills them, or ſo much defaces them, that they do not recover their verdure in a year or two after.

Theſe plants are propagated by ſeeds in the ſame manner as the former, with only this difference, that theſe ſhould be ſown in pots or tubs of earth, that they may be removed into ſhelter in the winter time, otherwiſe the young plants are often hurt by hard froſts; but they will require no more care than only to be placed under a common hot-bed frame, where the glaſſes may be conſtantly kept off in mild weather, when they cannot have too much free air, and only covered in hard froſts. Theſe ſeeds conſtantly remain in the ground until the ſecond year before they come up, therefore the earth in the pots ſhould not be diſturbed; and in the ſummer time they ſhould be placed in the ſhade, to prevent the earth from drying too faſt; and in very dry weather they ſhould be often watered, but do not give too much water to them at once, which would rot the ſeeds.

The ſpring following, when the young plants come up, they muſt be carefully cleared from weeds, and in dry weather refreſhed with water: but ſhould ſtand, during the ſummer ſeaſon, in a place defended from ſtrong winds; and in winter muſt be placed under frames, where they may be covered in hard froſty weather, but muſt have open air when the weather is mild. In april following you ſhould tranſplant them each into a ſingle halfpenny pot filled with freſh light earth, being careful to raiſe them up with a ball of earth to their roots; and when they are planted, you ſhould water them, to ſettle the earth to their roots; then place the pots in a warm ſituation, where they may be defended from ſun and wind: but if you will beſtow a moderate hot-bed to plunge the pots in, it will greatly promote their taking new root; however, you muſt carefully defend them from the great heat of the ſun, which is injurious to them when freſh removed; but when they have taken root, you may expoſe them by degrees to the open air. If you ſuffer the pots to remain plunged all the ſummer, it will preſerve the earth therein from drying ſo faſt as it would do, if they were ſet upon the ground.

In october you ſhould again remove theſe plants into ſhelter, or elſe plunge their pots into the ground under a warm hedge, where they may be protected from the cold north and eaſt winds; and in the ſpring following you muſt ſhift the plants into pots a ſize larger, taking away ſome of the earth from the outſide of the ball, and adding ſome freſh, which will promote their growth; and ſo continue to manage them as was before directed, until you plant them out in the places where they are deſigned to remain; which ſhould not be done till they are four or five years old, by which time they will be ſtrong enough to bear the cold of our common winters.

The reaſon for my directing theſe plants to be preſerved in pots until they are planted out for good is, becauſe they are difficult to tranſplant, and being tender, will require ſome ſhelter while young; and whoever obſerves the method here laid down, will find the plants ſo managed to gain two years growth in ſix, from thoſe raiſed in the open air, and be in leſs danger of being deſtroyed; and as the trouble and expenſe in raiſing them this way is not great, it is worth practiſing, ſince in a few years the trees will recompenſe the trouble.

The timber of this tree is of a reddiſh colour, and very ſweet, and is commonly known in England by the name of Cedar Wood; though there are divers ſorts of wood called by that name, which come from very different trees, eſpecially in the Weſt Indies, where there are ſeveral trees of vaſtly different appearances and genera, which have that appellation: it is this wood which is uſed for pencils, as alſo to wainſcot rooms, and make ſtair-caſes, it enduring longer ſound than moſt other ſorts of timber, which, perhaps, may be owing to ſome extreme bitter taſte in the reſin, with which the tree abounds; for it is very remarkable, that the worms do not eat the bottoms of the veſſels built with this wood, as they do thoſe built with Oak; ſo that the veſſels built with Cedar are much preferable to thoſe built with any other ſort of timber, for the uſe of the Weſt India ſeas, but it is not fit for ſhips of war, the wood being ſo brittle as to ſplit to pieces with a cannon ball.

The Jamaica Juniper being more impatient of cold than the Bermudas, will not live through the winter in the open air in England, and the plants muſt be preſerved in pots and houſed in the winter; this is propagated by ſeeds, in the ſame way as the Bermudas Cedar; but if the pots are plunged into a moderate hot-bed the ſecond ſpring after the ſeeds are ſown, it will bring up the plants ſooner, and they will have more time to get ſtrength before winter.

All the other ſorts being hardy enough to live in the open air, are very well worth propagating, as they add to the variety of Evergreen plantations; ſome of the ſorts riſing to a very conſiderable height, may prove to be uſeful timber, and may be adapted to ſuch ſoils as will not ſuit many other trees.

The common Savin ſhould not be neglected, becauſe it is ſo very hardy as never to be injured by the ſevereſt froſt; and as this ſpreads its branches near the ground, if the plants are placed on the borders of woods, they will have a good effect in winter, by ſcreening the nakedneſs of the ground from ſight.

[The common Savin may be increaſed by ſlips, which will grow almoſt at any time. The upright Savin alſo may be propagated by ſlips planted in moiſt weather in auguſt, and kept ſhaded and watered in dry weather afterwards. The ſtriped Savin muſt be increaſed the ſame way, from the branches which are moſt variegated. They may alſo be raiſed by berries, when the plants produce any; and by theſe the moſt upright and beſt plants are produced.]

Moſt of the ſorts may be propagated by cuttings, which, if planted in autumn, (or at the end of auguſt) in a ſhady border, will take root; but thoſe plants which are raiſed from cuttings will never grow ſo upright, nor to ſo large a ſize as the plants which are raiſed from ſeeds; ſo that when theſe can be procured, it is much the better method, but the other is frequently practiſed on thoſe ſorts which do not perfect their ſeeds in England.

As ſeveral of theſe ſorts grow to the height of eighteen or twenty feet, the procuring as many of the ſorts as can be gotten from the countries of their growth, will be adding to the variety of our Evergreen plantations, which cannot be too much propagated in England, where, in general, our winters are temperate enough for them to thrive to advantage; and as the ſorts which are a little more tender than the others obtain ſtrength, they will be in leſs danger of ſuffering by ſevere winters, as we find by many other plants, which were ſo tender as not to live in the open air at firſt, but now defy the ſevereſt cold of our climate.

Jupicai. See *Xyris.*

Jupiter's Beard. See *Anthyllis.*

Jurepeba. See *Solanum.*

JUSSIÆA. (*So named by Linneus, from Antoine de Juſſieu, demonſtrator of plants in the royal garden at Paris. He edited Tournefort's Inſtitutes in* 1719, *and deſcribed plants in the Paris Memoirs for* 1709, *&c.*)

Lin. gen. n. 538. *Reich.* 585. *Schreb.* 741. *Gærtn. t.* 31. *Juſſ.* 319.

Claſſ. 10. 1. Decandria Monogynia.
Nat. order of *Calycanthemæ.* *Onagræ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-cleft, ſuperior, ſmall; *leaflets* ovate, acute, permanent.
COR. *Petals* five, roundiſh, ſpreading, ſeſſile.
STAM. *Filaments* ten, filiform, very ſhort. *Anthers* roundiſh.
PIST. *Germ* oblong, inferior. *Style* filiform. *Stigma* headed, flat, marked with five ſtreaks.
PER. *Capſule* oblong, crowned, five-celled, gaping at the corners.
SEEDS very many, diſpoſed in rows.

OBS. *Species exiſt in which a fifth part of the number is wanting.*
This genus differs from Oenothera *in the ſeſſile permanent calyx, having no tube. Hence* Oen. octovalvis & hirta, Linn. *belong to this genus.* Swartz.

ESSENTIAL CHARACTER.

Cal. four or five-parted, ſuperior. *Pet.* four or five. *Capſ.* four or five-celled, oblong, gaping at the corners. *Seeds* numerous, minute.

SPECIES.

[1. Juſſieua repens. *Creeping Juſſieua.*
Lin. ſpec. 555. *Reich.* 2. 281. *fl. zeyl. n.* 169. *Swartz obſ.* 172.
Oenothera herbacea repens. *Brown. jam.* 208. 3.
Nir-Carambu. *Rheed. mal.* 2. 99. *t.* 51. *Raii hiſt.* 1510.
β. J. adſcendens. *Lin. mant.* 69.
Creeping, flowers five-petalled ten-ſtamened, leaves ovate-oblong.

2. Juſſieua tenella.
Lin. ſyſt. 403. *Reich.* 2. 282. *mant.* 238. *Burm. ind.* 103. *t.* 34. *f.* 2.
Smooth, flowers five-petalled ſubſeſſile, leaves oppoſite linear-lanceolate.

3. Juſſieua peruviana. *Peruvian Juſſieua.*
Lin. ſpec. 555. *Reich.* 2. 282. *Feuill. peruv.* 2. 716. *t.* 9.
Upright, flowers five-petalled, peduncles leafy.]

4. Juſſieua pubeſcens. *Hairy Juſſieua.*
Lin. ſpec. 555. *Reich.* 2. 282. *Loefl. it.* 282. *n.* 205. *Sloan. jam.* 1. 201. *n.* 24.
Upright villoſe, flowers five-petalled ten-ſtamened ſeſſile.

4. Juſſieua ſuffruticoſa. *Shrubby Juſſieua.*
Lin. ſpec. 555. *ſyſt.* 403. *Reich.* 2. 282. *mant.* 381. *Gærtn. fruct.* 1. 159. *Rumph. amb.* 6. 49. *t.* 21. *f.* 1. *Herm. lugdb.* 396. (Lyſimachia.)
Upright villoſe, flowers four-petalled eight-ſtamened peduncled.

6. Juſſieua erecta. *Upright* or *red-ſtalked Juſſieua.*
Lin. ſpec. 556. *ſyſt.* 403. *Reich.* 2. 282. *mant.* 381. *fl. zeyl. n.* 170. *hort. upſ.* 103. *Gærtn. fruct.* 1. 159. *Swartz obſ.* 173. *Thunb. jap.* 180. *Vahl ſymb.* 1. 31.
Ludwigia capſulis oblongis. *Linn. hort. cliff.* 491.
Onagra perſicæ foliis, &c. *Plum. ſpec.* 7. *ic.* 175. *f.* 2.
Lyſimachia lutea non pappoſa erecta, &c. *Sloan. jam.* 1. 37. *t.* 11. *f.* 1.
Jaſminum catalonicum, fl. luteo. *Seba, theſ.* 1. 42. *t.* 26. *f.* 3.
Upright, ſmooth, flowers four-petalled eight-ſtamened ſeſſile.

[7. Juſſieua inclinata.
Lin. ſyſt. 403. *ſuppl.* 235.
Upright ſmooth, flowers four-petalled eight-ſtamened peduncled.

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8. Juſſieua octovalvis.
Swartz obſ. 142.
Oenothera octovalvis. *Lin. ſpec.* 492. *ſyſt.* 358. *Reich.* 2. 148. *Jacqu. amer.* 102. *t.* 70. *pict.* 52. *t.* 105. *Houtt. hiſt. nat.* 8. *t.* 48. *f.* 2. *Brown. jam.* 208. *n.* 1. *Plum. ſpec.* 7. *ic.* 275. *f.* 1. (Onagra.)
Upright, flowers four-petalled eight-ſtamened peduncled, capſules many-valved, leaves lanceolate.

9. Juſſieua hirta.
Swartz obſ. 142.
Oenothera hirta. *Lin. ſpec.* 491. *Reich.* 2. 149. *Brown. jam.* 208. 2. *Plum. ſpec.* 7. *ic.* 174. *f.* 2. (Onagra.)
Upright hirſute, flowers four-petalled eight-ſtamened, leaves ovate acuminate rough-haired underneath.]

10. Juſſieua Onagra.
Mill. dict. n. 4.
Onagra fol. perſicariæ amplioribus, parvo flore luteo. *Plum. cat.* 7.
Upright ſmooth branching, flowers four-petalled eight-ſtamened ſeſſile, leaves lanceolate.

11. Juſſieua hirſuta.
Mill. dict. n. 5.
Onagra erecta, caule rubro hirſuto, foliis oblongis, flore magno luteo. *Houſt. M. S. S.*
Upright hirſute ſimple, flowers five-petalled ten-ſtamened ſeſſile, leaves lanceolate.

DESCRIPTIONS, *&c.*

Theſe are moſtly herbaceous plants, but ſome are ſhrubby. Leaves alternate. Flowers ſolitary, axillary [a].

1. Roots ſimple, filiform, ſhort. Stem branching, creeping. Branches long, ſubdivided, divaricating, ſomewhat ſucculent, round, ſmooth. Leaves on ſhort petioles, ſcattered, ſmall, blunt, ſpreading, entire, very ſmooth; with ſmaller ones in the axils. Peduncles ſhort, one-flowered, round, thickiſh, ſmooth. Two very minute ſcales at the baſe of the germ. Flowers yellow, ſmall. Calyx five-parted: ſegments lanceolate, the length of the petals. Petals ſubſeſſile, ovate, blunt, veined. Germ attenuated at the baſe: ſtyle thick: ſtigma convex. Capſule thickiſh, opening longitudinally. Seeds diſpoſed longitudinally in five rows, angular, compreſſed.

Native of Jamaica, in moiſt watery places, flowering in the ſpring [b]. Browne ſays it is frequent in the low lands about Plaintain-garden river.

β. The Indian plant, which ſtands as a diſtinct ſpecies in Linneus's mantiſſa, has herbaceous aſcending, ſimple, even ſtems. Leaves petioled, ovate-oblong, even, blunt. Peduncles one-flowered, ſhorter than the leaf; but thoſe of the fruit the length of the leaf.

2. Stems ſmooth, with alternate branches. Leaves quite entire.—Native of Java [c].

3. Native of Lima.

4. Stem uſually brown, ſtrong, four or five feet high, having ſeveral hairy, red, angular branches, thick ſet on every ſide with long narrow hairy nerved leaves, ſeveral of which come out together, ſome larger, ſome ſmaller: the larger three inches long, and ſcarcely one broad, light green, downy and ſoft like velvet. Flowers large, yellow, on peduncles half an inch in length, very open. Capſule large, oblong, with four or five corners, containing much ſmall yellowiſh ſeed [d].

Native of Jamaica.] Mr. Miller ſays, that the ſeeds were ſent him by Dr. Houſtoun, and that it riſes with a hairy branching ſtalk two feet high; that it has narrow ſpear-ſhaped leaves, placed alternate; that the flowers come out towards the ends of the branches ſingly from the axils and are ſeſſile; that the petals are pretty large and yellow; that the ten ſtamens ſit upon a long germ, which becomes a capſule crowned by the calyx, and filled with ſmall ſeeds.

5. This riſes with a ſhrubby ſtalk near three feet high, and ſends out ſeveral ſide branches. Leaves oblong, hairy. The flowers come out from the ſide of the ſtalks ſingly, on ſhort peduncles. Petals yellow. The capſule has a great reſemblance to Cloves. It flowers in july and auguſt, and the ſeeds ripen in october.

[Linneus ſets it down as a native of India. Mr. Miller ſays it grows naturally at Campeachy, whence the ſeeds were ſent him by Mr. Robert Millar.

[In Linneus's mantiſſa it is ſaid that the ſtem is lofty, and alternately branched; the leaves lanceolate, ſcarcely petioled, pubeſcent as is the whole plant; the capſules a little ſhorter than the leaves, two inches long, ſtriated, ſubſeſſile: according to Gærtner, four-cornered, with prominent nerves along the middle, and ſtriated along the edges of the valves. Receptacle four-cornered-cruciate, columnar. Seeds very numerous, ovate-globular, ſlightly grooved on each ſide, ferru-

[a] Juſſieu. [b] Swartz. [c] Burm. [d] Sloane.

ginous, ſmooth, lucid, divided by a partition within. A bilocular ſeed in a capſular fruit is unuſual.

Gærtner remarks here that Ludwigia indeed differs ſufficiently from this genus in the fabric and ſituation of the receptacle of the ſeeds, but that the diſtinction between Juſſieua and Oenothera is merely factitious and imaginary.

6. Root annual. Stem from two to four feet high, herbaceous, very much branched, four-cornered, ſmooth, reddiſh. Branches filiform, quadrangular, erect, ſubdivided, pubeſcent. Leaves petioled, linear-lanceolate, entire, acuminate, nerved, ſmooth. Petioles very ſhort, red. Flowers abundant, yellow, ſmall. Calyx four-leaved; leaflets ovate-lanceolate, acuminate, ſpreading, ſtriated underneath, ſmooth. Petals four, diſtant, ovate, entire, concave, deciduous. Filaments eight, ſhorter than the petals, upright, contiguous to the piſtil. Anthers very minute, whitiſh, commonly glued to the ſtigma. Germ quadrangular, reddiſh, ſmooth. Style very ſhort, round and thick. Stigma ſpherical. Capſule elongated, quadrangular, retuſe, four-celled, four-valved. Seeds very minute, roundiſh, ferruginous[e].—Gærtner adds, that the capſule is ſlightly narrowed upwards and ſmooth; the partitions cohering with the angles of the receptacle and very narrow: the receptacle columnar, deeply four-grooved, with the angles compreſſed and correſponding with the partition: the ſeeds ovate, ſmooth and yellowiſh. According to Thunberg, though the perianth is commonly four-parted, yet it is ſometimes five-parted.

It is a vernal marſh plant, native of Jamaica, and others of the Weſt India iſlands, as well as of the Continent.—Mr. Miller cultivated it in 1739[f].

Thunberg found it in Japan, and alſo in Java and Ceylon; but in theſe latter places always with narrower leaves and ſubpeduncled flowers, whereas this plant has uſually leaves a quarter of an inch broad and ſeſſile flowers.

7. This is an annual plant, upright and wholly ſmooth. Stem ſimple, round, thick, porous, watery, rooting at the lower joints. Leaves obovate, blunt, petioled, ſcarcely longer than the petioles, ribbed, ſmooth. Peduncles one-flowered, a little longer than the petiole. Germ a little ſhorter than the peduncle, even, thickened, four-cornered, acute-angled. Petals four, ovate, larger, veined, very tender.

Native of Surinam, in marſhes. Found there by C. G. Dalberg[g].

8. Branches almoſt upright, four-cornered, pubeſcent. Leaves acuminate, entire, dotted underneath at the edge, nerved, pubeſcent; on ſhort petioles. Leaflets in the axils ovate, minute. Flowers on ſhort peduncles, large, yellow. Calyx ſeſſile, four-leaved: leaflets ovate-acuminate, pubeſcent. Petals four, three times as large as the calycine leaflets, diſtant, ovate or obovate, blunt, ſpreading, deciduous. Filaments eight, preſſed cloſe to the ſtyle up to the middle, the length of the piſtil, awl-ſhaped. Anthers ovate, incumbent, two-valved. Germ roundiſh-quadrangular, attenuated at the baſe, a little curved. Style thick. Stigma ſpherical. Capſule pedicelled, long, acuminate at the baſe, retuſe, four-celled, four or eight-valved. Seeds very many, roundiſh. Receptacle quadrangular.

Native of South America and the Weſt Indies, in marſhy watery places[h].

9. This is a ſhrubby plant, with a hiſpid ſtem. Branches hiſpid, alternate. Leaves ſeſſile, marked with parallel veins. Flowers large, ſeſſile, contained in a large, hiſpid, four-leaved calyx[i].

Native of South America and Jamaica.]

10. This has a branching ſmooth ſtalk near three feet high, with leaves on ſhort foot-ſtalks. Flowers ſmall and yellow.

It was ſent to Mr. Miller from Carthagena, by Dr. Houſtoun.

11. This riſes with ſingle, upright, red ſtalks three feet high, hairy and channelled. The leaves ſtand nearer together than in any of the other ſorts. Flowers axillary, towards the top of the ſtalk, compoſed of five large yellow petals. Capſules an inch long.

Sent from La Vera Cruz by Dr. Houſtoun. [His ſpecimen is in Sir Joſeph Banks's herbarium, and it is there named Juſſieua elliptica.]

PROPAGATION AND CULTURE.

All theſe ſorts are propagated by ſeeds, which ſhould be ſown early in the ſpring, in pots filled with a ſoft loamy ſoil, and plunged into a moderate hot-bed; but as theſe ſeeds often lie a whole year in the ground before they vegetate, the earth muſt be kept moiſt, and the glaſſes of the hot-bed ſhaded in the heat of the day, by this method the ſeeds may be brought ſoon to vegetate; when the plants come up, and are fit to remove, they ſhould be each planted into a ſmall ſeparate pot, filled with light loamy earth, and plunged into a hot-bed of tanners bark, where they ſhould be ſhaded from the ſun till they have taken new root; after which they ſhould have free air admitted to them every day, in proportion to the warmth of the ſeaſon; they muſt alſo be frequently refreſhed with water, but it muſt not be given to them in too great plenty: when the roots of the plants have filled theſe ſmall pots, the plants ſhould be removed into others a ſize larger; and if the plants are too tall to ſtand under the frames of the hot-bed, they ſhould be removed into the bark-ſtove, where they may remain to flower and perfect their ſeeds; for when the plants riſe early in the ſpring, and are brought forward in hot-beds, all the ſorts will flower and perfect their ſeeds the ſame year, which is better than to have them to keep through the winter.

[JUSSIEUA. See *Jatropha.*]

JUSTICIA. (*So named by Houſtoun from James Juſtice, Eſq. F. R. S. one of the principal Clerks of Seſſion in Scotland, author of the Britiſh Gardener's Director,* 1764.)

Lin. gen. n. 27. *Reich.* 28. *Schreb.* 35. *Houſt. reliqu.* 1. *Gærtn. t.* 54. *Juſſ.* 104. Adhatoda. *Tournef. t.* 79.

Claſſ. 2. 1. Diandria Monogynia.

Nat. order of *Perſonatæ. Acanthi*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, very ſmall, five-parted, acute, upright, narrow.

COR. one-petalled, ringent. *Tube* gibboſe; *Border* two-lipped: *Lip ſuperior* oblong, emarginate. *Lip inferior* of the ſame length, reflex, trifid.

STAM. *Filaments* two, awl-ſhaped, hid under the upper lip. *Anthers* upright, bifid at the baſe.

PIST. *Germ* top-ſhaped. *Style* filiform, length and ſituation of the ſtamens. *Stigma* ſimple.

PER. *Capſule* oblong, obtuſe, narrowed at the baſe, two-celled, two-valved; the partition oppoſite to the valves, gaping with an elaſtic claw.

SEEDS roundiſh.

OBS. *The upper lip of the corolla differs in point of ſituation.*

Some ſpecies recede ſo much from this character as to ſeem of a diſtinct genus.

cf. Mant. p. 172. *R.*

ESSENTIAL CHARACTER.

Cor. ringent. *Capſ.* two-celled, opening with an elaſtic claw. *Stam.* with a ſingle anther.

SPECIES.

* *With a double calyx.*

[1. Juſticia faſtuoſa. *Superb Juſticia.*

Lin. ſyſt. 62. *Reich.* 1. 41. *mant.* 172. *Vahl ſymb.* 1. 2. *t.* 1. & 2. 13.

Shrubby, leaves lanceolate-elliptic, flowers in terminating thyrſes, calyxes two-flowered.

2. Juſticia Forſkahlei.

Vahl ſymb. 1. 2. *Forſk. deſcr.* 4. *n.* 9. *Lin. mant.* 173.

Shrubby, leaves ovate acuminate, flowers in axillary and terminating thyrſes, calyxes one-flowered.

3. Juſticia purpurea.

Lin. ſpec. 23. *ſyſt.* 63. *Reich.* 1. 45. *Oſb. it.* 230. *Vahl ſymb.* 2. 13. *Gærtn. fruct.* 1. 255. *Lour. cochinch.* 25.

Herbaceous, branches pubeſcent, flowers in axillary and terminating ſpikes, bractes lanceolate ſmooth.

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[e] Swartz.

[f] Hort. kew.

[g] Linn. ſuppl.

[h] Swartz.

[i] Plumier.

4. Juſticia verticillaris.
Lin. ſyſt. 62. *ſuppl.* 85. *Vahl ſymb.* 2. 13.
Villoſe, leaves ovate, flowers axillary in whorls, outer calyxes awnleſs.

5. Juſticia ariſtata.
Vahl ſymb. 2. 2.
Villoſe, leaves ovate, flowers axillary in whorls ſubſeſſile, outer calyxes awned.

6. Juſticia chinenſis.
Lin. ſpec. 22. *Reich.* 1. 44. *Vahl ſymb.* 1. 4. *Lour. cochinch.* 25. *Burm. ind.* 8. *t.* 4. *f.* 1.
J. ſexangularis. *Forſk. deſcr.* 5. *n.* 13.
Herbaceous, leaves ovate, peduncles axillary in whorls trifid, bractes ovate mucronate coloured at the baſe.

7. Juſticia triflora.
Vahl ſymb. 1. 3. *Forſk. deſcr.* 4. *n.* 10.
Herbaceous, leaves ovate, peduncles axillary elongated ſubtriflorous, bractes linear-lanceolate.

8. Juſticia ſerpens.
Vahl ſymb. 2. 2.
Herbaceous creeping, leaves oblong ſmooth, flowers axillary ſolitary.

9. Juſticia ſulcata.
Vahl ſymb. 2. 13.
Dianthera ſulcata. *Vahl ſymb.* 1. 4. *Dict. n.* 8.
Herbaceous, leaves ovate-cordate, ſpikes terminating, flowers in whorls.

10. Juſticia bicalyculata.
Vahl ſymb. 2. 13.
J. ligulata. *Cavan. hiſp.* 52. *n.* 79. *t.* 71. *Lamarck encycl. n.* 37.
Dianthera bicalyculata. *Retz. in act. holm.* 1775. *p.* 297. *t.* 9. *Vahl ſymb.* 1. 6. *Dict. n.* 12.
D. malabarica. *Lin. ſyſt.* 63. *ſuppl.* 85. *Gærtn. fruct.* 1. 240.
Leaves ovate-acuminate, flowers in axillary dichotomous panicles, outer bracte linear double the length of the other, anthers binate.

11. Juſticia bivalvis.
Lin. ſpec. 23. *ſyſt.* 63. *Reich.* 1. 45. *Vahl ſymb.* 1. 3.
J. foetida. *Forſk. deſcr.* 5. *n.* 12.
Folium tinctorum. *Rumph. amb.* 6. 51. *t.* 22. *f.* 1.
Shrubby, leaves ovate-lanceolate, peduncles axillary trifid, lateral pedicels two-flowered, bractes ovate awned nerved.]

** *With a ſingle calyx.*

Corollas two-lipped; lips undivided.

12. Juſticia ſexangularis. *Chickweed-leaved Juſticia.*
Lin. ſpec. 23. *Reich.* 2. 44. *hort. cliff.* 10. *n.* 3. *Vahl.* 2. 13.
Herbaceous, leaves ovate, peduncles three-flowered, bractes wedge-ſhaped, anthers parallel.

13. Juſticia ſcorpioides.
Lin. ſpec. 21. *Reich.* 1. 41. *Vahl ſymb.* 2. 3. *Reliqu. Houſt. t.* 1.
Shrubby, branches round, leaves lanceolate-ovate hirſute ſeſſile, ſpikes axillary recurved, bractes minute, anthers parallel.

[14. Juſticia aſſurgens.
Lin. ſpec. 23. *Reich.* 1. 45. *amœn.* 5. 391. *Swartz obſ.* 13. *Brown. jam.* 118. *t.* 2. *f.* 1. *Sloan. jam.* 1. 159.
Herbaceous, branches angular, leaves ovate-elliptic, ſpikes axillary and terminating branched, flowers alternate, bractes linear, anthers parallel.

*** *Corollas two-lipped; lower lip divided.*

15. Juſticia acaulis.
Lin. ſyſt. 62. *ſuppl.* 84. *Vahl ſymb.* 2. 3. *Retz. obſ.* 4. 7.
Stemleſs, leaves crenate, veins villoſe underneath.]

16. Juſticia Ecbolium. *Long-ſpiked Juſticia.*
Lin. ſpec. 20. *ſyſt.* 61. *Reich.* 1. 40. *fl. zeyl. n.* 17. *Fabric. helmſt.* 217. *Vahl ſymb.* 1. 2. *Lour. cochinch.* 23.
J. viridis. *Forſk. deſcr.* 5. *n.* 14.
Adhatoda ſpica longiſſima, flore reflexo. *Burm. zeyl.* 7. *t.* 4. *f.* 1.
Carim-curini. *Rheed. mal.* 2. 31. *t.* 20. *Pluk. phyt. t.* 171. *f.* 4.
Shrubby, ſpikes terminating four-cornered, bractes ovate imbricate ciliate mucronate, upper lip linear reflex, anthers parallel.

[17. Juſticia pulcherrima.
Lin. ſyſt. 61. *ſuppl.* 84. *Jacqu. amer.* 6. *t.* 2. *f.* 4. *pict.* 9. *t.* 259. *f.* 1. *Vahl ſymb.* 2, 14.
Shrubby, ſpikes axillary and terminating, bractes ovate imbricate ciliate awnleſs, upper lip lanceolate ſtraight.

18. Juſticia carthaginenſis.
Lin. ſpec. 1663. *ſyſt.* 63. *Reich.* 1. 45. *Vahl ſymb.* 2. 14. *Jacqu. amer.* 5. *t.* 5. *pict.* 8. *t.* 7.
Herbaceous, leaves elliptical, ſpikes axillary and terminating, bractes imbricate all wedge-ſhaped, ciliate, upper lip emarginate, anthers binate.

19. Juſticia tetragona.
Vahl ſymb. 3. 5.
Shrubby, leaves crenate ſmooth, ſpikes terminating four-cornered, bractes ovate imbricate in four rows keeled ciliate.

20. Juſticia coccinea. *Scarlet-flowered Juſticia.*
Vahl ſymb. 3. 6. *Aubl. guian.* 10. *t.* 3. *Ait. hort. kew.* 1. 26. *Smith ic. rar.* 8.
Shrubby, leaves and bractes elliptical acuminate, upper lip undivided, anthers parallel.

21. Juſticia hirſuta.
Vahl ſymb. 2. 3.
Herbaceous, leaves toothed, ſpikes axillary and terminating four-cornered, bractes ovate imbricate hirſute.

22. Juſticia ſphæroſperma.
Vahl ſymb. 2. 3.
Herbaceous, ſpikes axillary oppoſite in pairs on each ſide, bractes linear elongated, ſeeds globular ſhining.

23. Juſticia Gandaruſſa.
Lin. ſyſt. 62. *ſuppl.* 85. *Vahl ſymb.* 2. 4.
Shrubby, leaves lanceolate elongated, ſpikes terminating leafy, flowers in whorls, bractes minute, upper lip undivided, anthers binate.

24. Juſticia procumbens.
Lin. ſpec. 22. *Reich.* 1. 43. *fl. zeyl. n.* 19. *Vahl ſymb.* 2. 14. *Burm. ind.* 8. *Pluk. phyt. t.* 56. *f.* 3. & *t.* 392. *f.* 4.
Herbaceous, ſtem procumbent, leaves lanceolate quite entire, ſpikes axillary and terminating, calyxes four-cleft.

25. Juſticia echioides.
Lin. ſpec. 22. *Reich.* 1. 44. *fl. zeyl. n.* 21. *Vahl ſymb.* 2. 14. *Herm. lugdb. t.* 669. (Euphraſiæ affinis.)
Herbaceous, leaves lanceolate-linear rough-haired, ſpikes axillary oppoſite pointing one way aſcending, anthers parallel bearded at the baſe.

26. Juſticia longifolia.
Vahl ſymb. 2. 4.
Herbaceous, leaves lanceolate elongated, ſpikes axillary in pairs oppoſite pointing one way.

27. Juſticia latifolia.
Vahl ſymb. 2. 4.
Shrubby, leaves ovate acuminate, ſpikes terminating ſomewhat branched, lower flowers in whorls.

28. Juſticia picta.
Lin. ſpec. 21. *ſyſt.* 62. *Reich.* 1. 41. *Vahl ſymb.* 2. 14. *Rumph. amb.* 4. 73. *t.* 30. *Rheed. mal.* 6. 111. *t.* 60. *Lour. cochinch.* 24.
Shrubby, leaves ovate painted, ſpikes axillary and terminating, flowers in whorls, upper lip bifid, anthers parallel.

29. Juſticia nitida.
Vahl ſymb. 2. 5. *Swartz prodr.* 13. *Jacqu. amer.* 5.
Shrubby, leaves elliptic acuminate, racemes ſpike-form whorled, bractes minute, pedicels and calyxes ſmooth, anthers parallel.

30. Juſticia ſtricta.
Vahl ſymb. 2. 6.
Herbaceous, leaves lanceolate-elliptic, racemes axillary two-parted pointing one way; filaments ſmooth.

31. Juſticia paniculata.
Vahl ſymb. 2. 5. *Burm. ind.* 9. *Rheed. mal.* 9. 109. *t.* 56.
Herbaceous, leaves lanceolate, panicles axillary and terminating dichotomous, flowers pointing one way, filaments hirſute, capſules compreſſed.

32. Juſticia nutans.
Vahl ſymb. 2. 6. *Burm. ind.* 10. *t.* 5. *f.* 1.
Herbaceous, leaves toothed racemes terminating nodding at top, flowers inverted.

33. Juſticia naſuta.
Lin. ſpec. 23. *ſyſt.* 63. *Reich.* 1. 45. *Vahl ſymb.* 2. 15. *Curt. magaz.* 325. *Rheed. mal.* 9. 135. *t.* 69.
Suffruticoſe, leaves elliptic quite entire, peduncles axillary dichotomous, upper lip upright bifid, anthers divaricating.

34. Juſticia ſcandens.
Vahl ſymb. 2. 7.
Shrubby, leaves ovate acuminate ſubrepand, branches villoſe, peduncles axillary trichotomous divaricating.

35. Juſticia ciliaris. *Ciliated Juſticia.*
Lin. ſyſt. 62. *ſuppl.* 84. *Jacqu. hort.* 2. *t.* 104. *Ait. hort. kew.* 1. 27.
Herbaceous, leaves lanceolate bluntiſh, flowers axillary oppoſite, anthers parallel appendicled.

36. Juſticia ſecunda.
Vahl ſymb. 2. 7.
Herbaceous, leaves ovate-lanceolate acuminate, racemes terminating compound, racemelets pointing one way, anthers binate.

37. Juſticia debilis.
Vahl ſymb. 2. 15.
Dianthera debilis. *Vahl ſymb.* 1. 5. *Forſk. deſcr.* 9. *n.* 23. *Dict. n.* 10.
Shrubby, ſpikes axillary and terminating, bractes ovate imbricate ciliate, anthers binate.

38. Juſticia violacea.
Vahl ſymb. 2. 15.
Dianthera violacea. *Vahl ſymb.* 1. 6. *Dict. n.* 11.
Shrubby, leaves lanceolate, ſpikes terminating, bractes lanceolate imbricate, ciliate, anthers binate.

39. Juſticia Rohrii.
Vahl ſymb. 3. 6.
Herbaceous, leaves elliptic quite entire, ſpikes terminating compound imbricate pubeſcent, bractes ovate, anthers binate.

40. Juſticia polyſtachya.
Vahl ſymb. 2. 7. *t.* 26.
Herbaceous, leaves lanceolate-ovate, ſpikes axillary oppoſite pointing one way, bractes ovate hirſute, anthers binate.

41. Juſticia retuſa.
Vahl ſymb. 2. 8.
Herbaceous, leaves ovate acuminate, ſpikes terminating, bractes obovate ſubretuſe imbricate, anthers binate.

42. Juſticia flava.
Vahl ſymb. 2. 15.
Dianthera flava. *Vahl ſymb.* 1. 5. *Forſk. deſcr.* 9 *n.* 24. *Dict. n.* 9.
Shrubby, leaves lanceolate-oblong, ſpikes terminating, flowers in pairs, bractes lanceolate blunt.

43. Juſticia americana.
Vahl ſymb. 2. 15.]
Dianthera americana. *Lin. ſpec.* 24. *Reich.* 1. 46. *Gron. virg.* 6. 5. *Dict. n.* 1.
Herbaceous, leaves linear-lanceolate, ſpikes axillary ſolitary like corymbs, peduncles filiform alternate the length of the leaves, anthers binate.

[44. Juſticia punctata.
Vahl ſymb. 2. 15.
Dianthera punctata. *Vahl ſymb.* 1. 4. *Dict. n.* 7.
D. americana β. *Forſk. deſcr.* 9. *n.* 25.
Herbaceous, leaves lanceolate-ovate, ſpikes terminating, flowers remote in a ſort of whorl, bractes lanceolate acuminate.

45. Juſticia euſtachiana.
Vahl ſymb. 2. 15. *Houtt. hiſt. nat.* 3. 46. *t.* 18. *f.* 2.
Dianthera euſtachiana. *Lin. ſyſt.* 64. *Jacqu. amer.* 4. *t.* 4. *pict.* 8. *t.* 5.
Shrubby, leaves oblong acuminate, ſpikes axillary and terminating, flowers in remote whorls two or three together, ſolitary at top, bractes wedge-ſhaped.

46. Juſticia pectoralis.
Vahl ſymb. 2. 15. *Swartz prodr.* 13. *obſ.* 14.
Dianthera pectoralis. *Lin. ſyſt.* 64. *Jacqu. amer.* 3. *t.* 3. *pict.* 8. *t.* 4. *Brown. jam.* 118. *n.* 3.
Herbaceous, leaves lanceolate petioled, ſpikes panicled, bractes minute, upper lip undivided, anthers binate.

47. Juſticia comata.
Vahl ſymb. 2. 15. *Swartz obſ.* 14.
Dianthera comata. *Lin. ſyſt.* 63. *Dict. n.* 2.
Herbaceous, leaves linear-lanceolate ſubſeſſile, ſpikes ſub-umbelled-whorled, bractes minute, anthers binate.

48. Juſticia undulata.
Vahl ſymb. 2. 8.
Dianthera hyſſopifolia. *Burm. ind.* 11. *t.* 5. *f.* 2.
Herbaceous, leaves lanceolate waved, peduncles terminating umbelled ſimple and trifid, anthers binate.

49. Juſticia frondoſa.
Vahl ſymb. 2. 8.
Herbaceous, umbels axillary peduncled compound, peduncles elongated, bractes obovate rhombed ſmooth, blunt, anthers binate.

50. Juſticia pubeſcens.
Vahl ſymb. 2. 9.
Shrubby, peduncles axillary oppoſite four-flowered pedicelled, bractes ovate-roundiſh mucronate pubeſcent, anthers binate.

51. Juſticia lævigata.
Vahl ſymb. 2. 9.
Shrubby, peduncles axillary oppoſite, three-flowered pedicelled, bractes oblong mucronate pubeſcent, anthers binate.

52. Juſticia cuſpidata.
Vahl ſymb. 2. 9.
Dianthera verticillata. *Forſk. deſcr.* 9.
Peduncles axillary in whorls ſubtriflorous pedicelled, bractes wedge-form awned, anthers binate.

53. Juſticia biflora.
Vahl ſymb. 2. 9.
Suffruticoſe, peduncles axillary two-flowered pedicelled equalling the leaves, bractes awl-ſhaped, anthers binate.

54. Juſticia ſeſſilis.
Lin. ſpec. 1663. *ſyſt.* 62. *Jacqu. amer.* 3. *t.* 2. *f.* 2. *pict.* 8. *t.* 3.
Shrubby, leaves ovate-acute ſubſerrate, flowers axillary ſolitary ſeſſile, upper lip quite entire.

55. Juſticia nigricans.
Lour. cochinch. 24.
Shrubby, leaves lanceolate-linear blunt blackiſh, ſpikes diſtich terminating.

56. Juſticia tinctoria.
Lour. cochinch. 25.
Herbaceous, leaves lanceolate ſubcrenate pubeſcent, flowers axillary, heaped.]

**** *Corollas ringent.*

57. Juſticia Adhatoda. *Malabar Nut.*
Lin. ſpec. 20. *ſyſt.* 61. *Reich.* 1. 40. *fl. zeyl. n.* 16. *hort. upſ.* 7. *cliff.* 9. *Vahl ſymb.* 2. 16. *Sabb. hort. rom.* 3. *t.* 10. *Fabric. helmſt.* 215.
Adhatoda zeylanenſium. *Herm. lugdb. t.* 643. *Pluk. phyt. t.* 173. *f.* 3.
Ecbolium. *Riv. mon.* 88.
Arboreous, leaves ovate-lanceolate acuminate, ſpikes axillary oppoſite, bractes ovate-elliptic leafy, anthers parallel.

[58. Juſticia Betonica.
Lin. ſpec. 21. *ſyſt.* 62. *Reich.* 1. 40. *fl. zeyl. n.* 18. *Burm. ind.* 8.
Betonica fruteſcens. *Bont. jav.* 146?
Bem-curini. *Rheed. mal.* 2. 33. *t.* 21. *Raii hiſt.* 1709.
Shrubby, leaves elliptic, ſpikes terminating elongated, bractes ovate-acuminate membranaceous netted coloured, anthers binate appendicled.

59. Juſticia repens.
Lin. ſpec. 22. *ſyſt.* 63. *Reich.* 1. 44. *fl. zeyl. n.* 20. *Herm. zeyl.* 21.
Herbaceous, leaves elliptic ſubſeſſile, ſpikes axillary and terminating pointing one way ſmooth, bractes ovate membranaceous at the edge, anthers binate appendicled.

60. Juſticia pectinata.
Lin. ſpec. 22. *ſyſt.* 63. *Reich.* 1. 44. *amoen.* 4. 299. *Vahl ſymb.* 2. 16.
J. parviflora. *Retz. obſ.* 5. 9. *n.* 4.
Herbaceous, leaves oblong, ſpikes axillary pointing one way tomentoſe, bractes half-lanceolate diſtich.

61. Juſticia ſanguinolenta.
Vahl ſymb. 2. 10.
Herbaceous, ſtem creeping, leaves oblong, peduncles axillary ſolitary one-flowered.

62. Juſticia japonica.
Vahl ſymb. 2. 16.
Dianthera japonica. *Thunb. jap.* 21. *Lin. ſyſt.* 64. *Dict. n.* 3.
Herbaceous, leaves ovate-oblong acuminate, peduncles axillary alternate four or five-flowered pedicelled, bractes lanceolate ciliate.

63. Juſticia triſulca.
Vahl ſymb. 2. 10.
Dianthera triſulca. *Forſk. deſcr.* 7.
Shrubby, leaves oblong blunt, peduncles axillary ſubtriflorous oppoſite, flowers ſeſſile, anthers binate.]

64. Juſticia hyſſopifolia. *Snap-tree.*
Lin. ſpec. 21. *ſyſt.* 62. *Reich.* 1. 43. *hort. cliff.* 10. *Mill. fig. t.* 13. *Fabric. helmſt.* 218. *Houtt. hiſt. nat.* 4. *t.* 18. *f.* 3. *Pluk. phyt. t.* 280. *f.* 1.
Shrubby, leaves lanceolate blunt, peduncles axillary one or two-flowered, bractes ſhorter than the calyx, calycine ſegments oblong, anthers binate appendicled.

[65. Juſticia orchioides.
Lin. ſyſt. 62. *ſuppl.* 85. *Ait. hort. kew.* 1. 28.
Shrubby, leaves lanceolate ſeſſile, peduncles axillary ſolitary one-flowered, bractes ſhorter than the calyx, anthers binate appendicled.

66. Juſticia madurenſis.
Vahl ſymb. 2. 17. *Burm. ind.* 9. *t.* 4. *f.* 3.
Shrubby, leaves oblong toothed, peduncles axillary one-flowered.

67. Juſticia cuneata.
Vahl ſymb. 2. 10.
Shrubby, leaves obovate emarginate, flowers axillary ſolitary ſeſſile, anthers binate.

68. Juſticia tranquebarenſis.
Lin. ſyſt. 62. *ſuppl.* 85. *Vahl ſymb.* 2. 17.
J. parvifolia. *Lamarck.*
Suffruticoſe, leaves obovate on hoary branches, flowers axillary ſolitary ſeſſile, bractes remote obcordate, anthers binate appendicled.

69. Juſticia odora.
Vahl ſymb. 2. 11.
Dianthera odora. *Forſk. deſcr.* 8.
Shrubby, branches ſmooth, leaves roundiſh, flowers axillary ſolitary ſeſſile oppoſite.

***** *Corollas almoſt equal.*

70. Juſticia infundibuliformis.
Lin. ſpec. 21. *ſyſt.* 62. *Reich.* 1. 41. *Houtt. hiſt. nat.* 4. *t.* 18. *f.* 1.
Shrubby, leaves lanceolate-ovate in fours, ſpikes terminating.

71. Juſticia ſinuata.
Vahl ſymb. 2. 11.
J. longifolia. *Forſt. flor. auſtral.* 4. *n.* 13.
Shrubby, leaves linear-oblong ſinuate-pinnatifid, peduncles axillary trifid, corollas ſalver-ſhaped, anthers parallel.]

72. Juſticia ſpinoſa.
Lin. ſpec. 1663. *ſyſt.* 62. *Reich.* 1. 41. *Jacqu. amer.* 2. *t.* 2. *f.* 1. *pict.* 7. *t.* 2. *Vahl ſymb.* 2. 17.
Shrubby, leaves ovate or obovate, ſpines axillary, lateral peduncles ſimple, corollas ſalver-ſhaped, anthers parallel.

[73. Juſticia repanda.
Forſt. flor. auſtral. 3. *n.* 12.
Shrubby, leaves elliptic repand, peduncle axillary trifid, corollas ſalver-ſhaped, anthers parallel.

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74. Juſticia armata.
Swartz prodr. 13.
Shrubby, prickly, leaves oblong emarginate coriaceous ſhining.

75. Juſticia acicularis.
Swartz prodr. 13.
Shrubby, diffuſed, ſpiny, ſpines briſtle-ſhaped, flowers peduncled axillary ſolitary.

76. Juſticia reptans.
Swartz prodr. 13.
Stem herbaceous creeping, leaves blunt, ſpike terminating undivided.

77. Juſticia humifuſa.
Swartz prodr. 14.
Stem herbaceous decumbent, leaves ovate and cordate, ſpikes umbelled.

78. Juſticia nemoroſa.
Swartz prodr. 14.
Stem herbaceous four-cornered ſomewhat upright, leaves ovate-lanceolate, ſpikes ovate.]

79. Juſticia fruticoſa.
Mill. dict. n. 3.
J. fruteſcens & hirſuta, foliis oblongis pediculis longiſſimis, flore rubro. *Houſt. M. S. S.*
Shrubby, leaves ovate or ovate-lanceolate hirſute petioled, bractes cordate-acuminate.

80. Juſticia arborea.
Mill. dict. n. 7.
Adhatoda arborea, foliis oblongis ſubtus villoſis, floribus ſpicatis albis. *Houſt.*
Arboreous, leaves lanceolate-ovate ſeſſile tomentoſe underneath, flowers in cluſtered terminating ſpikes.

DESCRIPTIONS, *&c.*

[This genus is divided by Linneus into ſhrubby and herbaceous, but the known ſpecies are become ſo numerous, and the duration of the ſtem is ſo uncertain or difficult to aſcertain in plants of India cultivated in our ſtoves, or in ſpecimens ſent from hot countries, that Vahl has ſubſtituted other circumſtances of ſubdiviſion taken from the calyx and corolla, as adopted above.

It appears from late obſervations of Jacquin, Juſſieu, Vahl, &c. that the two anthers on each filament are not a ſufficient generic diſtinction; for in ſome ſpecies of Dianthera the filaments are divided into two ſegments, each of which has an anther; but in others the filaments are undivided, and have two anthers indeed but ſo approximated as almoſt to coaleſce into one. But not only Diantheras properly ſo called have two anthers, but moſt of the Juſticias, if not all, are really Diantheras; for not only ſeveral of Linneus's Juſticias have two anthers quite diſtinct, as J. hyſſopifolia, orchioides, &c. but the reſt have generally twin or double anthers, with this difference, that being parallel to each other they ſeem to be but one, although they are really two.

If this natural genus, conſiſting of Juſticia and Dianthera, is to be ſeparated, Vahl recommends it to be grounded on the capſule rather than the anthers [a].

The ſpecies in the firſt ſection might very well form a diſtinct genus, and accordingly were conſidered as ſuch by the late Dr. Solander. Some of them rather belong to the claſs Didynamia and the genus Ruellia, as J. pulcherrima, infundibuliformis, gangetica, &c.

Some of the ſpecies (n. 9, 16. 31. 37, 38. 42, 43, 44. 47. 62.) are repeated from our article DIANTHERA, becauſe they more properly belong to this place.

1. Stem round, ſmooth and even. Leaves oppoſite, petioled, quite entire, with alternate veins, hairy underneath and round the edge. Flowers very abundant, cluſtered in axillary racemules, not longer than the leaves. Calyx even, the ſize of a grain of wheat, receding in this and other parts of the flower ſo much as to warrant the making this plant of a genus ſeparate from Juſticia [b].

This is ſufficiently diſtinct from the next ſpecies in its elliptic leaves narrowing to both ends, emarginate at top, uſually ſmooth; in its compound elongated terminating raceme; in its flowers pointing one way, with roundiſh mucronate floral leaves; and in the four-parted outer calyxes incloſing two flowers [c].

Native of Arabia Felix and the iſland of St. Johanna.

2. Branches at bottom obſcurely angular, purpliſh, very ſmooth, jointed: joints three inches long, marked with four lines. Leaves remote, ſpreading very much, quite entire, hairy on the veins beneath and about the edge, two inches long. Petiole hairy, half an inch in length. Peduncles axillary, ſolitary, very ſhort, oppoſite, ſometimes ſingle, but more frequently bearing three ſubſeſſile ſpikes at top. Spikes upright, an inch

[a] Symb. 2. 11, 12.
[b] Linn. mant.
[c] Vahl.

in length. Flowers cluſtered, imbricate. There is an ovate petioled acute deciduous floral leaf at the baſe of each calyx. Bracte ſolitary, linear. Scales three minute, membranaceous at the baſe of the inner calyx as in the preceding.—Native of Arabia Felix[d].

3. Stem rooting, brachiate. Leaves broad-ovate, mucronate at top and bottom, ſmooth, petioled, quite entire. Spikes on the ſides and at the tops of the branches, pointing one way. Bractes narrow, the length of the capſules. Corollas purple; lips upright, one linear and very narrow, the other wide and three-lobed. Stamens purple, the length of the corolla[e].

Stem upright, branching, jointed, three feet high. Leaves oppoſite, ciliate about the edge. Lower lip of the corolla turbinate-oblong, very blunt. Anthers oblong[f].

Capſule ſmall, ovate-lanceolate, elongated into the peduncle tranſverſely compreſſed, opening elaſtically from the peduncle. Partition bifid. Receptacle none; but the ſeeds ſeſſile in the axils of the claws. Seed ſingle in each cell, ovate, ſlightly emarginate at the umbilicus, compreſſed a little, rugged all over with ſharp granules, of a dirty browniſh red colour[g].

Found near Canton in China by Oſbeck, and ſince by Loureiro.

4. Diſcovered at the Cape of Good Hope by Thunberg.

5. Branches woody, angular at top, with an excavated line running down the ſides of the joints. Leaves an inch long, quite entire, acute, villoſe eſpecially underneath, on ſhort petioles. Flowers eight or ten on each ſide, on two or three very ſhort peduncles. Bractes of the peduncles two on each ſide, lateral, oval, narrowed at the baſe, ſemiunguicular: floral bractes linear. Outer calyx four-parted; ſegments linear-awl-ſhaped, the two outer longer. Inner calyx five-parted; ſegments unequal, awl-ſhaped. Corolla villoſe; tube the length of the outer calyx: upper lip erect, lanceolate, entire; lower trifid, with oblong ſegments. Stamens and ſtyle the length of the corolla.

Native of the Cape of Good Hope[h].

6. Stems procumbent, hexangular, a foot long, branched at bottom. Leaves oppoſite, petioled, acuminate, bluntiſh, ſcarcely crenate, or quite entire, ſmooth. Peduncles ſometimes ſolitary, three or four-flowered at top, ſhort. Involucels two, briſtle-ſhaped, naked under each flower. Bractes oblong, mucronate, narrowed at the baſe. Outer calyx four-leaved; leaflets lanceolate: inner five-leaved. Corolla pale violet; tube long, ſlender; border ringent, upper lip roundiſh, lower oblong.—Native of China[i].

7. Branches villoſe, with joints four inches long, four-grooved. Leaves remote, quite entire, ſometimes obſcurely toothletted towards the baſe, hairy, an inch long: petiole twice the length of the leaf. Peduncles ſolitary, ſometimes oppoſite, twice or three times the length of the leaf, hairy, three or four-flowered at the top. Involucre of two petioled linear-lanceolate blunt leaflets ſhorter than the flower. Bractes two, longer than the calyx, unequal, blunt. Outer calyx five-leaved; leaflets linear, unequal: inner many-leaved; leaflets awl-ſhaped, ſhorter[k].—Native of Arabia Felix.

8. Stem filiform, having a ſhort branchlet or two at the joints, ſmooth. Leaves unguicular, often ſmaller, ſpreading very much, oblong ſometimes ſubovate, quite entire, blunt, veined, on petioles the length of the leaves. Flowers ſeſſile, alternate below, oppoſite above. Outer calyx ſemiunguicular, five-cleft; ſegments linear-lanceolate, the uppermoſt longer and broader: inner ſhort, five-parted; ſegments awl-ſhaped. It varies with rounder leaves.—Native of the iſland of Mauritius[l].

9. See Dianthera ſulcata.

10. Stem ſhrubby, angular, rough-haired. Leaves oppoſite, petioled, quite entire. Panicles terminating, on trifid or bifid pedicels. Outer calyx five-cleft, the dorſal ſegment lanceolate, almoſt the length of the corolla. Flowers purple[m]. Capſule oblong, compreſſed a little, acuminate at top, elongated below into a linear-compreſſed claw, by which it opens elaſtically. Seeds two in each cell, orbiculate, emarginate-beaked at the umbilicus, flattiſh on both ſides, black-brown, rugged with extremely minute headed prickles[n]. Native of the Eaſt Indies, where it was obſerved by Koenig.

11. Branches ſcarcely angular below, ſmooth, jointed: internodes two or three inches long, thicker at top and bottom. Leaves obſcurely crenate towards the baſe, with few very ſhort hairs, preſſed cloſe, two inches long, the upper ones lanceolate, cuſped. Petiole one-fourth of the length of the leaf. Peduncles ſolitary, oppoſite, on the branchlets alternate, half the length of the petioles, upright, having two or three pedicels at top longer than the peduncle, and two briſtle-ſhaped leaflets the length of the pedicels. Flowers covered with two quite entire mucronate veined three-nerved unequal unguicular bractes; the ſide-ones two-flowered, the middle one-flowered. Both calyxes equal in length, five-parted; ſegments lanceolate, villoſe. Capſule villoſe.

From Rumphius's deſcription, and from his figure, t. 22. f. 2. it is plain, that his Bungum belongs to J. purpurea, and Folium tinctorium to this. The ſynonym of Hortus Malabaricus is doubtful.

Native of the Eaſt Indies and Arabia Felix[o].]

12. This is an annual plant, with an upright ſtalk, having ſix angles, riſing two or three feet high, and dividing into many branches. Leaves oppoſite, an inch and half long, and one inch broad; ſmooth, as are alſo the ſtalks. At each joint come out cluſters of ſmall bractes. Long before the ſtalks decay moſt of the leaves fall off, leaving only theſe bractes. Flowers in ſmall ſpikes at the ſide of the branches, ſitting very cloſe; they are of a beautiful carmine colour. The upper lip is arched, bending over the lower, which is alſo a little reflexed; both are entire. Capſules ſhort, wedge-ſhaped, opening lengthwiſe, incloſing two ſmall oval ſeeds.

Native of La Vera Cruz and Jamaica. Cultivated before 1733, by Mr. Miller; whoſe ſpecimen is in Sir Joſeph Banks's herbarium.

13. Stem brittle, five or ſix feet high, ſending out many branches. Leaves two inches long, and one inch broad, hairy, oppoſite. Flowers large, of a carmine colour, and ranged on one ſide of the ſpike. Capſules ſhort, about half an inch long. It was diſcovered at La Vera Cruz by Dr. Houſtoun, [and cultivated by Mr. Miller before 1733. His ſpecimen is in Sir Joſeph Banks's herbarium.

14. This riſes by a ſlender ſtem to the height of about three feet from the ground, and ſhoots into a great number of branches that grow gradually leſs as they aſcend, and are diſpoſed in an oppoſite order, as well as the leaves from whoſe axils they commonly ſhoot[p]. It reſembles J. ſexangularis, but the bractes are narrow and acuminate[q]. Swartz doubts whether it be really diſtinct from J. ſexangularis.—Native of Jamaica.

15. Root pubeſcent, woolly at top. Leaves radical, ſeveral, narrower at the baſe, ſubſeſſile. Scapes ſeveral, very ſimple, longer by half than the leaf, imbricate, with lanceolate acuminate appreſſed ſcales. Spike terminating, cylindrical, ſimple, imbricate, with ovate acute concave ſcales. Calyx five-parted; upper ſegment oblong, broader than the reſt; the two lower linear villoſe.

β. There is a variety with lyrate-pinnatifid leaves, and ſmooth veins, which perhaps may be a different ſpecies. There is another in Sir Joſeph Banks's herbarium, from North America, with the leaves quite entire, and ſmooth on both ſides[r].

Retzius obſerves, that the leaves are uſually lyrate, but that ſome on the ſame plant are entire.

Found in the Eaſt Indies by Koenig.

16. Stem roundiſh, compreſſed, jointed. Leaves petioled, ſmooth, acuminate, quite entire. Spike

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[d] Vahl.
[e] Linn. ſpec.
[f] Loureiro.
[g] Gærtner.
[h] Vahl.
[i] Linn, ſpec. Vahl, Loureiro.
[k] Vahl.
[l] Ibid

[m] Linn. ſuppl.
[n] Gærtner.
[o] Vahl.
[p] Browne.
[q] Linn. amoen.
[r] Vahl.
[s] Linn. ſyſt.

ſtrobile-ſhaped; with ſpreading, upright bractes. Tube of the corolla filiform, incurved, longer than the bracte; border blueiſh; upper lip very narrow, bifid at top, lower trifid, the middle ſegment broader. Anther at the bending of the upper lip[s].

Loureiro ſays it grows five feet high, upright with ſpreading branches, Mr. Miller affirms that] it riſes in its native ſoil with a ſtrong woody ſtem ten or twelve feet high; that the leaves are five inches long, and two inches and a half broad, of a lucid green and oppoſite; that the flowers grow in very long ſpikes from the end of the branches, and are of a greeniſh colour with a ſhade of blue.

[Native of the Eaſt Indies, Cochinchina, &c. Cultivated in 1759, by Mr. Miller[t].

17. Stem upright, ſix feet high, round, ſcarcely branched, often ſeveral from the ſame root. Leaves ovate, acuminate at both ends, obſcurely toothletted, the upper ſurface ſmoothiſh, the lower tomentoſe, with aſcending and parallel veins, oppoſite, on ſhort petioles, eight inches long. Spikes upright, denſe, four-cornered, three inches long, moſtly in pairs or fours. Bractes roundiſh-cordate. Flowers without ſmell, in four rows, of a fine bright red.

It differs from the Juſticias in the ſtructure of the corolla and the number of ſtamens, which are four, filiform, upright, of the ſame length, inſerted into the lower part of the corolla, and nearly as long as that[u]. The younger Linneus, in the Supplement, reckons only two ſtamens, and ſays that his plant differs from that of Jacquin in no other reſpect.

I ſhould be inclined to refer it to Ruellia; but Jacquin obſerves that it differs very much both from that and Barleria in the petals and the equality of the ſtamens. He refers it to this genus on account of the habit and the agreement of the fruit.

Native of South America, frequent near Carthagena.

18. This is an upright elegant plant, growing ſix feet high among buſhes and in hedges, but only three feet in other ſituations. It appears to be an annual plant. Stems round, ſmooth. Leaves quite entire, ſhining on the back, but ſomewhat rugged on the upper ſurface, on ſhort petioles, oppoſite, half a foot long. Bractes under each flower in threes, blunt with a little point, ſomewhat hairy on the back, upright, much longer than the calyx. Flowers void of ſcent, purple. It has altogether the character of J. euſtachiana.—Native of Carthagena in Spaniſh America[x].

19. Branches roundiſh, ſmooth, oppoſite. Leaves petioled, about a ſpan in length, much attenuated at the baſe, decurrent along the petiole, nerved, obſcurely veined, a little attenuated at the tip, ſmooth on both ſides, except along the midrib and larger veins, not at all ſoft. Spike ſolitary, ſeſſile, imbricate. Bractes brown, ſomewhat convex on the outſide, acute, concave within; the outer ones cloſely imbricate. There are two others at the baſe of each calyx, longer than the outer one, lanceolate, white tomentoſe on the outſide with very cloſe villoſe hairs, within hollow, ſmooth, pale, ſomewhat ferruginous at the tip, as are alſo the calyxes. The rachis between the flowers is alſo covered with very cloſe villoſe hairs. Calyx five-leaved; leaflets lanceolate, longer than the bracte, ſtriated, very ſmooth, the two inmoſt narrower. Upper lip of the corolla bifid; ſegments linear-lanceolate; lower lip undivided, lanceolate. Filaments a little ſhorter than the corolla: anthers parallel. Germ oblong.

It was ſent from Cayenne by von Rohr as J. pulcherrima of Jacquin, with which it agrees in the leaf and corolla; but the leaves are not ſoft to the touch underneath, the ſpikes are terminating and ſolitary, not axillary two or four together, the bractes ovate not ſubcordate-round, the anthers ſmall and ſmooth not very large and villoſe at the back; nor has von Rohr mentioned any thing of the inner bractes and rachis being tomentoſe. It differs from J. pulcherrima of Linneus in the ſmoothneſs of the branches, and in the leaves not being hoary with ſoft hairs underneath, nor quite entire. It is certainly different from J. pulcherrima of Vahl's ſecond part[y].

20. Stem ſix feet high, nearly erect, round, covered by a ſmooth brown bark, cracking longitudinally. Branches erect, leafy, ſwelled at the inſertion of the leaves; the younger ones ſlightly quadrangular, ſmooth. Leaves about the tops of the branches, oppoſite, ſpreading but a little deflexed, entire, waved, veiny, dull green, ſmooth, veins alternate: foot-ſtalks ſhort, roundiſh. Spikes terminating, moſtly ſolitary, erect, ſimple, denſe, many-flowered; at length appearing lateral from the growing out of young branches. Common flower-ſtalk reſembling the branch, roundiſh. Larger bractes nearly alternate, ſhaped like the leaves, but much ſmaller, nearly erect, ſlightly downy, one to each flower; ſmaller ones two together above each of the larger, minute, linear, acute, ſcarcely perceptible in the upper part of the ſpike. Flowers ſeſſile, one between each pair of the ſmaller bractes, erect, large, handſome, ſcarlet becoming tawny in decay. Segments of the calyx inflexed and ſlightly downy. Corolla an inch and half long, incurved, angular; the angles ſlightly downy; the limb four-cleſt; its upper ſegment broadeſt, recurved at the tip, notched; three lower ones equal, linear-oblong, obtuſe, entire, pendulous. Filaments inſerted into the baſe of the corolla before, ſcarcely ſo long as the limb, a little incurved, ſimple, linear, angulated, downy, tawny. Anthers linear, obtuſe, cloven at the baſe, incumbent, tawny. Germ ſuperior, ſtanding on a white fleſhy receptacle, ovate, compreſſed, furrowed on the edges, green, very ſmooth. Style a little longer than the ſtamens. Stigma minute, cloven.

This is the largeſt ſpecies, at leaſt of thoſe that are cultivated here, and grows in the hot-houſe almoſt to the ſize of a tree. The flowers are only to be found on old plants. The leaves, when bruiſed, have an herbaceous ſmell, like ſome trefoils; the flowers have no ſmell.

Native of South America. Found by Aublet on the banks of rivers in the iſland of Cayenne, flowering in october, november and december. Here it flowers in ſummer[z]. Introduced about 1770[a].

21. Branches obſcurely quadrangular, pubeſcent, with internodes three inches long. Leaves petioled, an inch long, remote, blunt, ending at the baſe in a ſhort petiole, bluntly and remotely toothed, with minute hairs preſſed cloſe on both ſides, whiter underneath. Spikes peduncled, oppoſite or alternate, an inch long: peduncles longer than the leaves, often two-leaved; leaflets lanceolate, with the rudiment of a flower in the axils. The lower bractes ovate-lanceolate, with three or four toothlets on each ſide: the reſt ovate, quite entire; all hirſute eſpecially at the edge. Flowers oppoſite, with two briſtle-ſhaped bractes at the baſe. Segments of the calyx linear-lanceolate, hirſute.—Found in Java, by Thouin[b].

22. Branches round. Leaves on very ſhort petioles, two inches long, ovate, acute, quite entire, ſmooth. Spikes from the upper axils, a pair on each ſide, oppoſite, on very ſhort peduncles, two inches long, upright. The loweſt flowers oppoſite, the reſt alternate. Bractes from upright ſpreading, three to each flower, permanent, half an inch long, narrow. Calyx five-parted; ſegments linear-awl-ſhaped, ſhorter by half than the bractes. Capſules pubeſcent, the length of the bractes.

Native of the Caribbee iſlands[c].

23. Stem ſmooth, round. Leaves on very ſhort petioles, two inches long, quite entire, ſmooth, bluntiſh, with ſimple veins. Spikes from the end of the branches, a hand in length. Flowers two or four on each ſide. Bractes briſtle-ſhaped. Under each whorl a linear-lanceolate leaflet on each ſide, on a ſhort petiole, the length of the flowers, the upper leaflets ſmaller. Segments of the calyx briſtle-ſhaped. Corolla yellow. Style the length of the corolla[d].

Native of the Eaſt Indies.

24. This varies with ſhorter denſer hairy ſpikes, figured by Plukenet in t. 392. f. 4; and with longer narrower ſmooth ſpikes, figured by the ſame author in t. 56. f. 3; with ſmaller rounder leaves, the ſtems branch-

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[s] Linn. ſyſt. [t] Hort. kew. [u] Jacquin. [x] Ibid. [y] Vahl.

[z] Smith. [a] Hort. kew. [b] Vahl. [c] Ibid. [d] Ibid.

ing very much and diffuſed, the ſtem more upright, or the leaves lanceolate[e].

Burman ſays that his ſpecimens agree with hort. malab. 10. t. 94. and Pluk. phyt. t. 392. f. 4. (in which the ſpikes are longer) in figure, more ovate leaves, and ſeſſile imbricate ſhorter incraſſated ſpikes. Native of Ceylon and Java.

25. Leaves oppoſite. Racemes (ſpikes) ſimple, from each axil, the length of the leaves, ſpreading. Flowers ſeſſile, remote, upright. Calyxes briſtle-ſhaped, long[f]. Native of the Eaſt Indies.

26. Stem ſmooth. Leaves three or four inches long, ſcarcely an inch in breadth, attenuated, blunt, quite entire, ſmooth. Petiole linear, filiform, an inch long. Spikes double the length of the petiole. Flowers alternate. Bractes two at the baſe of the calyx; one ſmaller, the other the ſame length with the calyx, covering the flower; both lanceolate, acuminate. Segments of the calyx briſtle-ſhaped. Corolla ſmall, twice the length of the calyx—Native of the iſland of Mahé. Thouin[g].

27. Branches round, ſmooth. Leaves three inches long, broad-ovate, ſmooth, quite entire, on a petiole only two lines in length, channelled above, convex underneath. Peduncle terminating, upright, often a foot long, with two oppoſite branches at bottom, a ſpan long and ſimple. Flowers below two or three on each ſide, ſolitary above; the lower ones more remote. Bractes two, awl-ſhaped, ſhorter than the calyx. Segments of the calyx five, briſtle-ſhaped, ſcarcely villoſe. Tube of the corolla narrow, three times the length of the calyx. Capſules ſomewhat hairy. It approaches to Rheed. malab. 9. 83. t. 44. and perhaps is not different, but the flowers are ſmaller in Koenig's ſpecimens.—Native of the Eaſt Indies[h].

28. Stem ſtriated, eight feet high, the thickneſs of the human arm; with aſcending, whitiſh, even, brittle branches. Leaves quite entire, ſhining, petioled, oppoſite, duſky green, beautifully marked with a long, white, lucid, ſinuated ſpot in the middle, whence the trivial name; the lateral ribs are parallel and oblique. Flowers in ſhort ſpikes. Calyx five-cleft, acute, ſhort, permanent. Corolla red; border oblong; mouth inflated; upper lip curved in, emarginate; lower ſpreading, trifid, equal:—according to Loureiro, upper lip concave, quite entire, lower bifid. Stamens ſtraight, under the upper lip. Anthers incumbent[i]. Bractes minute, ovate[k].—Native of the Eaſt Indies.

29. Branches obſcurely quadrangular, very ſmooth, aſh-coloured, alternately compreſſed at the tip. Leaves often a ſpan long, quite entire, veined, very ſmooth, on ſhort petioles. Peduncle terminating, compreſſed, a ſpan long; at the baſe often two branches, oppoſite, ſpreading. Pedicels ſeveral, three or five on each ſide, aggregate, oppoſite, filiform, diſtant: bractes minute, awl-ſhaped at the baſe. Calyx ſmooth, minute, five-cleft, with briſtle-ſhaped ſegments. Upper lip of the corolla bifid, with lanceolate ſegments; lower trifid, more deeply cut. Filaments only half the length of the corolla. Anthers ſimple. It has the habit of J. variegata, Aubl. guian. t. 4. which differs however in having ſeſſile leaves, flowers in ſpikes, peduncles and calyxes rough-haired[l].

Jacquin ſays, that it very much reſembles J. hirſuta; and that, beſides the two fertile ſtamens, there are at the bottom of the corolla two barren filaments, which Vahl could not diſcover.

Native of the Weſt Indies; Martinico, Guadaloupe, and S. Cruz.

30. Stem ſmooth, quadrangular; angles acute, with a groove on each ſide; the internodes two inches long. Branchlets axillary, a little longer than the petiole, flower-bearing. Leaves an inch and more in length, ſpreading, quite entire, acuminate, running a little down the petiole, ſmooth above, paler underneath, veined: petiole ſhorter by half than the leaves. Peduncles from the axils of the leaves on the branchlets, oppoſite, filiform, two-parted, ſpreading very much, one-third of the length of the leaves: pedicels oppoſite, upright: bracte linear the length of the pedicel at the baſe of each pedicel, and two at the baſe of the diviſion of the peduncle. Flowers ſmall: a linear leaflet, a little dilated at the tip and below, covering the calyx at the baſe half way. Calyx deeply five-cleft, a little ſhorter than the bracte; ſegments briſtle-ſhaped, rough-haired, as are alſo the pedicels, the ſame length with the tube of the corolla; the lower lip of which is three-toothed. Anthers ſimple.

It differs from the next ſpecies, to which it approaches in habit, by a ſtem three times the thickneſs, longitudinally grooved, broader leaves on long petioles, peduncles three times ſhorter than the leaves; once bifid, flowers oppoſite longer than the calyxes and bracted at the baſe, and ſmooth filaments.—Native of Malabar. Koenig[m].

31. Stem a foot and half high, ſtiff, four-cornered; angles ſharp, ſmooth, with two ſtreaks at the ſides. Leaves like thoſe of J. pectoralis, an inch and half long, attenuated to both ends, ending in a very ſhort petiole, quite entire, ſmooth, bluntiſh. Peduncles quadrangular, ſmooth, ſpreading very much: the axillary one ſolitary, oppoſite, moſtly bifid, ſomewhat branched: the terminating one panicle-branched: partial peduncles oppoſite. Pedicels alternate, remote, capillary, ſolitary but frequently with the rudiment of a ſecond in the axils of the bractes. Bractes oppoſite, thoſe under the firſt ramifications linear-lanceolate; at the baſe of the pedicels awl-ſhaped and very ſhort; at the baſe of the calyx none. Calycine ſegments awl-ſhaped, nearly equal, pubeſcent. Corolla pubeſcent on the outſide: upper lip bifid, linear, blunt: lower trifid, with lanceolate ſegments. Filaments extremely hirſute longitudinally, almoſt as long as the corolla. Anthers ſimple. Capſule ſcarcely an inch long, linear, margined, ſharp at both ends, mucronate, ſhining yellow with a purple line along the middle.—It differs from the other ſpecies, in having capſules compreſſed flat and of the ſame breadth from end to end.—Native of the Eaſt Indies[n].

32. Stem roundiſh, ſmooth, very finely ſtriated. Branches alternate. Leaves on very ſhort petioles, an inch or more in length, attenuated, thinly hairy, ſpreading very much, remotely toothed, veined; veins alternate, ſimple: the upper leaves lanceolate, quite entire. Racemes pubeſcent. Pedicels ſhort. One bracte at the baſe of the pedicels, and two under each flower. Calyx deeply five-cleft; ſegments linear-lanceolate, one-third of the length of the corolla. Lips of the corolla divaricating: upper narrower, two-toothed; lower trifid, with lanceolate ſegments: the lips have changed places. Stamens in the lower lip, the length of the corolla. Anthers ſimple.—Native of Java. Thouin[o].

33. Stem ſhrubby, ſomewhat angular, three feet or more in height, green, very much branched, ſlightly pubeſcent. Leaves oppoſite, on ſhort footſtalks, running out to a blunt point, veiny, a little downy. Peduncles alternate, with two ſmall bractes at each diviſion. Flowers pure white, inodorous. Calycine leaflets lanceolate, entire, permanent. Theſe, as well as the whole of the plant are beſet with minute, tranſparent globules, viſible with a magnifier. Corolla deciduous; tube linear, grooved, pale green, ſlightly villoſe, bending a little upwards; upper lip very narrow, bent back, the edges towards the baſe rolled back, ſo as to make it appear in that part almoſt tubular; lower lip hanging down, trifid; ſegments equal, obtuſe at the baſe, round; the mouth marked with fine purple dots. Filaments ſhort, projecting from the mouth of the tube, finally bending back. Anthers at firſt yellow, afterwards livid. Germ oblong, ſmooth. Style capillary, ſlightly hairy. Stigma bifid. It produces almoſt the year through abundance of flowers, diſtinguiſhed not leſs for their ſingularity than their ſnowy whiteneſs. The bruiſed leaves are uſed in the Eaſt Indies, where it is a native, for the cure of cutaneous eruptions. Introduced into the Royal Garden at Kew ſince the publication of the Catalogue in 1789[p].

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[e] Vahl. [f] Linn. zeyl. [g] Vahl. [h] Ibid.
[i] Linn. Loureiro. [k] Vahl. [l] Ibid.

[m] Vahl. [n] Ibid. [o] Ibid. [p] Curtis.

34. Branches climbing, round, villoſe, jointed. Leaves two inches long, broad-ovate, ſharp at the baſe, veined: veins ſomewhat villoſe on both ſides. Petioles villoſe, ſubcinereous. Peduncles oppoſite, half the length of the leaf, firſt three-parted, then once bifid. Pedicels two-flowered. Bractes two, oppoſite, very minute, briſtle-ſhaped, at the baſe of the pedicels and calyx. Calycine ſegments briſtle-ſhaped.—It varies with the branches, and veins of the leaves leſs villoſe, and is allied to J. naſuta. Native of Malabar. Koenig[r].

35. Stem dividing from the very bottom into long branches, reſembling ſo many ſtems: theſe are round at bottom; but obſcurely quadrangular at top, upright, weak, hairy, a foot and half high, a little branched at top. Leaves oppoſite, hirſute, on a ciliate petiole, quite entire, dark green on the upper ſurface, ſpreading, the lower ones remote, the upper cloſely and imbricately heaped, and hence having the appearance of a quadrangular ſpike. Flowers ſolitary, ſeſſile, ſmall, inodorous, in all the axils of the leaves. Bracte one on each ſide of every flower, ſublinear, green, ciliate with long white hairs. Calycine leaflets like the bractes, but ſhorter by half. Tube of the corolla ſhorter than the calyx, gibboſe, whitiſh: lower lip twice as long as the tube, flat, and ſpreading very much, ending in a wide and equally trifid border, wholly white, except two little ſulphureous knobs at the origin, with two fulvous dots before them: upper lip ovate, two-toothed, ſhorter, concave, upright, browniſh on both ſides, with longitudinal yellow ſtreaks. In this lip the ſtamens are placed. Each anther divides at bottom into two legs, the inner of which is ſhorter and free, the outer ends in an inflexed filament. Style awl-ſhaped. Stigma bifid. Capſule compreſſed, orbiculate, acuminate both ways, ſmooth, brown; containing in each cell one kidney-ſhaped, dark, compreſſed ſeed, appearing as if it were duſty, placed tranſverſely, having at top and bottom a tuft of browniſh hairs, which in the magnifier appear round, awl-ſhaped, pellucid, and divided into ſeveral chambers by tranſverſe partitions. The whole plant is rugged. It flowers the whole ſummer. Its native place of growth is unknown[s].—Introduced in 1780, by Monſ. Thouin[t].

36. Stem upright, very ſmooth, as is the whole plant, hexangular with the ſides grooved. Leaves petioled, two inches long, attenuated, quite entire. Raceme a hand in length, upright, compoſed almoſt to the top of upright racemelets, an inch long, oppoſite; towards the top ſimple, with oppoſite flowers. Flowers on the racemelets alternate, four or five, on ſhort pedicels. Bractes two, briſtle-ſhaped, the length of the pedicel, and at the baſe of the pedicels. Calycine ſegments linear-lanceolate. Corolla purple, bifid; upper lip linear, entire; lower ſubtrifid. Filaments capillary, the length of the corolla. Anthers two, pedicelled. Style the length of the corolla, capillary.—Native of the iſland of Trinidad: von Rohr[u].

37. See Dianthera debilis.

38. See Dianthera violacea.

39. Stem upright, branched, quadrangular, very finely pubeſcent at top, ſomewhat hoary. Leaves ſix or eight inches long, and two or three broad, attenuated, ſharp at both ends, nerved, ſmooth, on petioles two inches long. Partial ſpikes on ſhort peduncles, oppoſite. Peduncles pubeſcent. Flowers oppoſite. Bractes in pairs, pubeſcent, the length of the calyx. Calycine leaflets linear-lanceolate, pubeſcent. Upper-lip of the corolla linear-lanceolate, undivided; lower trifid. Filaments undivided. Anthers two on each filament, one placed a little above the other. Native of Cayenne. Von Rohr[x].

40. Stem upright, ſtiff, obſcurely quadrangular, hairy backwards at the angles. Leaves three inches long, attenuated, ſharp, quite entire, ſmooth above, ſhining, hairy underneath, ſpreading very much, on very ſhort petioles. Spikes ſolitary, upright, ſhorter by half than the leaf, imbricate, axillary, with one terminating. Anterior bractes ovate, membranaceous, nerved, hairy-ciliate; the dorſal ones half-ovate, ciliate, cuſped, one at the baſe of each flower. Flower ſolitary, ſeſſile in the axils of the bractes. Calycine ſegments briſtle-ſhaped. Filaments bifid at the tip, one ſegment upright, the other bent down; with a ſingle anther on each ſegment. Native of Cayenne. Von Rohr[y].

41. Stem round, ſmooth, as is the whole plant. Leaves on ſhort petioles, two inches and more in length, with raiſed nerves on both ſides, quite entire, bluntiſh, paler underneath. Peduncle ſimple, three or four inches long, flowering at top, in a ſpike an inch long: flowers ſolitary, oppoſite. Bractes three to each flower: the outer much broader, narrowed at the baſe, obovate; the two ſide ones oblong, attenuated at the baſe, ſhorter than the outer, ſubciliate, with minute hairs. Calycine ſegments lanceolate. Corolla large, purple, cloven beyond the middle: upper lip lanceolate, two-toothed, ſhorter than the lower; which is three times broader, and trifid; the ſegments oblong. Stamens the length of the upper lip. Native of the iſland of Santa Cruz in America. Pflug[z].

42. See Dianthera flava.

43. See Dianthera americana. Mr. Miller's ſpecimen is in the Bankſian herbarium.

44. See Dianthera punctata.

45. This is an upright ſhrub, three feet high, with round brittle ſtems. Leaves quite entire, ſmooth, on ſhort petioles, oppoſite, three inches long. Common peduncles racemed, little divided; the terminating many-flowered, the axillary three-flowered or thereabouts. Bractes uſually in threes, ſhorter than the calyx. Flowers inodorous, purple. Capſules wedge-ſhaped[a].

According to Vahl, there are frequently two or three flowers within a ſix-leaved involucre; the two outer leaflets larger, widening outwards, mucronate, one a little ſhorter than the other, the remaining four equal and awl-ſhaped.

Native of the Weſt-Indies; common on the arid open hills of St. Euſtatia.

46. This is an upright plant, two or three feet in height. (Browne ſays, it ſeldom riſes more than ten or twelve inches.) Probably it is annual. Leaves acuminate, two inches long. Panicles terminating, dichotomous, ſlender. Flowers numerous, red, ſeſſile. Bractes briſtle-ſhaped. The whole plant has the ſmell of new hay mixt with a refreſhing aromatic ſcent.

Native of the Weſt Indies; (Domingo and Martinico) where the inhabitants make a ſyrup of it, which they uſe againſt diſorders of the breaſt. The bruiſed leaves are alſo good in wounds and cuts; whence the French there call it *Herbe à charpentiere*[b].

47. See Dianthera comata.

48. Branches a foot long and more, quite ſimple, oppoſite, from upright ſpreading, obſcurely angular, with internodes from three to four inches in length; there are frequently two other ſhorter branches from the axils. Leaves two inches long, very remote, acuminate, ſomewhat rugged, paler underneath, on filiform petioles two or three lines in length. Peduncles at the ends of the branches, from the axils of the terminating leaves, three or five, equal, broader at top; the lateral ones trifid, the middle ones undivided. Bractes at the baſe, briſtle-ſhaped. Beſides theſe, there are two lanceolate acuminate leaflets, one ſhorter than the other, protecting two or three flowers. Calycine ſegments briſtle-ſhaped. Capſules villoſe. Obſerved in Malabar by Koenig[c].

49. Stem round, ſmooth. Leaves two inches long, ovate, acute, ſmooth, quite entire, on ſhort petioles. Common peduncles oppoſite, three times as long as the leaf, quadrangular, pubeſcent at top, with ſharp angles: partial peduncles umbelled, four, an inch long, pubeſcent, the middle ones a little longer. Pedicels three or four, very ſhort, umbelled. Bractes of the peduncles and pedicels in pairs, oppoſite, oblong, acuminate—of the flowers rhomb-ſhaped, blunt, membranaceous, veined, much larger than the calyx,

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[r] Vahl.
[s] Jacquin.
[t] Hort. kew.
[u] Vahl.
[x] Ibid.
[y] Vahl.
[z] Ibid.
[a] Jacquin.
[b] Ibid.
[c] Vahl.

one ſmaller—of the calyxes linear, awl-ſhaped, the length of the calyx, which is ſmall and pubeſcent. Corolla longer than the bractes, pubeſcent on the outſide, with the lower lip three-toothed. Stamens ſhorter than the corolla. Native of Otaheite [d].

50. Stem branched, pubeſcent, round. Leaves petioled, two inches long, ovate-lanceolate, bluntiſh, quite entire, the younger ones pubeſcent. Peduncles ſhorter than the petiole, with four nearly equal pedicels at top. Bractes four under the umbel, awl-ſhaped, ſpreading very much, a little reflex at the tip. Calyx and floral bractes as in the preceding, only mucronate and pubeſcent, the two middle ones larger, as in the other ſpecies allied to it. Capſule pubeſcent. Native of Botany Iſland. Fabricius [e].

51. Stem covered with an aſh-coloured bark except at top, where it is green. Branchlets quadrangular, oppoſite, ſhort, ſpreading very much. Leaves petioled, an inch long, ovate, attenuated, quite entire, bluntiſh, ſmooth on both ſides. Peduncles ſolitary, ſhort, pubeſcent, with three one-flowered pedicels at top, double the length of the peduncle, a little dilated at top, the middle one a little longer. Bractes of the peduncle four at the ſides, awl-ſhaped, ſpreading very much, reflex: floral bractes oblong, parallel, one ſmaller: calycine bractes lanceolate. Calyx as in the preceding. Corolla pubeſcent, half as long again as the bractes.—This is very nearly allied to the two ſpecies immediately preceding. Native of Java.—Thouin [f].

52. This reſembles J. chinenſis ſo much, that it may be conſidered as a mere variety. It differs only in the form of the bractes, and the number of the anthers [g].

Forſkahl deſcribes the leaves as lanceolate-ovate and entire; the flowers as ſeſſile, in heads, violet-coloured, whorled; with obovate-lanceolate, ciliate, mucronate bractes, bigger than the calyx; the whorls peduncled.

53. Branches obſcurely quadrangular, ſmooth; with internodes three inches long, ſomewhat gibboſe on one ſide at the baſe. Leaves an inch long, ovate, a little attenuated, ſharp at the baſe, very ſmooth; on looſe petioles, the lower ones the length of the leaves. Pedicels unequal. Bractes two at the baſe of the pedicels, petioled, oblong, acute: floral bractes three under each calyx, unequal; two awl-ſhaped, the third ovate. Native of the Eaſt Indies. Schumacher [h].

54. This is an upright plant, with ſlender round branches. Leaves oppoſite, on ſhort petioles. Floral bractes acute, ſmall, commonly two to each flower. Flowers inodorous, purple. Native of the Weſt-Indies; frequent in the iſland of St. Euſtatia in hedges and coppices; flowering in july and auguſt [i].

55. Stem upright, ſix feet high. Leaves quite entire, thick, ſubſeſſile, oppoſite. Branches and leaves marked with black lines. Corolla white, variegated with red: upper lip lanceolate, entire, upright; lower trifid, reflex. Bractes briſtle-ſhaped. Native of Cochinchina.

56. Stem branched, procumbent, long, round, grooved. Leaves acuminate, oppoſite. Bractes conical, bluntiſh. Peduncles one-flowered, many together. Corolla roſe-coloured; both lips reflexed: the upper ovate, quite entire; the lower oblong, blunt, trifid. The leaves dye cloth of a fine green colour. Native of Cochinchina [k].

Loureiro has another ſpecies, which he ſuſpects may be the *faſtuoſa* of Linneus; but it can ſcarcely be the ſame, ſince he deſcribes the leaves as elliptic and ſubſerrate; the flowers in compound racemes or thyrſes; the upper lip of the corolla acute, and the lower trifid: whereas in the *faſtuoſa* the leaves are ſharp at both ends, and quite entire; the flowers all point one way; the upper lip of the corolla is blunt, and the lower entire.]

57. Malabar Nut riſes here with a ſtrong woody ſtem to the height of twelve or fourteen feet, ſending out many ſpreading branches. Leaves more than ſix inches long, and three inches broad, placed oppoſite. Flowers on ſhort ſpikes at the end of the branches. Corolla white, with ſome dark ſpots. It flowers in july, but does not bear ſeeds in England. Native of Ceylon. [Cultivated in 1699, by the Dutcheſs of Beaufort. It flowers in may and july [l]. Mr. Miller's ſpecimen is in the Bankſian herbarium.

58. Stem nearly as in Adhatoda and Ecbolium, but more herbaceous. Leaves ſmaller, more remote, lanceolate-ovate. Bractes waved, oppoſite, ovate, acuminate, netted-veined, coloured. Upper lip of the corolla broad, as in the preceding ſpecies, but the lower lip differently conſtructed. Native of the Eaſt-Indies.

59. This plant has the appearance of Thymus Acinos. In Herman's ſpecimen the leaves are much broader than in Burman's figure (which is not our plant), ovate and crenulate. Stems procumbent, putting out roots from the joints. Spikes with lanceolate bractes, by no means membranaceous at the edge [m].—In the ſpecies it is ſaid that the bractes are widely membranaceous at both edges—and in the ſyſtema, that it varies with lanceolate, ſeſſile leaves. Native of Ceylon.

60. The herb has the appearance of J. repens. Branches oppoſite, long, diffuſed. Leaves oppoſite, quite entire, even, petioled. Spikes ſolitary, with very ſmall flowers, underneath longitudinally imbricate in a double row [n]. Native of the Eaſt Indies. Koenig ſent it from Calcutta, and it is thus deſcribed by Retzius under the name of J. parviflora.

Stems ſubherbaceous, diffuſed, angular, pubeſcent. Leaves ovate, quite entire, acute, ſomewhat hiſpid. Spikes half an inch long, terminating and axillary, peduncled, pointing one way, many-flowered. Dorſal bractes imbricate, lanceolate, acuminate, green, obliquely nerved, with a thin white margin: the anterior ones like theſe, but winged as it were with a wider margin, ſomewhat hirſute within: the upper ones emarginate. Calyx minute, hyaline, with ſharp teeth. Corolla minute, white, with a green upper lip.

Vahl remarks, that the ſpikes are ſeſſile, as in the preceding, and the dorſal bractes lanceolate; whereas in repens they are ovate.

61. The whole plant is of a blood-red colour, whence its trivial name. Stem ſimple, the lower internodes two inches, the upper ſcarcely half an inch in length. Leaves an inch long, uſually quite entire, but ſometimes obſcurely crenate, blunt, ſmooth, on petioles twice or three times as long as the leaf. Peduncles imbricate at top, with ſix minute, briſtle-ſhaped, oppoſite ſcales. Calycine ſegments briſtle-ſhaped, longer than the tube of the corolla, which is ſhort: upper diviſion of the corolla oblong, emarginate; lower twice as broad, the length of the upper, ſubtrifid, the ſegments lanceolate. Found in Ceylon by Koenig [o].

62. See Dianthera japonica.

63. This is a ſtiff ſhrub, with oppoſite, diſtorted, warted, round branches, quadrangular at top, with an aſh-coloured pubeſcent bark, leafleſs at bottom. Leaves petioled, an inch long, approximating, quite entire, coriaceous, veinleſs, nerved; when young ſomewhat aſh-coloured. Peduncles only half the length of the petiole, ſolitary, two or three-flowered. A bracte on each ſide at the top of the petiole, lanceolate, longer than the calyx; another at the baſe of each flower, ovate, aſh-coloured, ſhorter than the calyx. Calycine ſegments lanceolate, ſubvilloſe. Corolla an inch and half in diameter, with equal lips; the upper lanceolate, blunt, entire; the lower trifid, with linear ſegments. Stamens the length of the corolla. Style longer [p]. Native of Arabia Felix.]

64. Stem from three to four feet high, ſending out branches on every ſide from the bottom, ſo as to form a pyramid; they are covered with a white bark. Leaves entire, near two inches long, and one third of an inch broad, ſmooth, ſtiff, deep green, oppoſite: at the baſe of the foot-ſtalks come out cluſters of ſmaller leaves, of the ſame ſhape and texture. Peduncles ſhort.

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[d] Vahl.
[e] Ibid.
[f] Ibid.
[g] Ibid.
[h] Ibid.
[i] Jacquin.
[k] Loureiro.
[l] Hort. kew.
[m] Linn. zeyl.
[n] Linn. amoen.
[o] Vahl.
[p] Ibid.

Flowers white, with long calyxes. Capſules oblong, when ripe throwing out their ſeeds, whence its name of Snap-tree. Native of the Canary iſlands, whence the ſeeds were brought about the year 1690, and cultivated in the royal garden at Hampton Court.

[65. This is a very ſtiff ſmooth ſhrub. Leaves ſmall, extremely ſtiff, almoſt prickly at the end. Found at the Cape of Good Hope by Thunberg[q], and Maſſon. Introduced in 1774. It flowers in auguſt and ſeptember[r].

66. Stem ſolid, round, ſmooth, whitiſh. Leaves oppoſite, ſubpetioled, ſmooth, blunt, either emarginate or acuminate at the tip. Bractes in pairs, deciduous. Flowers few. Capſule oblong, narrowed at the baſe, ſharpiſh. Native of Madura[s].

67. This is a ſtiff ſhrub, with an aſh-coloured bark. Branches and branchlets oppoſite, ſpreading, angular, jointed, with a ſmall tubercle on each ſide at the top of every joint. Leaves ſeſſile, thick, with veins underneath, but none above, quite entire. Flowers alternate, with two linear bractes at the baſe, the length of the calyx. Calycine ſegments linear-lanceolate. Corolla like that of J. hyſſopifolia: anthers one above the other as in that, the lower having at the baſe a white awn bent in at the tip. Native of the Cape of Good Hope. Dahl[t].

68. Stem round, red, covered with ſlender, white, ſoft hairs. Leaves ſomewhat fleſhy, petioled, waved, ſmall. Spikes terminating; with oppoſite obcordate bractes, preſſed cloſe, with ſolitary flowers in their axils. Found in Tranquebar by Koenig[u].

69. Stem aſh-coloured. Branches obſcurely quadrangular, four-grooved. Leaves petioled, coriaceous, veinleſs, mucronate[x].

Native of Arabia Felix, where they make wreaths of it to wear on their heads on feſtivals. It has little ſmell when green; but dry it ſmells like Anthoxanthum or Vernal-graſs[y].

70. Branches round. Leaves quite entire, ſmooth, on long petioles. Peduncles at each joint of the ſtem ſolitary, the length of the leaf, even. Spike oblong, imbricate, in two rows; with lanceolate, ciliate bractes; between which are four ſmaller linear bractes. Calyx hairy at top. Corolla handſome, white; with a filiform tube, incloſing the ſtamens, and a border the ſize of Narciſſus poeticus, with five ſpreading lobes, the loweſt of which is larger than the reſt. Native of the Eaſt Indies[z]. This is probably rather a ſpecies of Ruellia.

71. Branches angular, with a ſmooth aſh-coloured bark. Leaves petioled, three inches and more in length, very ſmooth, attenuated to both ends; ſegments remote, alternate, rounded[a]. Native of the iſland of Tanna[b].

72. Stem five feet in height, dividing into few, round, weak, pliant, leafy, very long branches. Leaves quite entire, blunt, ſhining, oppoſite, about half an inch in length. It is armed with ſtrong, oppoſite, very ſpreading, awl-ſhaped, acuminate ſpines, half the length of the leaves. Between the leaves and ſpines come out the peduncles, three or four together, one-flowered, ſhort, oppoſite. Flowers inodorous, ſhorter than an inch, purple. Native of the Weſt Indies; about Port au Prince in Domingo[c], and Jamaica. Vahl remarks, that there are frequently ſeveral leaves from the ſame gem; and that it varies with oblong, obovate, roundiſh, emarginate, greater and ſmaller leaves.]

Mr. Miller adds, that the branches are covered with a whitiſh bark; that under the leaves at every joint there are two ſharp thorns like thoſe of the Barberry; that the flowers, which come out ſingly from the axils, are ſmall, and of a pale red colour. Dr. Houſtoun ſent it from Jamaica to England, [and therefore Mr. Miller cultivated it before 1733, in which year Dr. Houſtoun died. His ſpecimen is in the Bankſian herbarium.

73. Native of the iſland of Tanna in the South Seas[d]. Diſcovered there the 13th of auguſt 1774[e].

74. 75. Natives of Jamaica.

76. Annual. Native of St. Domingo.

77. Annual. Native of Jamaica.

78. Perennial. Native of Jamaica and Hiſpaniola[f].]

79. This riſes with a hairy ſhrubby ſtem four or five feet high, dividing into ſeveral branches. Leaves four inches long, and two inches and a half broad, oppoſite, on foot-ſtalks above an inch long; at the baſe of theſe comes out a cluſter of ſmall leaves. Flowers in looſe cluſters from the axils towards the end of the branches, of a pale red colour.

Diſcovered by Dr. Houſtoun at Campeachy. [Cultivated by Mr. Miller before 1733. His ſpecimen is in Sir Joſeph Banks's herbarium.]

80. This riſes with a ſtrong woody ſtem twenty feet high, dividing into many crooked irregular branches, covered with a light-brown bark. Leaves near four inches long and two broad, which are covered with a ſoft down on their under ſide. Three, four or five ſpikes ariſe from the ſame point, the middle one near three inches long, and the others about half that length. The flowers are ſmall and white. It was found by Dr. Houſtoun at Campeachy; [and was cultivated by Mr. Miller before 1733.

To the above copious liſt of Juſticias we might add many more, that have been diſcovered in the Eaſt and Weſt Indies, at the Cape of Good Hope, Sierra Leone, &c. but theſe are not yet ſufficiently known or determined to lay them before the public.

PROPAGATION AND CULTURE.

Theſe plants are all the produce of warm climates, and not one is a native of Europe. Moſt of them, except a few from the Cape, require the protection of the bark-ſtove. They may be propagated from ſeeds, where theſe can be obtained; and the greater part being ſhrubby, may alſo be increaſed from cuttings. Many of them are beautiful, and would be a great ornament to the ſtove; but few only are yet introduced among us.

The Malabar Nut (n. 57.) and the Snap-tree (n. 64.) were known among us at the end of the laſt century; two or three others were ſent to Mr. Miller by Dr. Houſtoun early in this century; but very few have been introduced ſince.]

57. The Malabar Nut, Juſticia Adhatoda, may be propagated by cuttings, which, if planted in pots in june or july, and plunged into a very moderate hot-bed, will take root; but they muſt be every day ſcreened from the ſun, and if the external air is excluded from them, they will ſucceed better than when it is admitted to them. It may alſo be propagated by laying down the young branches, which will take root in the tubs or pots in one year; then the young plants ſhould be put each into a ſeparate pot, filled with ſoft loamy earth, and placed in the ſhade till they have taken new root, when they may be placed in a ſheltered ſituation during the ſummer, but in winter they muſt be houſed, and treated in the ſame way as Orange-trees, with only this difference, that theſe require more water.

64. The Snap-tree, Juſticia hyſſopifolia, is propagated by cuttings during any of the ſummer months; they ſhould be planted in pots filled with light loamy earth, and plunged into a moderate hot-bed, and ſhaded from the ſun, and now and then gently refreſhed with water, and not too much air admitted to them. In about two months the cuttings will have taken root, then they muſt be gradually inured to the open air, by placing them in a ſheltered ſituation, where they may remain till autumn: if they get root early in the ſummer, ſeparate them each into a ſmall pot, ſetting them in the ſhade till they have taken new root, and place them as above directed; but if it be late in the ſeaſon before they have taken root, let them remain in the ſame pots till the following ſpring. In winter theſe plants muſt be placed in a warm green-houſe or moderately warm ſtove, for they are impatient of cold and damp, nor will they thrive in too much warmth. They will often require water in winter, but it muſt then

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[q] Linn. ſuppl.

[r] Hort. kew.

[s] Burman.

[t] Vahl.

[u] Linn. ſuppl.

[x] Vahl.

[y] Forſkahl.

[z] Linn. ſpec.

[a] Vahl.

[b] Forſter.

[c] Jacquin.

[d] Forſter.

[e] M. S. Banks.

[f] Swartz. prodr.

be given them moderately. In ſummer they muſt be removed into the open air, in a warm ſheltered ſituation; and in warm weather they muſt have plenty of water.

12. 13. 16. 72. 79. 80. All theſe may be propagated by ſeeds, ſown early in the ſpring, in ſmall pots filled with freſh light earth, and plunged into a moderate hot-bed of tanner's bark, obſerving to water the earth gently as it appears dry. The ſeeds frequently lying a year in the ground, the pots muſt not be diſturbed, if they ſhould not appear; but in the winter ſhould be kept in the ſtove, and the ſpring following plunged into a freſh hot-bed. When the plants begin to appear, the glaſſes of the hot-bed ſhould be raiſed every day, when the weather is warm, to admit freſh air: they muſt alſo be frequently watered in warm weather, but not largely whilſt the plants are young, for they are then ſubject to rot at bottom with much moiſture.

When the plants are about two inches high, take them up carefully, and tranſplant each into a ſmall pot filled with freſh light earth, plunging them into the hot-bed again, watering and ſhading them till they have taken new root: then they ſhould have air admitted to them every day in proportion to the warmth of the ſeaſon, and ſhould be duly watered every two or three days in hot weather.

As the plants advance in their growth, they ſhould be ſhifted into larger pots; for if their roots are too much confined, the plants will not make any conſiderable progreſs; but they ſhould not be over potted, for that will be of worſe conſequence than the other; becauſe when they are planted in very large pots, they will ſtarve and decay, without producing any flowers. They are too tender to endure the open air in this country, therefore they ſhould always remain in the hot-bed, being careful to let them have a due proportion of air in hot weather; and the annual or twelfth ſort ſhould be brought forward as faſt as poſſible in the ſpring, that the plants may flower early, otherwiſe they will not produce good ſeeds in England.

The thirteenth and ſeventy-ninth ſorts ſhould remain in the hot-bed during the ſummer ſeaſon, provided there is room under the glaſſes, without being ſcorched; but at Michaelmas they ſhould be removed into the ſtove, and plunged into the bark-bed, where they muſt remain during the winter ſeaſon, obſerving to keep them warm, as alſo to water them gently once or twice a week, according as they ſhall require. The following ſummer theſe plants will flower, and abide ſeveral years, but they rarely produce good ſeeds in Europe.

The ſixteenth ſort may be more hardily treated, when the plants have obtained ſtrength. This may be alſo increaſed by cuttings, as directed for the Snap-tree (n. 64.); and when the plants are two or three years old, they will thrive in a moderate degree of warmth in winter, and in ſummer they may be placed abroad for two months in the warmeſt ſeaſon; but they ſhould have a ſheltered ſituation, and when the nights begin to grow cold, they muſt be removed into the ſtove, but they muſt have free air admitted to them at all times when the weather is warm. The ſeventy-ſecond and eightieth ſorts ſhould conſtantly remain in the bark-ſtove, and require the ſame treatment as other tender plants from the warmeſt countries.

IVY. See *Hedera*.
—— Ground. See *Glecoma*.

IXIA (*of Pliny*, Ιξια *of Dioſcorides.*)
Lin. gen. n. 56. *Reich.* 62. *Schreb.* 76. *Thunb. diſſ.* 2. *Gærtn. t.* 13. *Juſſ.* 58.
Claſſ. 3. 1. Triandria Monogynia.
Nat. order of *Enſatæ.—Irides*, Juſſ.

GENERIC CHARACTER.

CAL. *Spathe* bivalve, inferior, ſhorter than the corolla: *valves* oblong, permanent, the exterior wider, ſheathing the interior.

COR. one-petalled, regular, ſuperior; *Tube* filiform, gradually enlarged, ſtraight. *Border* regular, bell-ſhaped, ſix-parted: *diviſions* oblong, obtuſe, equal, ſpreading.

STAM. *Filaments* three, thread-ſubulate, inſerted into the tube near the orifice, ſhorter than the corolla. *Anthers* oblong, furrowed.

PIST. *Germ* inferior, triangular. *Style* ſimple, filiform, upright. *Stigmas* three, filiform.

PER. *Capſule* ovate, three-ſided, obtuſe, three-celled, three-valved.

SEEDS ſeveral, roundiſh, ſmooth.

ESSENTIAL CHARACTER.

Cor. one-petalled, tubular; tube ſtraight, filiform; border ſix-parted, bell-ſhaped, regular (or nearly ſo).—Stigmas three (or ſix) ſimple.

SPECIES.

[1. Ixia fruticoſa. *Shrubby Ixia.*
Lin. ſyſt. 83. *ſuppl.* 93. *Thunb. diſſ. n.* 1. *fig. prodr. cap.* 9.
Stem branched, covered with imbricate leaves.

2. Ixia minuta. *Minute Ixia.*
Lin. ſyſt. 83. *ſuppl.* 92. *Thunb. diſſ. n.* 2. *fig. prodr. cap.* 9.
Scapes one-flowered, ſhorter, leaves even.

3. Ixia Bulbocodium. *Crocus-leaved Ixia.*
Lin. ſyſt. 83. *Reich.* 1. 97. *mant.* 320. *Jacqu. ic. vol.* 2. *collect.* 3. 265. *Curt. magaz.* 265.
Syſirinchium aſprenſium. *Col. ecphr.* 2. 5. *t.* 7.
S. minus anguſtifolium, flore majore variegato. *Bauh. pin.* 41.
Crocus vernus anguſtifolius 4. *Cluſ. hiſt.* 1. 208.
Stem one-flowered, leaves linear, cloſely complicated, ſtigmas ſix.

4. Ixia roſea. *Roſe-coloured Ixia.*
Lin. ſyſt. ed. 13. 75. *Reich.* 1. 97. *Mill. fig.* 160. *t.* 240. (Bulbocodium).
I. Bulbocodium. *Thunb. diſſ. n.* 3. *prodr. cap.* 9.
Scapes one-flowered, leaves linear, nerved, incraſſated at the edge, ſtigmas ſix.

5. Ixia parviflora. *Small-flowered Ixia.*
Saliſb. prodr. hort. 34. *n.* 3.
Leaves linear, compreſſed, ſegments of the corolla lanceolate, retuſe, the inner ſcarcely wider, ſtigmas bifid, ſpreading-revolute.

6. Ixia fugax. *Fugacious Ixia.*
Saliſb. prodr. hort. 34. *n.* 4.
Leaves linear compreſſed, ſegments of the corolla linear-lanceolate, blunt, the inner wider and more erect, ſtigmas bifid, horizontal-recurved.

7. Ixia humilis. *Humble Ixia.*
Lin. ſyſt. 84. *Thunb. diſſ. n.* 4. *prodr. cap.* 9.
Scape branched, flowers pointing one way, leaves grooved, erect, longer.

8. Ixia piloſa. *Hairy Ixia.*
Lin. ſyſt. 84. *ſuppl.* 92. *Thunb. diſſ. n.* 5. *prodr. cap.* 9.
Leaves linear, hairy, ſhorter, flowers alternate.

9. Ixia hirta. *Rough-haired Ixia.*
Lin. ſyſt. 84. *Thunb. diſſ. n.* 6. *prodr. cap.* 9.
Leaves enſiform, rough-haired, ſhorter, flowers pointing one way.

10. Ixia ſecunda. *One-ranked Ixia.*
Lin. ſyſt. 84. *Thunb. diſſ. n.* 7. *prodr. cap.* 9. *Berg. cap.* 6. *Roche pl. nov.* 17.
Leaves elliptic, enſiform, ſhorter, ſcape villoſe, rugged.

11. Ixia criſpa. *Wave-leaved Ixia.*
Lin. ſyſt. 84. *ſuppl.* 91. *Thunb. diſſ. n.* 8. *prodr. cap.* 9.
I. undulata. *Saliſb. prodr. hort.* 37. *n.* 20.
Leaves linear, waved, ſhorter, flowers alternate.

12. Ixia cinnamomea. *Cinnamon-coloured Ixia.*
Lin. ſyſt. 84. *ſuppl.* 92. *Thunb. diſſ. n.* 9. *prodr. cap.* 9.
Leaves lanceolate waved, ſhorter, flowers alternate.

13. Ixia corymboſa. *Corymbed Ixia.*
Lin. ſyſt. 84. *Thunb. diſſ. n.* 10. *prodr. cap.* 9.
Leaves lanceolate waved, ſhorter; ſcape ancipital.

14. Ixia linearis. *Linear-leaved Ixia.*
Lin. ſyſt. 84. *ſuppl.* 92. *Thunb. diſſ. n.* 11. *prodr. cap.* 9.
Leaves linear, ſhorter, ſcape ſimple, upright.

15. Ixia capillaris. *Slender-ſcaped Ixia.*
Lin. ſyſt. 84. *ſuppl.* 92. *Thunb. diſſ. n.* 12. *prodr. cap.* 9.
I. gracilis. *Saliſb. prodr. hort.* 37. *n.* 22.
Leaves linear, ſhorter, ſcape branched, ſpathe ſcarioſe.

16. Ixia ſetacea. *Briſtle-leaved Ixia.*
Lin. ſyſt. 84. *Thunb. diſſ. n.* 13. *prodr. cap.* 9.
Leaves linear, ſhorter, ſcape flexuoſe, ſmooth.

17. Ixia ſcillaris. *Squil-flowered Ixia.*
Lin. ſyſt. 85. *Reich.* 1. 99. *Thunb. diſſ. n.* 14. *prodr. cap.* 9. *Houtt. hiſt. nat.* 12. *t.* 77. *f.* 2.
Leaves linear, ſhorter, flowers pointing one way, rachis flexuoſe.

18. Ixia aulica. *Cluſter-flowered Ixia.*
Ait. hort. kew. 1. 57.
Flowers in racemes, bractes entire, leaves enſiform, flat, nerved, even.]

19. Ixia bulbifera. *Bulb-bearing Ixia.*
Lin. ſpec. 51. *ſyſt.* 85. *Reich.* 1. 99. *amoen.* 4. 300. *Thunb. diſſ. n.* 17. *prodr. cap.* 10. *Mill. fig.* 158. *t.* 236. *f.* 2.
Siſyrinchium æthiopicum majus, &c. *Comm. hort.* 1. 42.
Leaves enſiform, ſhorter, ſpathes membranaceous, briſtle-ſhaped-jagged.

[20. Ixia ariſtata. *Bearded Ixia.*
Lin. ſyſt. 85. *Thunb. diſſ. n.* 15. *prodr. cap.* 9.
α. Corollis purpureis. *Purple-flowered bearded Ixia.*
I. uniflora. *Reich. ſyſt.* 1. 98. *Jacqu. collect.* 4. 181. *ic. vol.* 2. *Mill. fig. t.* 237. *f.* 3.
I. grandiflora. *Hoult. hiſt. nat.* 12. 29. *t.* 77. *f.* 3. *Roche pl. nov.* 23. *Saliſb. prodr. hort.* 37. *n.* 26.
β. Cor. violaceis, laciniis margine ſtramineis. *Violet-flowered bearded Ixia. Mill. fig.* 158. *t.* 237. *f.* 1, 2.
Leaves enſiform, ſmooth, flowers alternate, ſeſſile, ſpathes the length of the tube, and jagged.

21. Ixia reticularis. *Netted Ixia.*
Saliſb. prodr. hort. 37. *n.* 25.
Border of the corolla four times as long as the tube, recurved, funnel-form at the baſe; ſegments ſpatulate, ſomewhat acuminate, the inner narrower; filaments erect, ſtigmas at the baſe of the anthers.

22. Ixia villoſa. *Dark red Ixia.*
Ait. hort. kew. 1. 58.
I. purpurea. *Jacqu. collect.* 3. 268. *ic. vol.* 2. 286.
I. flabelliformis. *Saliſb. prodr. hort.* 37. *n.* 23.
Leaves oblong-lanceolate, acute, villoſe, ſomewhat plaited, diſtich, tube equal to the ſpathe.

23. Ixia pendula. *Pendulous-flowered Ixia.*
Lin. ſyſt. 85. *ſuppl.* 91. *Thunb. diſſ. n.* 16. *prodr. cap.* 9.
Leaves linear-enſiform, ſhorter, ſcape branched, ſpikes pendulous.]

24. Ixia flexuoſa. *Bending-ſtalked Ixia.*
Lin. ſpec. 51. *Reich.* 1. 99. *Mill. fig.* 104. *t.* 156. *f.* 2. *Curt. magaz.* 127.
Leaves linear, raceme flexuoſe, many-flowered.

25. Ixia polyſtachia. *Many-ſpiked Ixia.*
Lin. ſpec. 51. *Reich.* 1. 99. *Mill. fig.* 104. *t.* 155. *f.* 2.
I. erecta. *Lin. ſyſt.* 85. *Berg. cap.* 5. *Thunb. diſſ. n.* 18. *prodr. cap.* 10.
I. thyrſiflora. *Roche pl. nov.* 20.
I. ſerotina. *Saliſb. prodr. hort.* 34. *n.* 5.
Leaves enſiform, ſhorter, ſcape branched, flowers alternate, unſpotted—border of the corolla incurved and ſpreading very much; ſegments lanceolate, blunt, equal in breadth; filaments ſpreading and recurved; ſtigmas at the baſe of the filaments.

[26. Ixia longiflora. *Long-flowered Ixia.*
Berg. cap. 7. *Ait. hort. kew.* 1. 58. *Curt. magaz.* 256. *Saliſb. prodr. hort.* 37. *n.* 21.
I. paniculata. *Roche pl. nov.* 26. *t.* 1.
Gladiolus longiflorus. *Lin. ſyſt.* 87. *ſuppl.* 96. *Thunb. glad. n.* 22.
Leaves enſiform-linear, ſtiff, tube filiform, very long.

27. Ixia plantaginea. *Fox-tail Ixia.*
Ait. hort. kew. 1. 59.
Gladiolus alopecuroides. *Lin. ſpec.* 54. *ſyſt.* 86. *Reich.* 1. 102. *Thunb. glad. n.* 14.
Leaves linear, ſtiff, ſpike diſtich, imbricated.

28. Ixia marginata. *Broad-leaved Ixia.*
Ait. hort. kew. 1. 59.
Gladiolus marginatus. *Lin. ſyſt.* 86. *ſuppl.* 95. *Thunb. glad. n.* 20.
Many-ſpiked, leaves enſiform, nerved, thicker at the edge, ſpikes preſſed cloſe, tube curved inwards, ſtigmas ſix.

29. Ixia patens. *Spreading-flowered Ixia.*
Ait. hort. kew. 1. 59.
I. flaccida. *Saliſb. prodr. hort.* 35. *n.* 13.
I. ariſtata. *Schneev. ic. t.* 32.
Leaves enſiform, ſmooth, raceme terminating, corolla bell-ſhaped, patulous, alternate ſegments narrower, filaments upright—ſtigmas above the baſe of the anthers.

30. Ixia maculata. *Spotted Ixia.*
Lin. ſpec. 1664. *ſyſt.* 85. *Reich.* 1. 99. *Thunb. diſſ. n.* 19. *prodr. cap.* 10. *Mill. fig.* 104. *t.* 156. *f.* 1.
J. Milleri. *Berg. cap.* 8.
Leaves enſiform, ſhorter, ſcape branched, flowers alternate, corollas ſpotted at the baſe.

31. Ixia deuſta. *Copper-coloured Ixia.*
Ait. hort. kew. 1. 60.
I. gibba. *Saliſb. prodr. hort.* 38. *n.* 31.
Leaves lanceolate, nerved, flowers alternate, ſeſſile, tube ſhorter than the bractes, borders blunt, the outer ſpotted at the baſe, and keeled—ſtigmas under the middle of the anthers.

32. Ixia crocata. *Crocus-flowered Ixia.*
Ait. hort. kew. 1. 60.
I. hyalina. *Saliſb. prodr. hort.* 38. *n.* 27.
α. Floribus croceo-rufeſcentibus. *Common Crocus-flowered Ixia.*
Lin. ſpec. 52. *ſyſt.* 85. *Reich.* 1. 99. *Thunb. diſſ. n.* 20. *prodr. cap.* 10. *Mill. fig.* 160. *t.* 239. *f.* 2. *Curt. magaz.* 184.
β. Floribus læte rubris. *Red Crocus-flowered Ixia.*
Leaves enſiform, flowers alternate, tube the length of the bractes, borders of the corolla ovate, quite entire, hyaline at the baſe—ſtigmas at the tip of the anthers.

33. Ixia ſqualida. *Squalid Ixia.*
Ait. hort. kew. 1. 61.
α. I. ſ. patula. *Spreading ſqualid Ixia.*
I. ſimilis. *Saliſb. prodr. hort.* 38. *n.* 28.
Borders cuneiform-oblong, bluntly emarginate, ſomewhat hyaline at the baſe.
β. I. ſ. ſtricta. *Upright ſqualid Ixia.*
Gladiolus lineatus. *Saliſb. prodr. hort.* 40. *n.* 7.
Leaves ſtiff and ſtraight, borders ovate-oblong, quite entire, concolor at the baſe.
Leaves linear-lanceolate, flowers alternate, ſeſſile, tube longer than the bractes, borders ovate-oblong—ſtigmas below the tip of the anthers.

34. Ixia lancea.
Lin. ſyſt. 85. *Thunb. diſſ. n.* 21. *prodr. cap.* 10.
Leaves enſiform, ſhorter, flowers pointing one way, ſcape ſimple, flexuoſe.

35. Ixia pentandra.
Lin. ſyſt. 85. *Thunb. diſſ. n.* 22. *prodr. cap.* 10.
I. ſcillaris. *Lin. ſpec.* 52. (n. 17.)
Leaves enſiform, ſhorter, flowers five-ſtamened.

36. Ixia falcata.
Lin. ſyſt. 85. *ſuppl.* 92. *Thunb. diſſ. n.* 23. *prodr. cap.* 10.
Leaves enſiform, reflex-ſickle-ſhaped, ſhorter.

37. Ixia exciſa.
Lin. ſyſt. 85. *ſuppl.* 92. *Thunb. diſſ. n.* 24. *prodr. cap.* 10.
Leaves ovate, ſhorter, flowers pointing one way, ſcape flexuoſe.]

38. Ixia chinenſis. *Chineſe Ixia.*
Lin. ſpec. 52. *Reich.* 1. 98. *hort. upſ.* 16. *Gærtn. fruct.* 1. 40. *Lour. cochinch.* 36. *Trew. Ehret.* 23. *t.* 52. *Curt. magaz.* 171. *Rheed. mal.* 11. 73. *t.* 37.
Moræa chinenſis. *Lin. ſyſt.* 93. *Thunb. diſſ. n.* 19. *jap.* 34.
Ferraria crocea. *Saliſb. prodr. hort.* 41. *n.* 1.
Bermudiana. *Amm. in Comm. petrop.* 11. 308. *t.* 7.
Leaves enſiform, panicle dichotomous, flowers peduncled.

[39. Ixia fallax.
Saliſb. prodr. hort. 34. *n.* 6.
Border of the corolla incurved and ſpreading very much, ſegments oval, ſlightly emarginate, equal in breadth, filaments ſpreading and recurved, ſtigmas at the baſe of the filaments.

40. Ixia mutabilis.
Saliſb. prodr. hort. 34. *n.* 7.
Border of the corolla deflex, ſalver-ſhaped at the baſe, ſegments broadly obovate, retuſe, the inner narrower; filaments from upright ſpreading, ſtigmas below the apex of the tube.

41. Ixia ſocialis.
Saliſb. prodr. hort. 35. *n.* 8.
Border of the corolla horizontal, ſegments elliptical, the outer emarginate, the inner narrower, blunt, filaments from upright ſpreading, ſtigmas at the middle of the filaments.

42. Ixia lineata.
Saliſb. prodr. hort. 35. *n.* 9.
Border of the corolla incurved and ſpreading very much, ſegments oval, blunt, inner narrower, filaments recurved at the tip, ſtigmas below the tip of the filaments.

43. Ixia amoena.
Saliſb. prodr. hort. 35. *n.* 10.
I. maculata. *Schneev. ic.* 25.
Border of the corolla incurved and horizontal, ſegments oval-lanceolate, ſomewhat retuſe, inner narrower; filaments from upright ſpreading; ſtigmas at the baſe of the filaments.

44. Ixia retuſa.
Saliſb. prodr. hort. 35. *n.* 11.
Border of the corolla incurved and ſpreading very much, ſegments oval, retuſe, inner narrower, filaments upright, ſtigmas at the middle of the filaments.

45. Ixia ſpectabilis.
Saliſb. prodr. hort. 35. *n.* 12.
I. maculata viridis. *Schneev. ic.* 6.
Border of the corolla incurved and horizontal, ſegments lanceolate, outer emarginate, inner narrower, blunt, filaments from upright ſpreading, ſtigmas at the baſe of the filaments.

46. Ixia concolor.
Saliſb. prodr. hort. 36. *n.* 14.
Border of the corolla incurved and horizontal, ſegments elliptical, blunt, inner narrower, filaments from upright ſpreading, ſtigmas above the middle of the anthers.

47. Ixia conica.
Saliſb. prodr. hort. 36. *n.* 15.
Border of the corolla reflex, ſhaped like a diſh at the baſe, ſegments elliptical, blunt, inner broader; filaments upright, ſtigmas above the baſe of the anthers.

48. Ixia conſpicua.
Saliſb. prodr. hort. 36. *n.* 16.
Border of the corolla incurved and horizontal, ſegments elliptical, blunt, inner narrower; filaments from upright recurved, ſtigmas at the baſe of the filaments.

49. Ixia concinna.
Saliſb. prodr. hort. 36. *n.* 17.
Border of the corolla reclining, funnel-form at the baſe, ſegments elliptical, blunt, inner narrower, filaments from upright recurved, ſtigmas below the middle of the filaments.

50. Ixia columnaris.
Saliſb. prodr. hort. 36. *n.* 18.
Border of the corolla the length of the tube, reflex, ſalver-ſhaped at the baſe, ſegments elliptical, the inner a little wider; filaments monadelphous; ſtigmas above the baſe of the anthers.

51. Ixia eroſa.
Saliſb. prodr. hort. 36. *n.* 19.
Margins of the nerves duplicate-ciliate, baſe of the corolla funnel-form, ſegments elliptical, gnawn at the tip.

52. Ixia tardiflora.
Saliſb. prodr. hort. 38. *n.* 29.
Border of the corolla recurved at top, ſegments broadly ſpatulate emarginate, the three lower at the diſk of the baſe within, putting out a little keel, ſtigmas at the baſe of the anthers.

53. Ixia propinqua.
Saliſb. prodr. hort. 38. *n.* 30.
Border of the corolla recurved and ſpreading at top, ſegments ſpatulate, ſlightly emarginate, the three lower approximating a little, at the diſk of the baſe within putting out a little keel; ſtigmas at the middle of the anthers.

54. Ixia ambigua.
Saliſb. prodr. hort. 39. *n.* 32.
Border of the corolla recurved a little at top, ſegments rhomb-ſpatulate, equal in breadth, the outer ſomewhat gibbous at bottom, emarginate, inner blunt; ſtigmas above the middle of the anthers.

DESCRIPTIONS, &c.

Root fibrous or tuberous tunicated. Leaves flat, ſheathing at the edge or channelled, or nerved and graſs-like. Stem often compreſſed, ſometimes ſcarcely any. Flowers terminating, ſolitary, or in ſpikes, panicles or heads. Spathes ſubuniflorous. The ſubſeſſile lobe of the germinating ſeed is faſtened to the back of the primary ſheath of the leaves[a].

Ixia differs from Antholyza in having the ſegments of the corolla nearly equal; from Gladiolus in the ſituation of the ſegments of the corolla, and in having the tube ſtraight. A few of the ſpecies are referred by ſome to Moræa; whilſt others would ſink that genus in this.

The Spathe is longer or ſhorter than the tube in different ſpecies, blunt or ſharp, entire or lacerated, ſmooth or hirſute. The tube of the corolla is more or leſs deeply parted; ringent, cylindrical or filiform; ſimple, that is, nearly equal; or double, that is, filiform at the baſe, and then cylindrical; curved or jointed. Border moſt commonly bell-ſhaped; equal or unequal; reflex, ſpreading, and curled or waved, but ſeldom[b].

Almoſt all the ſpecies are natives of the Cape of Good Hope.

1. Stem ſuffruticoſe, branched, the whole ſmooth and covered with leaves, a hand or ſomewhat more in height. Leaves linear, attenuated at the tip, ſubfalcated, very finely ſtriated, very cloſely imbricated, from an inch to two inches in length. Flowers terminating, blue. Spathes membranaceous. Tube of the corolla yellow, half an inch in length. Native of the Cape, and of Terra del Fuego.

2. Bulb globular, covered with a net, the ſize of a pea. Leaves included in a ſheath, linear, concave above, convex beneath, ſmooth, upright, the length of the ſcapes, and one to each ſcape. Scape ſeldom ſingle, commonly two to four or more, ſimple, round, upright, ſmooth, pale purple, an inch long. Bractes two, a little above the middle, linear-filiform, oppoſite, upright, ſcarcely a line in length. Calyx none, except the bractes. Tube of the corolla white, with purple ſtreaks. Segments of the border concave above of a ſnowy whiteneſs, underneath white, with a double purple ſtreak, the length of the tube, half a line in length. Anthers upright, yellow. Capſule green, with purple ſtreaks. The whole appearance is ſo like that of *Fabricia minuta*, that unleſs the ſtamens, ſtigma and bulb be inſpected, it ſeems to be the ſame[c].

3. Bulb roundiſh, placed on the withered bulb, double the ſize of a pea, white, covered with a bay-coloured ſkin. Leaves three or four, in the flowering plant radical, in the fruiting cauline, ſpreading horizontally, half a foot or thereabouts in length, ſmooth, ſharpiſh. Stem ſolitary, upright, two inches high, above the uppermoſt leaf convex on one ſide, flat on the other; in the fruiting plant a little higher, in the cultivated one ſometimes half a foot high. Spathe terminating, two-valved; leaflets narrow-lanceolate, acute, concave, oppoſite; one upright, green, almoſt the length of the corolla; the other a little ſhorter, green on the back, but otherwiſe membranaceous and pellucid, patulous, whence the flower becomes as it were lateral. It is inodorous. The corolla pale violet, yellow on both ſides at the baſe: the outer ſegments are commonly more yellow on the outſide, with browniſh ſtreaks. Stamens yellow. Germ green. Style and ſtigma pale yellow. Capſule ſmooth and aſh-coloured, larger than a pea. Seeds ſhining, browniſh[d].

Native of Italy. Cultivated 1739 in the botanic garden at Chelſea[e]. It is not the Bulbocodium of Miller. It flowers about the middle of april; but the bloſſoms do not fully expand unleſs expoſed to the ſun, nor are they of long duration. It affects dry hilly ſituations [f]. It is ſaid to have been found in Guernſey and Jerſey.

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[a] Juſſieu.
[b] Thunb. & Schreb. gen.
[c] Thunb. diſſ.
[d] Jacquin.
[e] Hort. kew.

4. Bulb ovate, ſmooth, ſubtruncated. Scape three (or four) cornered, ſheathed at bottom, branched, few-flowered, ſmooth, from a hand to a ſpan in height. Leaves acute, grooved, ſmooth, the loweſt, which is the longeſt, frequently double the length of the ſcape, or more, is lax and reflex; the two or three others are about the length of the ſcape, and upright. Flowers at the ends of the branches, rather large, coming out one after the other. Outer ſpathe ovate, green; inner lanceolate, acute, membranaceous, ſheathing the capſule. Tube of the corolla very ſhort: ſegments of the border yellow within, with three brown ſtreaks, greeniſh-yellow on the outſide. Filaments pubeſcent. Stigmas ſix, reflex.

It varies with the three inner ſegments of the corolla yellow, and the three outer green; the three inner white-yellow, the three outer greeniſh; the three inner blue-white, the three outer greeniſh; the three inner white, the three outer green; with corollas wholly yellow, or wholly blue, or roſe-coloured with a yellow baſe. It varies alſo in the ſize of the flowers. The ſcape is really many-flowered, but ſometimes one flower only opens. The leaves are filiform, linear or enſiform, uſually longer than the ſcape, and frequently reflex [g].

This and the preceding were ſeparated in the thirteenth edition of Syſtema Vegetabilium; but were conſidered as one ſpecies by Murray in the fourteenth; as they are by Thunberg in his Monographia. They ſeem, however, to be very diſtinct; the leaves of this being three or four-ſided from the rib raiſed on both ſides, and thickened at the edge. The ſame bulb alſo puts up ſeveral ſcapes. It is a native of the Cape, and was cultivated in 1758 by Mr. Miller [h].

5. The leaves of this are very narrow, being only half a line in width. The tube of the corolla is only a line long. It was gathered wild in Jerſey, by Mr. R. Finlay [i]. Mr. Lambert aſſures me that it is in Hudſon's herbarium, among his Jerſey plants, now in Mr. Lambert's poſſeſſion. Probably only a variety of the third.

6. Leaves only one line in width. Tube of the corolla only a quarter of a line long. Found at the Cape by Maſſon.

This and the preceding are very nearly allied to I. Bulbocodium.

7. Bulb ſmooth, the ſize of a hazel nut. Scape ſimple or branched, filiform, upright, from a hand to a ſpan in height. Leaves two or three, linear, many-grooved, ſmooth, longer than the ſcape. Flowers in racemes, three to eight on a flexuoſe rachis. Spathes green, truncated. It varies with the corolla yellow, whitiſh rufeſcent, or fleſh-coloured; with an undivided few-flowered ſcape, and a branched many-flowered ſcape.

8. Bulb globular, ſmooth, ſcarcely as big as a pea. Leaves acuminate, about three, upright, ſtriated; only about half the length of the ſcape. Scape ſimple, round, upright, ſmooth, many-flowered, a hand or more in height, duſky purple at top. Flowers ſeſſile, ſomewhat nodding. Corolla rufeſcent without, white within. Segments of the corolla concave, the three lower white, the three outer white within, greeniſh-purple on the outſide, with a white edge. Anthers linear, bifid at the baſe, inſerted at the back above the baſe, yellow. Stigmas from upright bent in, rough-haired, white. Capſule ſix-grooved. The flowers open from four in the afternoon.

9. Leaves ſtriated, villoſe, ſhorter than the ſcape. Scape ſimple, inflex-erect, ſmooth. Flowers dark blue. Spathes entire. It reſembles the next ſpecies very much, but the leaves are very villoſe, with white hairs.

10. Bulb imbricate downwards, hard, the ſize of a pea. Leaves attenuated next the baſe, ſmooth, nerved with the midrib thicker, upright, only half the length of the ſcape. Scape round, flexuoſe, upright, ſeldom ſimple, moſt frequently branched, the branches flexuoſe and ſpreading, from a ſpan to a foot in height. Flowers generally four, five or ſix, ſeldom fewer, upright, blue, pointing one way, on a flexuoſe rachis. Spathes green at the baſe, brown at the tip, entire. This ſingular plant is diſtinguiſhed from the reſt by its flexuoſe rachis and its villoſe-rugged ſcape. It varies with the ſcape ſimple and branched.

11. Bulb netted, ovate. Leaves about five, linear-lanceolate, acute, moſt elegantly curled (or waved) on the edge, ſmooth, with a thick longitudinal nerve, not half the length of the ſcape. Scape ſimple or branched, round, ſmooth, flexuoſe, upright, many-flowered, about a foot in height. Flowers remote. Outer ſpathe three-toothed, ſtriated, with as many nerves; inner two-toothed, with two nerves. Tube of the corolla greeniſh; ſegments of the border blue. Anthers fixed at one end, inflex. Stigmas from reflex ſpreading, club-ſhaped at the end. It varies with the ſcape ſimple and branched; with the corollas blue and white.

12. Bulb conical, imbricate downwards, truncated, with a ſharp fibrous edge, ſmooth, the ſize of a pea. Scape ſimple, round, from flexuoſe upright, green-purple, ſmooth, a ſpan high. Root-leaves two, ſheathing, blunt, ſubfalcate-reflex, with the midrib raiſed, and the edge curled or waved, a finger's length, one third of the length of the ſcape: of the cotyledon one, embracing, ovate, obtuſe, reflex at the tip, entire, ſmooth: ſtem-leaves two, ſpathe-form, remote; the lower convolute-ſheathing with a long ſheath, compreſſed at the tip, obverſe: often curled, ſmooth, from an inch to three inches in length. Flowers pointing one way, upright, from three to nine. Rachis ſubflexuoſe, ſmooth. Outer ſpathe concave, blunt with a point, ſmooth, green with a purple tip, a little ſhorter than the tube, a line in length: inner nearly equal, bifid. Tube of the corolla a little enlarged, and ſomewhat curved, purpliſh: the three inner ſegments of the border entirely white; the three outer white within, purple-ſtriated without. Anthers upright, inſerted into the back above the baſe, linear-awl-ſhaped, ſhorter than the border, yellow. Capſule ſix-ſtreaked.—The ſpike of flowers reſembles that of *Gladiolus recurvus*, but the corolla is regular. In its curled leaves it reſembles the preceding, but the leaves are lanceolate, two lines wide.

13. Bulb ovate, truncated, netted. Root-leaf ſingle, enſiform, ſtriated, recurved, ſmooth, a finger's length, only half the length of the ſcape. Stem-leaves one or two, ſpathe-form, embracing, ſtriated, decurrent, ſmaller. Scape ſimple at bottom, panicled at top, ſtriated, ſmooth, flexuoſe, upright, a ſpan high. Branches alternate, dichotomous, compreſſed, faſtigiate. Flowers terminating on ſubumbelled-faſtigiate branches. Spathe green, with a blunt red tip. Tube of the corolla gradually widening, the length of the ſpathe: ſegments of the border lanceolate. Stigmas globular at the tip.—It varies with white and with blue flowers.

14. Bulb ovate, fibrous, even, the ſize of a hazel nut. Scape round, ſmooth, a hand or a ſpan high or more. Leaves about three: the lower far-ſheathing, linear, convex on both ſides, with a raiſed line in the middle, very narrow, being ſcarcely half a line in width, upright, a little attenuated at the tip, entire, ſmooth, a little ſhorter than the ſcape, ſeldom equal to it: the two upper ſpathaceous, very ſhort. Flowers commonly two or three (ſeldom one) pointing the ſame way. Spathe convolute, lanceolate, acute, ſtriated, ſmooth; the outer larger, the length of the corolla. Tube of the corolla whitiſh: ſegments of the border blunt, with a point. Stigmas revolute-ſpreading, purpliſh. Capſule ſcarcely angular, ſix-ſtreaked.

15. Bulb netted, fibrous, the ſize of a hazel nut. Leaves nerved, ſmooth, ſhorter by half than the ſcape. Scape round, divided at the tip, capillary, upright, two feet high, with pedicel-ſhaped one-flowered branches. Flowers terminating the branches, or at the end of the ſcape, alternate, ſeſſile, upright, whitiſh, netted-veined. Spathes ſcarioſe, with duſky veins,

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[f] Curtis.

[g] Thunberg.

[h] Hort. kew.

[i] Saliſbury.

toothed. The flowers in this ſpecies ſeem peduncled, but the branches are one-flowered[k].

The tube of the corolla is ſhorter than the bractes, broad-funnel-ſhaped; the border is contracted at the baſe, and the ſegments are linear[l].

16. Leaves acute, very narrow, ſhorter than the ſcape, with a raiſed line in the middle, ſmooth, about three; in the middle of the ſcape is a ſhort leaf reſembling the ſpathes. Scape filiform, upright, few-flowered, red, a finger's length, ſimple, branched or bifid. Spathe ſubinflated, green, very concave, ſtriated, ſmooth, the length of the tube. The three outer ſegments of the border of the corolla are white within, red-ſtreaked without; the three inner entirely white. Style longer than the ſtamens, ſhorter than the corolla, filiform, white.—It varies with a greeniſh corolla, white at the tips, and with a yellow corolla, with the baſe of the border duſky—with the ſcape one-flowered, many-flowered and ſimple, many-flowered and branched.—That with a duſky baſe reſembles I. maculata; but it is ſeveral times ſmaller, branched, and the leaves linear and narrow.

17. Scape round, upright, ſmooth, ſheathed, branched, a foot high. Branches filiform, naked, flexuoſe, lax, ſmooth, flowering. Leaves far-ſheathing, about three, thickiſh, ſcarcely half a line in width, with a deep double ſtreak, a ſpan long. Flowers remote, frequently about ten. Outer ſpathe a little larger, ſmooth, ſtriated, green at the baſe, aſh-coloured at the tip, membranaceous, entire: inner green at the baſe; membranaceous, bifid and aſh-coloured at the tip. Tube of the corolla very ſhort, greeniſh-yellow: ſegments of the border concave, yellow; the three outer purpliſh on the back. Stigmas involute, villoſe, yellowiſh. Capſule obſcurely three-cornered, ſix-grooved. Seeds ſomewhat kidney-ſhaped[m].

Thunberg ſuſpects, that the *flexuoſa* of Linneus's ſpecies (n. 24.) and the *ſcillaris* of the ſpecies and ſyſtema, may be the ſame with the *ſecunda* (n. 10.) of himſelf and Bergius. *I. ſcillaris* of Miller is *Gladiolus plicatus.*

18. Introduced from the Cape by Mr. Maſſon in 1774. It flowers in april[n].

19. Scape ſimple or branched, ſomewhat compreſſed, ſtriated, ſmooth, ſheathed at bottom with leaves, from a hand to a foot in height. Leaves nerved and ſtriated, diſtich, upright, ſmooth, a ſpan long. Flowers three or more, large, with the rachis between the flowers flexuoſe. Spathe nerved and netted, gray with a duſky tip. Tube of the corolla only a line in length: border divided beyond the middle, but not to the tube: ſegments large, ovate-oblong, very blunt, ſpreading. Anthers linear, long, convex within, lamelloſe and white without. Capſule ſix-ſtreaked. It varies with the corolla purple, red and white, yellow; with the ſcape very ſhort and ſimple, higher and branched, and bulbiferous[o].

It was cultivated in 1758, by Mr. Miller, as appears from his figures.] According to him, the bulb has a netted coat; the ſtalk riſes near a foot and half high; leaves at each joint, flat, ſmooth, embracing, of a lucid green, and differing greatly in ſize; the flowers are produced towards the top of the ſtalk, each having a ſhort withering ſpathe; ſegments of the corolla lanceolate, equal, ſpreading, acute, white within with a pale purple ſtripe down the middle; on the outſide they have broad deep-purple ſtripes; their baſe is marked with a yellow ſpot. The ſtalks have bulbs formed at each joint at the baſe of the leaves. It flowers in may and june.—In the Dictionary he ſays, that the corolla is of a ſulphur colour. His ſpecimen is in the Bankſian herbarium, with the corolla purple on the outſide.

[20. Bulb netted, the ſize of a hazel nut. Scape ſimple, round, upright, ſmooth, from a hand to a foot in height and more. Leaves four or five, linear, five-nerved, the middle nerve and edges thicker, acute, upright, ſhorter by half than the ſcape. Flowers pointing one way (very ſeldom one only) on two branches, often from five to nine on a ſcarcely flexuoſe rachis. Spathes ſubmembranaceous, awn-toothed. Corollas white-fleſh coloured[p].

α. Root-leaves ſeveral, diſtich, narrow, enſiform, erect, acute, very finely ſtriated, ſmooth, very unequal in length, the longeſt half a foot. Scape higher than the leaves, round, ſmooth, flexuoſe, almoſt upright. Flower terminating, erect, inodorous. Spathe ſcarioſe, ſmooth, two-valved; valves ſtriated, broad, awn-toothed. Tube of the corolla narrow, incurved a little, dark violet colour, the length of the ſpathe: border ſpreading, an inch and half in diameter; ſegments oblong, blunt with a little point, equal, of a very deep and elegant purple-violet colour within, three of them of the ſame colour on the outſide, but the three others alternately of a pale dirty violet; one of theſe with two on the ſide of it has a double band in the throat meeting at one end. Anthers pale yellow. Stigma trifid, filiform, white. It flowers in april[q].

β. It varies, as Mr. Saliſbury obſerves, with whitiſh corollas having a purple ſtar, violet-coloured and yellow. Mr. Miller has repreſented ſome of theſe in his 237th plate. Fig. 1. he ſays, has the corolla of a beautiful purple on the outſide, but white within. The ſtem is terminated by two or three flowers. In fig. 2. the ſtalk is terminated by two large flowers; the outſide of a violet-colour edged with white, the inſide pale blue. The term *uniflora* is improperly applied to theſe; and therefore Mr. Saliſbury has adopted that of *grandiflora*. Fig. 3. is one-flowered, and the corolla is of a moſt beautiful purple colour both within and without[r].—Theſe were cultivated by Mr. Miller in 1758[s].

21. Mr. Saliſbury gives this as very diſtinct from the preceding, but we have no farther deſcription of it than is given in the ſpecific character.

22. Bulb rounded-ovate, the ſize of a hazel nut, brown and ſtriated on the outſide. Leaves ſeveral, enſiform, upright, far-ſheathing at the baſe, villoſe on both ſides and at the edges, with a ſmooth ſtriated ſheath. Scape villoſe, the length of the leaves, few-flowered. Spathes three-valved, green, concave, acute; the outer valve much longer. Flowers alternate, ſeſſile, upright, often three. Tube of the corolla pale purple: border very deep purple; ſegments nearly equal, lanceolate, acute, one-coloured, ſpreading very much, the ſame length with the tube. Filaments purple, half the length of the border of the corolla. Anthers oblong, black-violet. Germ hirſute, green. Stigma trifid, of the ſame colour with the corolla, with the ſegments widening at the tip[t].

This is not the *villoſa* of Jacquin (collect. 167. ic. vol. 2. t. 284.) though he ſays it differs from the *villoſa* of the Kew Catalogue, only in the colour of the flower.

Mr. Saliſbury refers both the *villoſa* of the Kew Catalogue and the *purpurea* of Jacquin to his *I. flabelliformis*, and we have followed him in conſidering them as one plant. He obſerves that it differs from the *Gladioli* only in the regularity of the corolla.

This ſpecies was introduced into the royal garden at Kew from the Cape in 1788 by Patrick Ruſſell, M.D.[u]

23. Root jointed like a necklace; joints ſeveral in a ring, depreſſed, approximating, fleſhy, ruſeſcent. Root-leaves ſheathing the bottom of the ſcape, acute, ſtriated, ſmooth, a foot long or a little more. Scape round, ſmooth, upright, the thickneſs of a writing pen at bottom, divided at top into capillary, nodding, flexuoſe branches, a fathom in height. Spathes membranaceous, jagged. Corollas on the branches alternate, large, fleſh-coloured, with a ſhort tube. This is the loftieſt of all the Ixias, and the large pendulous corollas are very handſome[x].]

24. Bulb very ſmall, round. Leaves three or four, long, ſlender, graſs-like, dark green. Stem very ſlender, round, a foot and half high: at the top the flowers are collected in a ſpike ſitting cloſe to the ſtalk, each having a thin, dry ſpathe, which covers the capſule after the flower is fallen. The corolla is pure

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[k] Thunberg. [l] Saliſbury. [m] Thunberg. [n] Hort. kew. [o] Thunberg.

[p] Thunberg. [q] Jacquin. [r] Mill. fig. [s] Hort. kew. [t] Jacquin. [u] Hort. kew. [x] Thunberg.

white, and ſmall. Capſule ſmall, round. It flowers at the end of may, and the ſeeds ripen in july.

[That which is figured by Mr. Curtis is a variety with a purple eye. He ſays that the flowers are fragrant, and come forth in april or may.—It was cultivated in 1757 by Mr. Miller[y]. His ſpecimen is in the Bankſian herbarium.

Thunberg doubts whether the *Ixia flexuoſa* of Linneus's ſpecies may not be the ſame with his *ſecunda.*

25. Bulb the ſize of a hazel nut. Leaves three or four, many-nerved, upright, ſmooth, half the length of the ſcape. Scape round, ſmooth, upright, many-ſpiked, from a foot to two feet in height. Branches alternate, capillary, upright, a finger's length. Flowers on the ſcape and branches in ſpikes, on a flexuoſe rachis of a finger's length. Spathes ſubmembranaceous and awned. It varies with the corollas yellow and violet, of one colour[z].]

Leaves four or five, ſix or ſeven inches long. Stalk ſlender, ten inches high, from the ſide of which come out one or two cluſters of flowers on ſhort peduncles, and at the top of the ſtalk the flowers grow in a looſe ſpike; they are of a pure white, and appear in may: the ſeeds ripen in july.—[Cultivated in 1757, by Mr. Miller[a].

26. Scape four or five ſpans in height, the thickneſs of Rie ſtraw, upright, round, even, yellowiſh, naked at top and branched. Branches ſimple, alternate, naked, flowering, diſtant. Leaves about ſix, acute, three ſpans long, ſtriated and nerved, ſmooth, yellowiſh green, upright, radical; inner ſheathing. Flowers in ſpikes, yellow. Spikes filiform, ſeveral on a ſcape, with the flowers alternate, diſtant, nodding; rachis ſomewhat flexuoſe. Spathes bivalve: valves oblong, acute, membranaceous, whitiſh, ſtriated, concave, embracing each other, involving the germs, of which they are double the length; one is keeled, the other two-angled, with a bifid tip[b]. Tube of the corolla two, three or four inches in length, funnel-form; border recurved at top, ſegments linear, the outer retuſe, the inner narrower[c].

This ſpecies is eaſily diſtinguiſhed by the extraordinary length of the tube of the corolla. Thunberg ranges it under *Gladiolus,* becauſe this tube is a little curved; though he confeſſes that it has the appearance of an *Ixia.*

It was introduced in 1774, by Mr. Maſſon, and flowers here from april to june[d].

27. Root conſiſting of ſeveral little bulbs. Scape ſheathed with leaves, round, from flexuoſe upright, many-ſpiked at top; ſpikes alternate, wand-like; a ſpan high. Leaves two or three, alternately far-ſheathing, ſtriated, ſmooth, ſhorter than the ſcape, the upper ones gradually ſhorter. Flowers very ſmall. Spikes linear, a finger's length, upright. Spathes with a membranaceous, white margin. Tube of the corolla ſcarcely longer than the ſpathes. It varies with the ſcape ſimple and branched; with the corollas white and blue[e].

Introduced in 1774, by Mr. Maſſon. It flowers in june and july[f].

28. Scape ſimple and many-ſpiked, ſomewhat woody, ſheathed with leaves round, ſmooth, ſtiff and ſtraight, almoſt the thickneſs of a finger, from a foot to four feet in height. Leaves ſheathing, ſhorter than the ſcape, half an inch wide, with a thick yellowiſh vein along the middle and at the edge, marked in lines with ſmaller raiſed yellowiſh veins, ſmooth, upright; the lower longer, a foot and more long; the upper only a ſpan in length, preſſed cloſe. Flowers large, pendulous. Spike with alternate flowers, from a finger to a foot in length, with a flexuoſe rachis[g].

29. Bulb flatted. Scape ſimple, round, ſmooth, longer than the leaves, from ſix inches to two feet in height. Leaves ſtriated, withering at the end. Flowers in a ſort of ſpike, containing from ten to twenty flowers: each peduncle is ſurrounded at the baſe with a ſpathe, the ſegments of which terminate in a ſhort awn. Corolla very deeply ſix-parted, of a bright red colour[h].

Mr. Saliſbury, who in his ſpecific characters of the Ixias, gives the proportion between the tube and the limb or border, ſays that the latter is one and a half longer than the former; that the border is curved inwards and ſpreads very much: that the ſegments are elliptical, retuſe, the inner ones narrower.

It was introduced in 1779, by William Pitcairn, M.D. and flowers in april[i].

30. Bulb double the ſize of a hazel nut. Leaves three, four, or five, many-nerved, half the length of the ſcape. Scape uſually ſimple, ſeldom many-ſpiked, round, upright, from a ſpan to a foot high and more. Branches filiform, upright, or ſpreading very much. Flowers in terminating ſpikes, on a flexuoſe rachis. Spathes membranaceous, gray at the baſe, brown at the tip, ſomewhat jagged. The corolla, above the mouth of the tube, has a duſky ſpot at the baſe of the border. It bears ſo much reſemblance to *I. erecta,* (polyſtachia, n. 25.) as to differ in little elſe, beſides the ſpot in the corolla[k].]

Mr. Miller ſays that the bulb is oval and compreſſed; that the leaves are ſmooth, near a foot long, and a quarter of an inch broad, with two ſharp edges, of a deep green, and ending in acute points. Stalk ſlender, ſtiff, a foot and half long, naked to the top, where it is terminated by a round bunch of flowers, each incloſed in an oblong ſpathe, which is permanent, and ſplits open on one ſide. Flowers on ſhort peduncles, deep yellow with a dark-purple bottom.

[It was cultivated in 1757 by Mr. Miller, and flowers in may and june[l].

31. Leaves linear-lanceolate, acute, quite entire, flat, ſmooth, a ſpan long. Scape round, ſmooth, ſimple. Flowers remote. Bractes two at the baſe of each germ, broad, membranaceous, cloven, ſcarcely half an inch long. Corolla fulvous; tube cylindric-bell-ſhaped, narrow; ſegments of the border ovate, blunt, ſlightly emarginate, more than an inch in length, attenuated at bottom into broad claws; the three outer gibbous at bottom (whence the border at the baſe is triangular-pitcher-ſhaped), marked in the middle with a dark red ſpot, and within have a raiſed keel, at top ſpreading; the three inner almoſt upright, flat, unſpotted: at the throat there is a greeniſh yellow ſtar-like ſpot.

Introduced in 1774, by Mr. Maſſon. It flowers in may[m].

Mr. Saliſbury changes the name from *deuſta* to *gibba,* chooſing to denominate it from the form rather than the colour of the flower.

32. Bulb a little larger than a hazel nut. Leaves about five, reflex-ſubfalcate, many-nerved, from an inch to a finger's length, half or one-third of the length of the ſcape. Scape ſimple, round or branched, ſomewhat flatted, flexuoſe, upright, ſmooth, from a hand to a ſpan in height. Branches ſpreading very much, naked, like the ſcape. Bractes gray at the baſe, ferruginous at the tip, ſlightly toothed and jagged. Flowers pointing one way, handſome, bell-ſhaped, with a ſhort tube, orange-coloured with a paler hyaline or tranſparent mark above the mouth of the tube; ſeldom two, but moſt commonly five or ſeven.

It varies with a ſhort ſimple few-flowered ſcape, and a dark ſpot above the windowed or hyaline one: with a lofty, many-ſpiked, many-flowered ſcape: and with bright red flowers.

This is one of the handſomeſt of the Ixias, and like other ſorts becomes handſomer and more branched by cultivation[n].

Mr. Saliſbury thinks that the name of *hyalina* agrees better with this ſpecies; and gives the name of *ſimilis* to the *hyalina* of the younger Linneus's ſupplement; *ſqualida* α, of the Kew Catalogue. See the next ſpecies.]

According to Mr. Miller, the bulb is oval, ſmall, a little compreſſed, and has a ſmooth dark-coloured coat; whence come up three or four narrow, thin, flat, ſmooth leaves of different lengths, ſome four or five inches long, others ſeven or eight to near a foot, near half an inch broad where wideſt, but narrow at both ends and terminating in points. The flower-ſtalk riſes a little above the leaves; it is very ſlender, naked, except at the joint, where it is crooked, and has a ſmall leaf embracing it. Flowers terminating, in a round cluſter; each having a ſhort, withered, cloven ſpathe. Tube ſhort and ſwelling; ſegments of the border broad, blunt, ſpreading, equal, bright orange or deep gold-colour, with a large black ſpot at the baſe.

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[y] Hort. kew.
[z] Thunberg.
[a] Hort. kew.
[b] Bergius.
[c] Saliſbury.
[d] Hort. kew.
[e] Thunberg.
[f] Hort. kew.
[g] Thunberg.

[h] Schneevoogt.
[i] Hort. kew.
[k] Thunberg.
[l] Hort. kew.
[m] Ibid.
[n] Thunberg.

[It was cultivated in 1758, by Mr. Miller, and flowers in may and june [o].

33. α. Very nearly allied to the preceding, but the ſegments of the border in the corolla are narrower and more pellucid, the veins therefore ſtand more out; they are alſo ſlightly emarginate. The colour in this is pale rufeſcent, or dirty fleſh-colour, with a little tinge of yellow [p].

According to Saliſbury, the border of the corolla is five times as long as the tube in the preceding, but only three and a half in this; it ſpreads at top in this, but is curved back in that: in the preceding the whole ſides are hyaline at bottom, whereas the edges are only ſo in this: the ſtigmas reach up to the tip of the anthers in that, but in this they are lower.

β. Leaves acuminate, ſtrict, flat, ſmooth, ſcarcely a ſpan in length. Scape round, ſmooth, twice as long as the leaves. Flowers remote. Bractes two at the baſe of each germ, membranaceous, cloven at the tip, ſcarcely half an inch in length. Corolla pale-yellow, with duſky veins; tube funnel-form; ſegments of the border ovate-oblong, bluntiſh, quite entire; outer near the tip ſometimes red; one of the inner a little wider than the others.

Introduced in 1774, by Mr. Maſſon. It flowers in may [q].

Mr. Saliſbury makes this a ſpecies of Gladiolus, and gives this ſpecific character—limb of the corolla four times as long as the tube, curved inwards ſpreading, ſegments elliptical, with three parallel lines on the outſide; the uppermoſt larger, the outer ones retuſe.

34. Bulb cloſely involved in the rudiments of leaves, larger than a hazel nut. Leaves three or four, lanceolate-enſiform, thicker about the edges and along the midrib, the edges turned back; very finely ſtriated, ſmooth, upright, a finger's length. On the ſcape a ſpathe-form leaf or two. Scape round, compreſſed, upright, ſmooth, twice as long as the leaves. Flowers about ſix, purpliſh white. Spathes aſh-coloured, ferruginous at the tip, blunt, entire.

35. Scape branched or ſimple, round, flexuoſe, ſmooth, a foot high. Leaves ſtriated, ſmooth, ſeveral times ſhorter than the ſcape. Spike of flowers long, interrupted, flexuoſe. Spathe membranaceous, marked with ſix lines, the length of the tube; the outer larger, keeled, three-toothed. Tube of the corolla greeniſh, ſhort; ſegments of the border purple. Filaments generally three, ſometimes five or four, inſerted into the mouth of the tube, half the length of the border, filiform, whitiſh. Anthers ovate, incumbent or nodding horizontally, ſomewhat compreſſed, twin, yellow. Stigmas generally three, ſometimes five or four, reflex-ſpreading, a little ſhorter than the filaments, blunt, a line in length, feathered. Capſule three-cornered, ſix-grooved. When there are four filaments, two often are united into one body with four ſtigmas, the anthers ſeparate or united. It varies with three-ſtamened flowers having three ſtigmas; with four-ſtamened flowers having four ſtigmas; and with five-ſtamened flowers having five ſtigmas.

36. Bulb conical, imbricate downwards, truncated with a ſharp fibroſe margin, the ſize of a pea. Scape ſimple and branched, ſmooth, purple at top, many-flowered. Leaves diſtich, ſtriated, ſmooth, ſhorter by half than the ſcape. Flowers alternate, one, two or more. Tube of the corolla red: the three inner ſegments of the border rounded, white; the outer white within, red without. Stigmas flexuoſe-involute, rough-haired.

It varies with the ſcape ſimple or branched, a hand or a ſpan in height; with flowers alternate or pointing one way; with the rachis very flexuoſe or ſcarcely ſo at all.

37. Bulb globular, ſmooth, leſs than a pea. Root-leaves two, ovate, blunt, ſmooth, embracing by the inner edge, and there cut out as it were for the paſſage of the ſcape, ſpreading, reſembling one bifid leaf: below the middle of the ſcape there is a ſolitary leaf like a ſpathe. Scape round, upright, ſmooth, one-flowered or many-flowered, a finger or a hand in length. Spathe ſmooth, blunt and ſubcrenate at the tip; the outer green, ſhorter than the tube. Tube of the corolla red: ſegments of the border very blunt, ſpreading, on the outſide rufeſcent ſtreaked with red, on the inſide white ſtreaked with red. Anthers brown, upright. Stigmas ſmall, revolute, rough-haired. Sometimes, but very ſeldom, the ſtem puts out a one-flowered ſtemlet in the middle [r].

38. Scape round, fiſtulous, jointed, upright, ſimple at bottom, panicled-dichotomous or trichotomous at top, ſmooth, almoſt the thickneſs of a finger, two feet high. Leaves alternate, embracing, equitant, acute, entire, ſtriated, ſmooth, the lower a little longer, about half the length of the ſtem, a ſpan long and more. Flowers from the tips of the branches of the panicle in umbels, from three to ſeven, peduncled. Peduncles ſtriated, one-flowered, an inch long. Spathe under the diviſions and the umbel, withered. Corolla connected only by the baſe, yellow and purple ſpotted: claws narrow; border oblong, ſpreading, blunt, entire, three alternate ones a little narrower. Filaments capillary. Anthers linear. Capſule oblong [s].

There is a diſagreement about the genus of this plant. Thunberg places it with the Moræas, and ſays that it cannot be referred to the Ixias, becauſe the flower is not in the leaſt tubular, but ſix-petalled.

Loureiro deſcribes the bulbs as cylindric, branched, with long fibres. Leaves lanceolate-linear. Stem three feet high, two-edged at bottom, round at top. Flowers large, terminating, golden-coloured, dotted with red, in an upright few-flowered panicle. He would unite the two genera of Ixia and Moræa, as ſcarcely differing.

Mr. Saliſbury makes it a *Ferraria*; which genus he ſays differs from Iris only in having no tube to the corolla. This ſpecies, he obſerves, has the ſeeds as in Iris foetidiſſima, with a pulpy arillus.

The accurate Gærtner deſcribes the capſule as inferior, ovate, contracted towards the baſe, rounded-three-cornered, coriaceous. Receptacle awl-ſhaped, three-ſided, free in maturity. Seeds ſeveral, ſix to ten in each cell, ſpherical, ſmooth, black, ſhining, berried, fixed in a double row to the angles of each cell.]

In India, the ſtalks riſe to the height of five or ſix feet, but in England they are ſeldom more than half that height. It has a pretty thick fleſhy root, divided in knots or joints of a yellowiſh colour, ſending out many fibres; the ſtalk is pretty thick, ſmooth, and jointed; leaves a foot long and one inch broad, with ſeveral longitudinal furrows, embracing the ſtalks with their baſe, ending in acute points; the upper part of the ſtalk divaricates into two ſmaller, with a foot-ſtalk ariſing between them, which ſupports one flower; the ſmaller branches divaricate again in the ſame manner into foot-ſtalks, which are two inches long, each ſuſtaining one flower. At each of theſe joints is a ſpatha embracing the ſtalk, theſe at the lower joints are three inches long, but at the upper not more than one inch, ending in acute points and permanent; the flowers are of a yellow colour within, and variegated with dark red ſpots; the outſide is of an Orange colour. Theſe appear in july and auguſt, and in warm ſeaſons are ſucceeded by ſeeds.

[It is a native of the Eaſt Indies, China, Cochinchina and Japan. Cultivated by Mr. Miller in 1759 [t].

The Indians conſider it as an antidote to poiſons in general, and regard the bruiſed root as peculiarly efficacious in curing the bite of the ſerpent called Cobra de Copella [u].

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[o] Hort. kew.

[p] Ibid.

[q] Ibid.

[r] Thunberg, diſſ.

[s] Thunb. jap.

[t] Hort. kew.

[u] Hort. malab.

39 to 54. The remaining ſpecies are taken from the rich Catalogue of Mr. Saliſbury's botanic garden at Chapel-Allerton, publiſhed by himſelf. Of theſe he has given no deſcriptions, but only copious ſpecific diſtinctions.—They are all natives of the Cape.

39. Corolla violet-coloured, limb three-fourths longer than the tube.

40. Border of the corolla one and one-third longer than the tube.

41. Border of the corolla four-ſevenths longer than the tube. Colour white with a green baſe.

42. Border of the corolla one and a half longer than the tube. Herb bright green, ſmooth, rigid[x].

43. Leaves all radical, a foot long, enſiform, ſtriated, ſmooth, quite entire, withering at the tip. Scape almoſt two feet high, round, ſlender, many-flowered, ſometimes branched. Spathe ſmall, two-leaved. Corolla deeply ſix-parted; ſegments ovate-oblong, obtuſe, roſe-purple coloured, with a deep purple baſe[y]. The limb of the corolla is longer by half than the tube.

44. Limb of the corolla as long again as the tube[z].

45. Leaves all radical, very long, linear, graſs-like, ſmooth, glaucous green. Scape three or four feet high and more, round, ſimple. Flowers peduncled, and forming a denſe pyramidal ſpike[a]. Border of the corolla three times longer than the tube[b], deeply ſix-parted, green or blue-green, with a dark-purple baſe. It flowers from may to auguſt[c].

46. Limb of the corolla five times longer than the tube. Colour deep red.

47. Corolla vermilion-coloured with a variegated ſtar at the baſe: limb twice as long as the tube.

48. Corolla orange-coloured with a dark baſe. Limb one-third longer than the tube.

49. Corolla pale yellow: limb longer by half than the tube.

50. Limb of the corolla the ſame length with the tube.

51. This ſpecies is ſingular in its almoſt total want of a tube, but in other reſpects it has the characters of this genus.

52. This has its name from its flowering very ſlowly in our ſtoves. The limb of the corolla is ſix times longer than the tube.

53. Limb of the corolla three and a half longer than the tube.

54. Limb of the corolla three and a half longer than the tube.

The three laſt ſpecies, with the *crocata*, *ſqualida*, and *deuſta*, are very nearly allied, and ſeem to be produced from a mixture with each other[d].

Numerous as the above liſt of Ixias is, there are many more ſpecies not yet determined, beſides numberleſs varieties.]

Several flowered many years ſince in the Chelſea garden: one purple on the outſide and white within; another with white flowers, having a blue ſtripe on the outſide of each petal; a third white with yellow bottoms; beſides many more raiſed from ſeeds. More than thirty ſorts or varieties are mentioned in a catalogue of Herman's. The roots of moſt, if not all the ſorts are frequently eaten by the inhabitants at the Cape of Good Hope.

PROPAGATION AND CULTURE.

Several of the Ixias ripen their ſeeds here, and may be propagated that way, by ſowing the ſeeds in pots, and plunging them into a moderate hot-bed, which will bring up the plants much ſooner than when they are ſown in the full ground; when the plants are fit to remove, they ſhould each be ſet in a ſmall pot filled with light earth, and if they are placed under a frame till they have taken good root, it will greatly forward their growth. Afterwards they may be placed in the open air in a ſheltered ſituation, where they may remain 'till the autumn, when they muſt be placed under a frame to ſcreen them from froſt. In the ſpring the plants may be turned out of the pots, and planted in a warm border, where they will abide through common winters very well; but in ſevere froſts they are often killed, unleſs they are covered with tan, or ſome other covering: a few therefore of the plants ſhould be kept in pots, and ſheltered under a frame or in a dry ſtove in winter.

They multiply very faſt by offsets, ſo that when they are once obtained, there will be no occaſion to raiſe them from ſeeds. Moſt of them will thus flower the enſuing ſeaſon; whereas thoſe from ſeeds are three or four years before they flower.

The ſtalks and leaves of theſe plants decaying to the root in autumn, the roots in borders ſhould then be covered two or three inches thick with tan, to keep them from froſt, and alſo from mice, who are very fond of them. The ſpring, before the roots ſhoot, is the beſt time to remove and part them; but this ſhould not be done oftener than every third year, for when they are often parted they will be weak and not flower well.

[Ixia. See *Dilatris*, *Gladiolus*.

Ixina. See *Krameria*.]

IXORA. (*So named from a Malabar Idol.*)

Lin. gen. n. 131. *Reich.* 137. *Schreb.* 167. *Gærtn. t.* 25. & 95. *Juſſ.* 203.

Claſſ. 4. 1. Tetrandria Monogynia.

Nat. order of *Stellatæ.* *Rubiaceæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* four-parted, very ſmall, upright, permanent.

Cor. one-petalled, funnel-form. *Tube* cylindric, very long, ſlender. *Border* four-parted, flat: *diviſions* ovate.

Stam. *Filaments* four, above the mouth of the corolla, very ſhort. *Anthers* oblong.

Pist. *Germ* roundiſh, inferior. *Style* filiform, length of the tube. *Stigma* two-cleft.

Per. *Berry* roundiſh, two-celled.

Seeds by fours, convex on one ſide, cornered on the other.

Obs. *Seeds ſolitary! Partition perforated through the the middle.* Gærtn. S.

ESSENTIAL CHARACTER.

Cor. one-petalled, funnel-form, long, ſuperior. *Stam.* above the mouth. *Berry* four-ſeeded. (Seeds ſolitary, with a fleſhy ſoft albumen. *G.*)

SPECIES.

1. Ixora coccinea. *Scarlet Ixora.*
   Lin. ſpec. 159. *ſyſt.* 152. *Reich.* 1. 311. *fl. zeyl. n.* 54. *Oſb. it.* 220. *Gærtn. fruct.* 117. *Lour. cochinch.* 75. *Curt. magaz.* 169. *Burm. zeyl.* 125. *t.* 57. *Pluk. phyt. t.* 59. *f.* 2. (Jaſminum.) *mant. t.* 364. *f.* 1. (Arbor indica.) *Rheed. mal.* 2. 17. *t.* 13. (Schetti).
   Leaves oval half-ſtem-claſping, flowers in bundles.
2. Ixora alba. *White Ixora.*
   Lin. ſpec. 160. *Reich.* 1. 311. *fl. zeyl. n.* 55. *Gærtn. fruct.* 2. 88. *Lour. cochinch.* 76. *Pluk. phyt. t.* 109. *f.* 2. (Jaſminum). *Rheed. mal.* 2. 19. *t.* 14. (Bemſchetti).
   Leaves lanceolate-ovate, flowers in bundles.
3. Ixora americana. *American Ixora.*
   Lin. ſpec. 160. *Reich.* 1. 312. *amoen.* 5. 393.
   Leaves in threes lanceolate-ovate, flowers thyrſoid.

[4. Ixora faſciculata.
   Swartz prodr. 30.
   Leaves ovate-elliptic, thoſe of the branchlets ſubfaſcicled, peduncles ſubtriflorous.

5. Ixora multiflora.
   Swartz prodr. 30.
   Leaves lanceolate-ovate bundled, peduncles aggregate one-flowered very ſhort, berries one-ſeeded.
6. Ixora montana.
   Lour. cochinch. 76.
   Leaves turbinate-oblong, cordate at the baſe, flowers faſtigiate.
7. Ixora novemnervia.
   Lour. cochinch. 76.
   Stem ſcandent, leaves nerved rough, cymes terminating.
8. Ixora violacea.
   Lour. cochinch. 76.
   Leaves nerved hairy, flowers axillary.

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[x] Saliſbury. [y] Schneevogt. [z] Saliſbury. [a] Schneev. [b] Saliſbury. [c] Schneev. [d] Saliſbury.

9. Ixora parviflora.
Vahl ſymb. 3. 11. *t.* 52.
Leaves ſubſeſſile lanceolate-oblong, panicle terminating.]

DESCRIPTIONS, &c.

1. Stem woody, five or ſix feet high, ſending out many ſlender branches covered with a brown bark. Leaves oppoſite, or three or four at a joint. Flowers terminating in cluſters; they have very long ſlender tubes, are cut into four ovate ſegments, and are of a deep red colour.

[According to Loureiro's deſcription, the ſtem is ſhrubby, manifold, upright, three feet high. Leaves ovate, quite entire, oppoſite, ſmooth, ſeſſile not embracing. Flowers ſcarlet, faſcicle-cymed, faſtigiate, terminating. Corolla ſalver-ſhaped rather than funnel-ſhaped, with a very long ſlender tube, and a ſmall equally quadrifid limb. Calyx very ſmall, quadrifid, of the ſame colour with the corolla. Style longer than the tube; with an oblong, bifid ſtigma. Filaments very ſhort at the mouth of the tube, with oblong anthers.

Gærtner deſcribes the berry as fleſhy, ovate-globular, crowned with the four upright acuminate teeth of the calyx, black, two-celled: cells, clothed with their proper white membrane, entirely ſeparate from the ſeeds. Receptacle a fleſhy ſubſtance adhering to the perforation of the partition, and diffuſed over the whole internal ſurface of the ſeed. Seed in each cell one, ovate-rounded, on one ſide convex ſmooth and naked; on the other ſlightly concave, covered with a ſpongy ſubſtance from the receptacle, ferruginous or rufeſcent.

Linneus and Adanſon aſſign four ſeeds to the fruit, according to the Hortus Malabaricus. Gærtner could never diſcover more than two. Loureiro ſays, the berry is ſmall, emarginate, crowned, two-celled with one ſeed in each cell, rounded on the outſide, flat on the inner ſide. Gærtner refers to the Flamma ſylvarum of Rumphius (4. t. 46.) which is not our plant. Loureiro thinks the deſcription in p. 105 of that work not very different; and fig. 47, not 47, likely to be the plant.

Native of the Eaſt Indies, China, and Cochinchina. Introduced here in 1690, by Mr. Bentick[a]. Cultivated by Mr. Miller in 1768; and ſince by Dr. Fothergill at Upton, Mr. Thoburn, nurſeryman at Brompton, &c.[b]]

2. Stem woody, ſix or ſeven feet high, ſending out weak branches. Leaves oppoſite, ſeſſile. Flowers terminating in ſmall cluſters; they have long ſlender tubes, divided into four ſegments at top, and are white, without ſcent.

[Stem, according to Loureiro, ſhrubby, branched, upright, three or four feet high. Leaves ovate-oblong, acute, quite entire, ſmooth, oppoſite, ſubſeſſile. Flowers white, faſcicle-cymed, terminating. Berry, according to Gærtner, twin, broadeſt tranſverſely, crowned with the four-toothed calyx, fleſhy, two-celled, red. Receptacle pulpy, from the partition, filling the cavity of the ſeed. Seeds ſolitary, hemiſpherical-bullate.

Native of the Eaſt Indies and Cochinchina. Cultivated by Mr. Miller in 1768.]

3. This riſes with a ſhrubby ſtalk four or five feet high, ſending out ſlender branches oppoſite. Leaves oppoſite, ſix inches long, two inches and a half broad, on ſhort foot-ſtalks. Flowers at the ends of the branches in a looſe ſpike; they are white, and have a ſcent like Jaſmin, whence in Jamaica and other iſlands of the Weſt Indies, where this is a native, it is called Wild Jaſmin. [The Wild Jaſmin however of Jamaica is Pavetta? one of Browne (142), which is the Coffea occidentalis of Linneus.

In the amoenitates academicæ it is ſaid to be a tree, with the leaves in threes, on long petioles, lanceolate-ovate, ſmooth, quite entire, with a ſtipule to each petiole; the ſeed involved in an arillus, whence it is allied to the Coffea; the tube and border of the corolla much ſhorter than in the other Ixoras.

4, 5. Both natives of Jamaica[c].

6. Stem ſhrubby, upright, branched, four feet high. Leaves broader at the end, blunt, cordate at the baſe, quite entire, ſmooth, oppoſite, ſubſeſſile. Flowers terminating, ſcarlet. Theſe and the fruit of the ſame form with the two firſt ſpecies, and perhaps only a variety.

7. This is a large climbing branched unarmed ſhrub. Leaves ovate-lanceolate, quite entire, nine-nerved, ſubſeſſile, oppoſite. Flowers white, terminating, in hemiſpherical cymes. Tube of the corolla ſlender and very long; border quadrifid. Stamens above the throat. Stigma ovate, bifid. Berry inferior, two-celled, one-ſeeded.

8. This alſo is a large climbing branching unarmed ſhrub. Leaves lanceolate, nine-nerved, quite entire, hairy, ſubſeſſile, oppoſite. Flowers violet-coloured in axillary cymes; with the corolla and calyx quadrifid. Berry inferior, two-celled, with one ovate rough ſeed in each cell.—Theſe three are natives of Cochinchina[d].

9. Branches ſmooth, jointed, round at bottom but compreſſed at top. Leaves on very ſhort petioles, oppoſite, from two to three inches in length, very ſmooth, ſhining above, veined, quite entire, acute. Stipule on each ſide ſhort, acuminate. Panicle a hand in length, brachiate. Partial peduncles oppoſite, remote, with a ſmall leaf at the baſe of each, three-parted with the branches three-parted again; the laſt pedicels in bundles. Flowers ſcarlet (white). Calyx minute, with four blunt teeth. Corolla funnel-form: tube filiform, a little thicker at top; border four-cleft; ſegments linear, blunt. Stamens a little longer than the corolla. Style the length of the tube of the corolla, when examined by a magnifier appearing to have hairs thinly ſcattered over it. Stigma emarginate.

It is allied to I. coccinea (next to which it ought to be placed), but the flowers are only one-fourth of the ſize, and diſpoſed in racemed elongated corymbs. The leaves in I. coccinea are ſeſſile not embracing, and it varies with the ſegments of the corolla ſubovate and blunt, or lanceolate and acute.—Native of the Eaſt Indies[e].]

PROPAGATION AND CULTURE.

Theſe plants are propagated by ſeeds, when they can be procured from the countries where they grow naturally, for they do not perfect any ſeeds in England. They ſhould be ſown in ſmall pots as ſoon as they arrive, and plunged into a hot-bed; if they arrive in autumn or winter, the pots may be plunged in the tan-bed in the ſtove, between the other pots of plants, ſo will take up little room; but when they arrive in the ſpring, it will be beſt to plunge them in a tan-bed under frames; the ſeeds will ſometimes come up in about ſix weeks, if they are quite freſh; otherwiſe they will lie in the ground four or five months, and ſometimes a whole year, therefore the earth ſhould not be thrown out of the pots till there is no hopes of their growing; when the plants come up, and are fit to remove, they ſhould be each planted in a ſeparate ſmall pot, filled with light earth, and afterwards treated in the manner directed for the Coffee-tree.

They may alſo be increaſed by cuttings during the ſummer months, and planted in ſmall pots plunged into a moderate hot-bed, covering them cloſe either with bell or hand-glaſſes to exclude the external air, ſhading them carefully from the ſun during the heat of the day, until they have put out good roots, when they ſhould be parted, and each put into a ſeperate pot, treating them as the ſeedling plants.

[Mr. Curtis remarks, that it is cuſtomary in this country to treat the Ixora as a ſtove plant; but that it may perhaps be leſs tender than we are aware of.]

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[a] Hort. kew.

[b] Curtis.

[c] Swartz.

[d] Loureiro.

[e] Vahl.

END OF THE FIRST VOLUME.

Lot 368